



Mauritius Research Council
INNOVATION FOR TECHNOLOGY

**A LEGAL INFORMATION
RETRIEVAL SYSTEM
FOR MAURITIUS**

Final Report

December 2018

Mauritius Research Council

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MAURITIUS RESEARCH COUNCIL FINAL REPORT

PART I- PROJECT IDENTIFICATION INFORMATION

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PART II – SUMMARY OF COMPLETED PROJECT

Mauritius has a ‘hybrid’ legal system, combining both the civil and common law practices. Its legal system is governed by principles derived both from the French Code Napoléon and the British common law. This legal hybridity does not only make legal research even more complex and time consuming but also affect the rate at which cases are decided and judgments are delivered. To address both the limited access to large repositories of legal data and the judicial constraints faced by the Mauritius Judiciary in terms of resources, budget, labour and time, we have developed an information retrieval system to assist in the retrieval of legal documents. The database contains around a thousand acts and judgements of the Supreme Court of Mauritius for the years 1968-2017. The information retrieval engine allows queries to be formulated in natural language. It offers a unique bilingual feature where queries can be entered in French and results are displayed from both English and French documents and vice versa. The system is adapted to help users to decide which of the retrieved documents are most likely to convey their retrieval needs, firstly by ranking the documents in descending order of relevance and secondly by displaying relevant sections from relevant statutes. This research project will contribute to the benefit of the society considering that the information retrieval system is freely accessible and requires no formal training to use. It would be helpful to laypersons, law students, scholars, legal research assistants and legal professionals such as lawyers, attorneys, notaries who may have different information retrieval needs.

PART III – TECHNICAL INFORMATION

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I. Introduction

Law is a profession which is highly dependent on research. Legal research is an activity that is both time consuming and costly [1]. Information and Communication Technologies are transforming the way in which legal research is carried out [2][3]. More and more legal communities (universities, libraries, legal scholars, legal practitioners, students, etc) around the world are increasing their investment in online legal services rather than on law books. Many universities are now challenging the way in which law and legal research has been taught for the past two centuries and wish to be prepared for the paradigm shift that is occurring in the way legal documents are being accessed [4][5].

It is commonly reported that access to legal information is a key to administer justice rightly in any democratic country [6]. However, we also live with the reality that legal professionals and actors, while operating in a highly intensive information environment often encounter considerable barriers in their quest to find relevant information or specific answers to their legal queries [7]. Lawyers, attorneys, legal professionals and other actors operating in the legal domain are often on the run for legal information search because they need to be constantly updated about the recent developments in the law, about legal precedents or even about how justice is rendered in a particular case.

The legal profession is particularly characterised by information and case law abundance and most importantly by a continuous flooding of amendments and additions to the legal statutes [8]. However, in most countries, there is a lack of all-inclusive or complete law collection and there are in most cases substantial gaps which require attention and redress. It is also unfortunate to note that unlike other fields, like in the medical field for example, that equally have tremendous amount of information available, the legal domain to our knowledge has barely any kind of information retrieval system that would enable actors operating in the legal profession to submit a query in natural language and be able to get specific answers to their queries.

The amount of available information in the legal sphere of Mauritius is massive. Evidence from the Supreme Court's Annual Report 2017 depicts that the number of cases lodged before the Mauritian Judiciary in the year 2017 was 118,468 [9] and the number of outstanding cases was 40,980 for the same year. As the old adage goes, "justice delayed is justice denied".

Mauritius' position with respect to access to legal information is also quite restricted. With the rise of new emerging sectors like the ICT/BPO and the Ocean Economy, there will be also a parallel rise in the number of upcoming legislations. With all these new developments, it is progressively more and more difficult for actors operating in the legal arena to deliver quality work on time. Legal research constitutes a very large portion of the time that legal practitioners spend in preparing their cases. Information is required in all aspects for a legal practitioner to effectively deliver to his duties. Be it for giving a legal advice or drafting up a document or even to assist clients inside or outside the Courts, information is of utmost importance.

According to a World Bank report, Mauritius is doing well in areas like cross-border trade, company registration and taxes but additional reforms are required in the judicial domain [10]. The vision of the Mauritian Government via its two-phased eJudiciary project, which started in 2010, is to implement an online case filing and management system to improve the efficiency of the Judiciary in Mauritius [11][12]. The eJudiciary project does not currently cater for legal research.

With these issues in mind and considering the fact that there is a lack of all-inclusive platform that would effectively help the legal professionals or the public in general to obtain precise answers to their queries, we propose to develop a legal information retrieval system to assist and support legal practitioners in their day-to-day work. A prototype system is currently accessible at www.lawanswers.me. However, the knowledge-base of the system is very limited. In this new project, we will upgrade the database substantially and we will also improve the search algorithm.

This report proceeds as follows. In the next section, we list the main objectives of the proposed system, the achievements, the issues that have been addressed and the scope of our work. In section III, we provide an assessment of some legal information

retrieval systems. Section IV provides a small overview of the workshop that was held in Rodrigues. The implementation aspects of the project are described in Section V. Section VI provides details about how the portal was evaluated through the use of a questionnaire. Section VII describes how the outstanding work after the submission of the progress report has been tackled and Section VIII concludes the report.

II. Objectives v/s Achievements

The main objectives of the system are as follows:

1. To improve on the existing lawanswers.me portal by adding more legislations and many more judgments.
2. To improve the search process in lawanswers.me by making use of proven technologies such as Semantic Web and Web 3.0 technologies.
3. New types of search will be added such as search by Judge, search by Counsel/Attorney, search by SCJ number, search by Year, etc.
4. More complex types of searches will also be made possible such as having compulsory and optional keywords in the query.
5. Based on feedback received from the previous system, three additional sections will be added to the system: an academic section containing research articles & law books, a section containing regulations and another one containing other types of legal documents & resources.
6. To create a bi-lingual system whereby users can enter their queries in the French language, but answers will be returned in both French and English languages.
7. Ranking algorithms will be investigated whereby the answers will be ranked in order of priority. For example, sections from the Constitution may be given priority over other legislations and regulations.
8. The system will be evaluated by potential users and after getting their feedback, the system will be adapted as necessary.
9. To disseminate the acquired knowledge to relevant stakeholders

The following tasks have been completed from 08 January 2018 and 07 December 2018.

1. We have downloaded about 13000 new judgements from the website of the Supreme Court of Mauritius. The earlier system contained only 500 judgements for the year 2013 only. In the current systems, the years 1968 to 2017 are covered.
2. We have used the Google Translate API to convert text from English into French and vice-versa. The API is also used to detect the language first before the conversion.
3. The user can now search for cases based on the name of the judge, the name of counsel/attorney, the SCJ number or by year. However, our interface has been kept simple and the user has to type the information in the same way as before. Double quotes must be used appropriately in order to locate relevant information.
4. Earlier all the keywords entered in the search query had to appear in the relevant documents in order for these documents to be returned. However, we have now relaxed this constraint and it is possible for documents to be returned in the search results even if they do not contain all the keywords.
5. Link to the following resources: academic articles, books, regulations and decisions from the privy council, have been added.
6. The system can accept queries in French and return the relevant French articles and/or documents such as the Code Civil Mauricien, Code de Commerce and the Code de Procedure Civil. We have also been able to develop a tool which allow users to input their queries in one language (e.g. French) and receive relevant results in another language (e.g. English) and vice-versa.
7. All the responses are ranked. Both the sections and judgements are ranked in order of their highest relevance. The relevancy is determined by using the frequency of occurrence of the keywords.
8. As part of the project, we travelled to Rodrigues Island from 27th to 29th May 2018. We mainly met with the Police Force in order to get their feedback about the system. The feedback obtained were very positive and useful. More details are provided later in this report.
9. We are planning to present the outcome of this research at the National Research Week which is being organised by the Tertiary Education Commission (TEC) on 2-5 April 2019.

III. Legal Information Retrieval Systems

In this section, we have assessed four existing web-based legal information retrieval systems. To standardize the evaluation of these legal-specific search engines, five main focus areas have been individually addressed:

1. Accessibility
2. Audience
3. User Interface
4. Search Result
5. Accuracy/Relevance of Search Information

A. Dalloz

Dalloz is a legal information retrieval system within the France Jurisdiction and the portal is operative since 2006 [13]. The Dalloz database not only covers materials from a wide range of legal doctrine like Administrative law, European & International Law, Civil Law, Penal Law (among others) but also provides access to more than 1.5M full text Court decisions and French legal dictionaries.

Focus Areas

Accessibility	<ul style="list-style-type: none">▪ Full and Free access to Dalloz is limited for a 15 day period. (It has a 15-day free trial scheme) After exhausting the free trial period, users are required to pay a monthly subscription fee in order to use the Dalloz legal information retrieval service. (Therefore, access is not free)▪ Access to the Dalloz portal can be earned by “One-time registration and perpetual “User-Name log-in”. (i.e. A user needs to create a user account and once a user-account is created, the latter can log-in by using his username & password only) Additionally, Dalloz offers the “Remember me” authentication option on the login box i.e. on choosing the option “Remember me” username name & password are prefilled for the user when he next needs to log in. This exercise of prefilling is convenient, less time consuming and avoids sign-in hassles.
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	<ul style="list-style-type: none"> ▪ As matter of convenience the Dalloz portal can be accessed and viewed from a host of devices like mobiles and tablets without compromising any of its features that is the mobile-version offers much of the same lauded functionality of the web-based version. (A clean, streamlined interface optimized for the modern mobile experience and which can be accessed from anywhere and at any time.) <p>However, in order to access and use the mobile-version users must ensure that mobile devices are connected to an internet network since access is impeded in network-less zones.</p> <p>However,</p> <ul style="list-style-type: none"> ▪ The cost of access is a major turn-off for unaffordable users. ▪ The inability to work offline on mobile devices does handicap the option of accessing the portal on those devices.
User Interface	<ul style="list-style-type: none"> ▪ The Dalloz interface loads quickly upon browsing. ▪ The interface has a well thought out colour palette: contrasting colour for text which makes reading easier and a white background which gives a modern and uncluttered look to portal. This balance of colour facilitates navigation and enhances users' experience. ▪ The navigation bar is consistent throughout the website and has an easy-to navigate layout. ▪ Menu bars on Dalloz are positioned in a horizontal fashion and at the top of the website. (Easy to read and locate) ▪ The dalloz interface provides 3 options for retrieving documents: (i) by Jurisprudence, (ii) by codified text and (iii) by non-codified text. Each option has a conspicuous and respective search (by

	<p>Keyword) box with customized filter tabs. This distinct and document-wise retrieval feature makes retrieval simple, easy, quick and user-friendly.</p> <p>Modifying a search</p> <p>Users can erase previously typed & selected wordings by hitting the “Effacer” button which will clear both the keyword search bar and filter boxes. This all-at-once clearing feature saves time when it comes to modifying a search. Once modified, users can run queries anew.</p>
Audience	<ul style="list-style-type: none"> ▪ Legal information can be viewed, queried and retrieved from the Dalloz portal by a variety of audiences. ▪ An interdisciplinary legal audience with completely different professions (e.g. Law students, Scholars, Judges Lawyers, Attorneys, Notaries, Legal aid workers) having completely different information retrieval needs. ▪ Laypersons with no or different levels of legal knowledge may encounter difficulties while using Dalloz since the menu and search bars throughout the portal are composed of juristic terms. ▪ There is some friction and resistance from those users who cannot afford the subscription fee imposed by Dalloz. Therefore, the portal is restricted to the general public.
Search Result	<ul style="list-style-type: none"> ▪ A clean layout of search results is displayed once a search is executed. ▪ The layout of the search results acts as a homepage once results are available and maintains a consistent look throughout.

	<ul style="list-style-type: none"> ▪ The search results are displayed in an expanded fashion with the search terms in a bold font. (which helps users to hone in on the queried information and enables scrolling through many documents quickly while getting a feel for the context of the search terms) ▪ Full view of a retrieved document can be achieved by a simple “click” on the red hyperlink within the display list. (The portal is responsive to click feedbacks – Response given immediately after a click is made on a hyperlink) ▪ Once a document is on Full view mode, the interface provides more filtering options which helps to locate text and sections of interest within the document. This features makes retrievals easy, quick and simple
Relevance of Search Information	Almost accurate.

B. Seylii

The SEYLII web portal is an information retrieval system for legal research within the Seychelles jurisdiction [14].

Focus Areas

Accessibility

- The SeyLII portal provides free and unlimited access to users.
- No registration/ user-authentication is required in order to gain access to the SeyLII portal. (The portal does not ask for the creation of a custom ID, password and user account, therefore there is no “sign-in” issues. And no “sign-in” issues means no resistance or friction among users who do not wish to invest the effort in creating a user account)
- As matter of convenience the SeyLII web portal can be accessed and viewed from a host of devices like mobiles and tablets without compromising any of its features that is the portal offers much of the same lauded functionality of the web-based version. (It has a clean and streamlined interface which can be accessed from anywhere and at any time.)
However, in order to access and use the mobile-version, users must ensure that mobile devices are connected to an internet network since access is impeded in network-less zones.

Recommendation: Design and implement an offline mode for mobile version. This will allow users to access the SeyLII portal and retrieve save documents for offline reading.

These combined features not only provide an edge to the SeyLII web portal but also allow easy and quick retrievals at one’s convenience (i.e. information can be searched and retrieved at any time & from anywhere).

User Interface

- The SeyLII interface loads quickly upon browsing.
- The interface has a simple colour scheme. (Contrasting colour for text which makes reading easier and a white background which gives a modern and uncluttered look to the portal.)
- The navigation bar is consistent throughout the website and has an easy-to navigate layout.
- Menu bars on the SeyLII interface are positioned in a horizontal fashion and at the top of the website. This helps to conserve more vertical space and since users are more accustomed to reading from left to right across a screen, the horizontal menu bar is more efficient and easy to read. Additionally, the top navigations are easier to find because it is accompanied by the header and SeyLII logo, both of which are visually dominant objects on the webpage.
- Information on the SeyLII interface is neatly organized using headlines and subhead lines which makes the portal user-friendly.
- The SeyLII interface is responsive to the click feedback mechanism.
- The interface has a simple and main search bar, centrally located. (+ Filtering options are displayed in a right column once a result page is loaded)
- Link to access the e-Grey Book of Seychelles is conspicuously located above the main central search bar.
- A list of amended Acts (with significant recent additions) is neatly displayed on the interface which can easily attract the attention of users.

- The interface has an “interaction-section” where users can email their queries with regards to the publication of legal information on the SeyLII website. (The SeyLII portal is an engaging website)

Judgements

- Judgments can be searched and retrieved on the SeyLII interface by 3 options (i) Court-wise, (ii) by alphabetical order and (iii) year-wise from 1983 onwards.
- Information with regards to the delivery of the most recent decisions and the number of decided cases by a particular Court in Seychelles is clearly provided to users. This count information serves as a guide and helps users to locate themselves and in deciding if his search request needs to be modified, refined or expanded.
- Menus bars displaying Option (ii) and Option (iii) are arranged in a horizontal and chronological manner. This simple and expanded arrangement make retrievals easy and user-friendly.

Legislations

- Legislations can be retrieved through available filter options like: Acts, Bills, Consolidated Acts, Numbered Acts, Statutory Instruments and Government Notices.
- The legislations can be further narrowed: yearly and in a chronological manner. This renders retrievals simple, easy and user-friendly and less time consuming.

Cause list

- Cause lists are sorted court-wise and chronologically by year.

The SeyLII interface has a professional and easy to navigate layout.

Audience	<ul style="list-style-type: none"> ▪ Legal information can be queried and retrieved from the SeyLII portal by a wide variety of audiences. ▪ Both laymen with no or different levels of legal knowledge and jurists with completely different professions (e.g. Law students, Scholars, Lawyers, Attorneys, Notaries, Legal aid workers) having completely different information retrieval needs. <p>In short, the SeyLII portal is available to the general public.</p>
Search Result	<ul style="list-style-type: none"> ▪ A clean layout of search results is displayed once a search is executed. ▪ Viewing the complete text of a retrieved documents can be achieved by a simple “click” on the blue hyperlink within the displayed list. (Responsive to click feedbacks – Response given immediately after a click is made on a hyperlink) ▪ Full text of retrieved documents is expanded/opened on the webpage itself (No separate tab). The retrieved documents can also be downloaded in a convenient [Microsoft Word] format. The SeyLII portal also provide for suggested links to other related documents which might be of interest to a user. This renders searches and retrievals easy and quick. <p>Recommendation: Add the option of emailing retrieved documents – This will allow users to email a list of search results to themselves or e-mail the full text of a single document to save or print later at their convenience.</p>
Relevance of Search Information	<ul style="list-style-type: none"> ▪ The seyLII portal generates almost accurate results.

C. Lexis Nexis

Lexis Nexis Academic portal is an international information retrieval system covering five major categories: News, Business, Legal, Medical and Reference [15].

Focus Areas

Accessibility	<ul style="list-style-type: none">▪ Full and Free access to the Lexis Nexis portal is limited for a 7day period. (It has a 7-day free trial scheme) After exhausting the free trial period, access to Lexis Nexis is chargeable at a rate fixed by the Lexis Nexis Corporation. (Access is not free)▪ Access to Lexis Nexis portal can be earned by “One-time registration and perpetual “User-ID log-in”. (i.e. A user needs to create a user account) However, the Lexis Nexis portal offers the “Remember me” authentication option on the login box i.e. on choosing the option “Remember me” username name & password are prefilled for the user when he next needs to log in. This exercise of prefilling is convenient, less time consuming and avoids sign-in hassles.▪ As a matter of convenience, Lexis Nexis offers a high definition Lexis Nexis Legal research application which is accessible on any preferred mobile device. The application presents users with a clean and streamlined interface and with two simple choices: (i) Users can sign in using their existing Lexis Nexis credentials or (ii) they can choose to work offline. <p>(i) Signing-in</p> <ul style="list-style-type: none">▪ By signing in, one is given access to the LexisNexis content universe for searching and browsing. <p>(ii) Working-offline</p> <ul style="list-style-type: none">▪ The offline functionality only works if a user has saved
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	<p>documents and chosen to make them available for offline reading and editing. Though the offline mode offers less functionality than when the application is connected to the internet network, it is designed to assist users in taking legal research at any time and from anywhere.</p> <p>However,</p> <ul style="list-style-type: none"> ▪ After signing-in on a mobile device, things may get a little more complex (as users must do a lot of swiping), but not so much so that the intuitive feel of the interface is lost. ▪ The cost of access is a major turn-off for unaffordable users.
User Interface	<ul style="list-style-type: none"> ▪ The interface loads quickly upon browsing. ▪ The interface has a well thought out colour palette: contrasting colour for text which makes reading easier and a white background which gives a modern and uncluttered look to the portal. This balance of colour facilitates navigation and enhances users' experience. ▪ The Lexis Nexis portal provides two options for retrieving cases: (i) By Party name and (ii) By Citation <p>(i) Party Name</p> <ul style="list-style-type: none"> ▪ Cases can be retrieved by entering the name(s) of parties involved in a case. (Users can retrieve cases by entering the name of one party only and even if they are unsure about the correct spelling, variations can be entered and separated with "OR" e.g. <i>Roe</i> OR <i>Row</i>. This retrieval mechanism provides an edge to the retrieval system as it facilitates users in reaching their desired search result even if the latter has minimal search terms at hand. <p>(ii) By Citation</p>

	<ul style="list-style-type: none"> ▪ Retrieving cases by citation also facilitates users in their search for e.g. if a user only has the case-citations at hand. <p>In terms of case retrieval, the Lexis Nexis portal provides an easy, quick, simple and yet sophisticated mechanism.</p>
Audience	<ul style="list-style-type: none"> ▪ Legal information can be viewed, queried and retrieved from the Lexis Nexis web portal by a wide variety of audiences. ▪ Because of the sophistication of the web portal, retrieval by laymen with no legal knowledge may be challenging unless they use the Lexis Nexis user-manual to guide them during their search. ▪ Legal audience with completely different professions or under different institutions (e.g. Law students, Scholars, Judges Lawyers, Attorneys, Notaries, Legal aid workers) having completely different information retrieval needs. <ul style="list-style-type: none"> ▪ However, because of the professional and sophistic layout of the portal law student are often trained by their respective resource centers/institutions to conduct search and retrieval effectively. (This training may also extend to law firms) <p>There is some friction and resistance from those users who cannot afford the subscription fee. Therefore, the portal is restricted to the general public.</p> <p>To use the portal at its best, users may require some kind of training or go through the user-manual (which may be time-consuming).</p>
Search Result	<ul style="list-style-type: none"> ▪ A clean layout of search results is displayed once a search is executed.

- LexisNexis provides four display options for search results: (i) Document List, (ii) Full View, (ii) Key Word in Context (KWIC) and (iv) Expanded List.
- A series of tabs near the top of the results page indicates the current display option and allows easy navigation between the other three options. To switch between the four display options a user must click on the appropriate tab at the top of the list (or document). The tab of the display option currently selected will be white with red letters, while the three other options will be gray with white letters.

(i) Document List

- Search results are automatically returned in the “Document List” format. Each document on the list includes the name of the source publication, the publication section in which it appeared, the date published, the article length, and its dateline, headline, and byline.

Additionally,

- Documents displayed are sorted by default in reverse chronological order.
- The Document List also can be sorted by relevancy. When “Sort by Relevance” is selected, LexisNexis: (i) analyzes the content of your search results, (ii) creates a formula to rank documents according to greatest frequency and relevancy of terms and (iii) displays most relevant documents first.

(ii) Full View

- To bring up the selected document in Full View users must click on the red hyperlink from within the Document List. The Full View options displays the complete text of the document

retrieved and bolds the search terms - This help users to hone on the information he wants. From there, users can view subsequent (or previous) documents in Full View (use the **previous** and **next** links at the top or bottom of each document) or return to the Document List to select another document.

(iii) Key Word in context

- By using the KWIC option, users can determine whether a particular document is relevant to their need without reading the full text i.e. instead of reading through every word of a particular document to determine where the search terms are located (and implicitly, whether this is a useful document to the users' research), KWIC displays the keyword and any additional terms searched, along with approximately 15-25 words of text on each side of each search term(s). The KWIC feature makes the process of retrieval less time consuming.

(iv) Expanded List

- The Expanded list is a combination of the Document List and the KWIC formats, it offers the same data displayed on the Document List along with three to five words of text both before and after the key word(s) searched. It enables users to scroll through many documents quickly while getting a feel for the context of the search terms.

Modifying a search

- There are two ways to modify a search on the Lexis Nexis portal:
(i) Edit Search and (ii) Focus Search.

(i) Edit Search

- To **modify a search**, by way of "Edit Search" users can simply click on the **Edit Search** link displayed on the upper right-hand side of the search results screen (above the Print/Email buttons)

and where their current search will be saved.

- Users can erase everything previously typed by hitting the **Clear Form** button or they can change their query by adding or removing keywords, changing the date range, or selecting a different source. Once edits are completed, new queries can be run by clicking the search button.

(ii) Focus Search

- In addition to changing a search by using the **Edit Search** link, users can narrow an existing search with focus. The Focus feature allows users to spot words within their search results even if those words were not part of your original search request.

In the light of the above discussed features, it can be concluded that the Lexis Nexis portal offers a range of advanced and sophisticated options for easy and quick retrievals.

- After conducting a successful search, the Lexis Nexis portal offers users the capability to print or e-mail document references via the following options (i) Tag document, (ii) Print document, (iii) Email document and (iv) Save document

(i) Tag document

- The “document tagging” option allows users to pick and choose amongst the most valuable search hits and to signal the system which citations are to be printed or e-mailed. Additionally, users can later choose to have the citations of all checked documents recreated on a single page to be automatically e-mailed to the address they choose; to be downloaded to their system; or to be displayed through their browser.

(ii) Email document

- LexisNexis offers users the option of having the documents they

	<p>select from the current search results e-mailed to the address they choose.</p> <ul style="list-style-type: none"> ▪ However, this option comes with certain contractual restrictions, including the prohibition to disseminate or redistribute documents via electronic bulletin boards, e-mail, intranets, the Internet or similar electronic media but the e-mail option is very useful for e.g. if users would like to email a list of search results to themselves or e-mail the full text of a single document to save or print later at their convenience. <p>(iii) Print document</p> <ul style="list-style-type: none"> ▪ LexisNexis also provide the option of printing currently viewed document where users can use their browser's print feature to print the document. Additionally, Lexis Nexis gathers the citations of the documents that users have selected, assemble them on a single Web page, and display them in a full screen format that is suitable for printing. All citations for a particular search can also be printed. ▪ The gathering and assembling of citations in suitable printing formats make retrievals less time consuming. <p>(iv) Save document</p> <ul style="list-style-type: none"> ▪ Users also have the option to save or download documents as text via the browser software. ▪ Saving document allowing users to view the document later at a time convenient to him.
Relevance of Search Information	Almost accurate.

D. Supreme Court portal of Mauritius

The Supreme Court of Mauritius web portal is an information retrieval system for legal research within the Mauritius Jurisdiction [16].

Focus Areas

Accessibility	<p>Since website accessibility is a subset of website usability, it is important to ensure that the site is accessible as part of the aspects that make it usable and provide good users' experience.</p> <ul style="list-style-type: none">▪ The Supreme Court of Mauritius portal provides free and unlimited access to users.▪ Access to the Supreme Court of Mauritius portal can be earned by "One-time registration and perpetual "User-name log-in" <p>One -Time Registration and User-Name Log-in</p> <ul style="list-style-type: none">▪ The one-time registration & user-name login feature of the Supreme Court of Mauritius portal requires a user to register (for the first time) where the latter inputs his/her basic information such as full name, gender, personalized user name, security question, occupation and email address. Once registered, a user-account is automatically generated by the system [and the details are stored on the Supreme Court of Mauritius website users' database.] <p>After registration, whenever a user wants to access his Supreme Court of Mauritius user-account, the latter will only need to enter his personalized user name and password.</p> <p>[Additionally, for security reasons users will have to change their password (only) every 90 days.]</p>
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- This method of accessibility which provides perpetual user-name log-in once a user is registered is speedy, simple and much convenient than the requirement of logging in with full details each time a user wants to access his Supreme Court user's account.
- In addition, the Supreme Court of Mauritius portal offers the "Remember me" authentication option on the login box i.e. on choosing the option "Remember me" username name & password are prefilled for the user when he next needs to log in. This exercise of prefilling is convenient, less time consuming and avoids sign-in hassles.
- The "Register" and 'Login" options are conspicuously located at the top right corner of the web page. The Supreme Court of Mauritius web portal also provides for "Forget your password" functionality which helps to retrieve password easily by a user who fails to remember.
- However, some materials like: Judgments, Cause List and Legislations can be retrieved without registration while other materials like LPVC past-exams papers are available only to registered members.
- As matter of convenience the Supreme Court of Mauritius portal can be accessed and viewed from a host of devices like mobiles and tablets without compromising any of its features that is the mobile-version offers much of the same lauded functionality of the web-based version. (A clean, streamlined interface optimized for the modern mobile experience and which can be accessed from anywhere and at any time.)
However, in order to access and use the mobile-version users must ensure that their mobile devices are connected to an internet

	<p>network since access is impeded in network-less zones.</p> <p>Recommendation: Design and implement an offline mode for mobile version. This will allow users to access the Supreme Court of Mauritius portal and retrieve save documents for offline reading.</p>
User Interface	<ul style="list-style-type: none"> ▪ The Supreme Court interface loads quickly upon browsing. ▪ The interface has a well thought out colour palette: contrasting colour for text which makes reading easier and a white background which gives a modern and uncluttered look to the portal. This balance of colour facilitates navigation and enhances users' experience. ▪ Since users actually “scan” web pages much more than they “read” them, the Supreme Court interface is built in response to the “scanning” pattern of the users by placing important elements, like logos and key images along the axes that a user is expected to scan. ▪ Menu bars on the Supreme Court of Mauritius interface are positioned in a horizontal fashion at the top of the website thereby conserving more vertical space. The horizontal top navigations are easier to find by users as they are accompanied by a header and the “Coat of arms of Mauritius” (logo), both of which are visually dominant objects on the webpage. ▪ The Supreme Court interface is responsive to the click feedback mechanism. ▪ Information on the Supreme Court interface is neatly organized using headlines and subhead lines which makes the portal effective and user-friendly. ▪ The Supreme Court portal provides manifold information to

users in an organized and coherent manner about the structure and functioning of the Judiciary and the various services provided to Court users. It also provides basic information about Court systems, procedures and measures put in place to facilitate administrative formalities. (This makes the web portal user-friendly, effective and responsive to the needs of all Court users)

Cause-list

- The Supreme Court of Mauritius portal provides schedule for cases to be heard by the Courts of Mauritius on fixed/specific days in a given week in the form of a weekly cause-list. The Cause list gives details such as the Court Number, the bench hearing the case and the case details e.g. name of parties.
- The Supreme Court of Mauritius portal provides three options for searching and retrieving cause-lists. These are (i) Weekly search, (ii) “Calendar-view” search and (iii) Individual- Filter search
- Cause-list retrieved under options (i) and (ii): as an entire list generated through a court-wise search selection.
- The Individual Filter search option allows users to filter their search within parameters such as: date, category and court.

The exercise of retrieving cause-list is simple but tends to generate information broadly.

Recommendation:

- Add other filter options like “judge-wise”, case number-wise”, “Petitioner/ Respondent name-wise” and **“Lawyer-wise”**.
For instance, lawyers tend to use the cause list on a daily basis, by selecting the “lawyer-wise” search, a lawyer can generate his own cause list consisting of all cases to be dealt by him on a

particular day in the form of a regular cause list. Implementing such filters will make retrieval of cause-list more convenient and less time consuming.

Judgment

- Judgments can be retrieved from the Supreme Court of Mauritius portal through two options: either (i) Judgment by year or (ii) “Content search” and “More Search”.

(i) Judgment by year

- Judgments can be retrieved from x to 2018
- Judgements can be retrieved court-wise and by selecting the year of delivery.

This method of retrieving however generates a broad list of judgments.

(ii) “Content search” and “More Search”

- This mode of search allows users to retrieve more specific judgments by using search filters.
- The available search filters are: Title, Document number, Date parameter, Court, Jurisdiction, Subject, and Summary of case and delivered by the Judge, Magistrate or Acting President/ Vice-president of Intermediate Court Criminal Side.

Recommendation: Add more search filters like search judgment by parties. This will further narrow down the search result and be less time consuming.

Legislations

- Legislations can be retrieved by two modes (i) by alphabetical Order and (ii) by keyword search + coupled with search filter features namely: Act & Regulation, Bill, Proclamation and

	<p>Reprint.</p> <p>Retrieving legislations on the Supreme Court portal is therefore relatively easy and quick.</p> <p>The Supreme Court of Mauritius portal has a professional and easy-to-navigate layout. However, the search and retrieving capabilities can be further enhanced to yield more specific results and hence be less time consuming.</p>
Audience	<ul style="list-style-type: none"> ▪ Legal information can be viewed, queried and retrieved from the Supreme Court of Mauritius web portal by a wide variety of audiences. ▪ Both laymen with no or different levels of legal knowledge and an interdisciplinary legal audience with completely different professions (e.g. Law students, Scholars, Judges Lawyers, Attorneys, Notaries, Legal aid workers) having completely different information retrieval needs.
Search Result	<ul style="list-style-type: none"> ▪ A clean layout of search results is displayed once a search is executed. ▪ The layout of the search results acts as a homepage once results are available and maintains a consistent look throughout searching and filtering. ▪ Viewing the complete text of a retrieved documents can be achieved by a simple “click” on the blue hyperlink within the displayed list. (Responsive to click feedbacks – Response given immediately after a click is made on a hyperlink)

	<ul style="list-style-type: none"> ▪ Full text of a retrieved judgement or cause-list is automatically opened/ and can be accessed in a separate tab (leaving the layout of the search results on the Supreme Court of Mauritius web portal to act as a homepage) ▪ Full text of retrieved judgments and cause-list or any other documents are delivered in a convenient format [pdf] with printing, downloading and rotating options. (Additionally users can create an internal search bar within the retrieved-full text document by a keyboard command of “Ctrl +F”) <p>Recommendation: Add the option of emailing retrieved documents – This will allow users to email a list of search results to themselves or e-mail the full text of a single document to save or print later at their convenience.</p> <p>Modifying a search</p> <ul style="list-style-type: none"> ▪ A search can be modified by changing the details entered in the search field of the search engine by a simple click on the reset tool available conspicuously next to the search tool. (the reset option consumes less time) <p>Hence, retrieval of queried information are easy, quick and simple.</p>
<p>Accuracy/ Relevance of Search Information</p>	<ul style="list-style-type: none"> ▪ The Supreme Court of Mauritius web portal generates almost accurate results. ▪ In some cases, some extra documents may also be displayed other than those searched for.

IV. Workshop in Rodrigues

Visit to Rodrigues – 27th to 29th May 2018

The following issues were raised during our Q&A session conducted in Rodrigues on Tuesday 29th May 2018 at the Port Mathurin Police Station.

A. Recommendations from the audience

1. Include links to Privy Council cases
2. Include conventions, regulations and cases from the European Court of Justice (ECJ)
3. Include cases from lower courts

B. Questions from the audience

1. Copyright issues?
2. Is the lawanswers.me portal available/ accessible via a mobile app?
3. Can the lawanswers.me portal be referenced as a source?
4. Is the portal updated with regard to amendments in statutes?



@Rodrigues Police Divisional Headquarters, Tuesday 29th May 2018

Right: Professor (Dr. Dr.) Rajendra Parsad Gunpath, Principal Investigator

Center: Mr Pudaruth Sameerchand, Senior Lecturer, member of the research team

Left: Miss Karuna Devi Bhowany, Research Assistant for the project



@Conference Room of the Rodrigues Police Divisional Headquarters



@Port Mathurin Police Station, Rodrigues

V. Implementation

In order to develop this online information retrieval system, we needed to learn about the following tools.

HTML5

HTML5 is the latest evolution of the standard that defines HTML with new elements, attributes, and behaviours, and a larger set of technologies that allows more diverse and powerful Web sites and applications. HTML5 has several advantages compared to the previous version. It provides better semantics which allowing us to describe more precisely what our content is.

CSS

Cascading Style Sheets, most of the time abbreviated as CSS, is a stylesheet language used to describe the presentation of a document written in HTML. CSS describes how the structured element must be rendered on screen.

MySQL

MySQL is a freely available open source Relational Database Management System (RDBMS) that uses Structured Query Language (SQL). SQL is the most popular language for adding, accessing and managing content in a database. It is most noted for its quick processing, proven reliability, ease and flexibility of use. MySQL is an essential part of almost every open source application. MySQL has been used as database server as it is free, is widely used and there are plenty of free tutorials to explain how to use it and what to do when errors are encountered.

Thus, an online Information Retrieval System has been developed using the above technologies.

The Legal Information Retrieval portal is currently hosted at: <http://lawanswers.me/>.

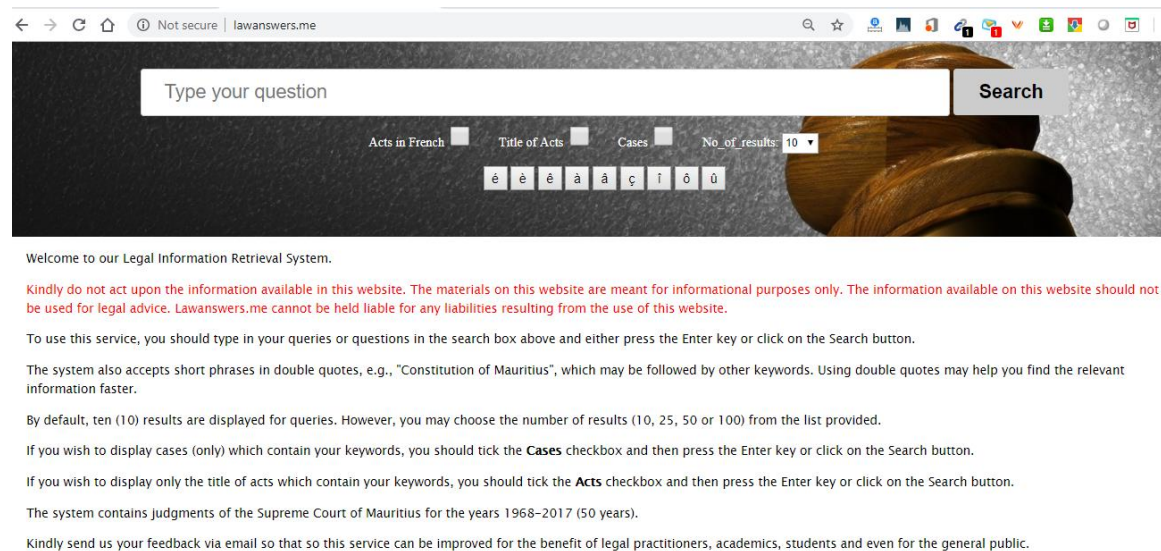


Figure 1. Home Screen for the Information Retrieval System

Figure 1 above shows the main screen for the information retrieval system. One of the main objectives of our work is to provide a simple graphical user interface for users to interact with the system. The complexity will reside in the query processing module. The idea is to make the system useful not only to legal practitioners who know how acts, cases and other legal reports are structured and who has their own legal jargons to refer to legal entities but also to laypeople who do not use legal terms. Our system allows a user to input a query using natural language, i.e., there are no specific rules to follow. The user can type anything he/she wants in a free style.

Case 1:

The screenshot shows a web browser window with the address bar displaying 'Not secure | lawanswers.me'. The search bar contains the query 'what are the powers of the Parliament of Mauritius' and a 'Search' button. Below the search bar, there are filters for 'Acts' and 'Cases', and a 'No of results: 10' dropdown. A keyboard layout is visible below the filters. The search results are displayed in a list format, with the first result being 'Section 26 Powers of Parliament of THE CONSTITUTION 1968'. The text of this section is highlighted in blue. The text of the section is: 'Parliament may make provision (a) for the acquisition of citizenship of Mauritius by persons who are not eligible or who are no longer eligible to become citizens of Mauritius by virtue of this Chapter; (b) for depriving of his citizenship of Mauritius any person who is a citizen of Mauritius otherwise than by virtue of section 20, 22 or 23; (c) for the renunciation by any person of his citizenship of Mauritius; or (d) for the maintenance of a register of citizens of Mauritius who are also citizens of other countries. [S. 26 amended by Act 23 of 1995.]' The other results in the list are 'Section 31 Parliament of Mauritius of THE CONSTITUTION 1968', 'Section 6 Powers of Bank of BANK OF MAURITIUS ACT', 'Section 57 Prorogation and dissolution of Parliament of THE CONSTITUTION 1968', and 'Section 286 Cessation of business in Mauritius of THE COMPANIES ACT 2001'.

Figure 2. Sample Query 1 and Respective Answer

Figure 2 shows the answer returned by the system in response to the question *<what are the powers of the Parliament of Mauritius?>*. In this case, we have been very lucky in that the system has been able to return what can be considered as the best answer for this question. This answer comes from Section 26 of the Constitution of the Republic of Mauritius. The name of the act has been returned as well.

Our query processing module is able to extract the important terms from the query. For example, in this case, the keywords were *powers*, *Parliament* and *Mauritius* while words like *what*, *are*, *the* and *of*, which are of much less significance are not used as keywords. The selected keywords are also highlighted in the answer. The system is case insensitive in that it makes no difference between lowercase and uppercase characters. Currently, the system can return 10, 25 or 50 answers.

Case 2:

what are the duties of a company director

Search

Acts Cases No of results: 10

Number of Results from Acts: 10

Section 143 Duty of directors to act in good faith and in best interests of company of THE COMPANIES ACT 2001
 (1) Subject to this section, the directors of a **company** shall - (a) exercise their powers in accordance with this Act and with the limits and subject to the conditions and restrictions established by the **company**'s constitution; (b) obtain the authorisation of a meeting of shareholders before doing any act or entering into any transaction for which the authorisation or consent of a meeting of shareholders is required by this Act or by the **company**'s constitution; (c) exercise their powers honestly in good faith in the best interests of the **company** and for the respective purposes for which such powers are explicitly or impliedly conferred; (d) exercise the degree of care, diligence and skill required by section 160; (e) not agree to the **company** incurring any obligation unless the **director** believes at that time, on reasonable grounds that the **company** shall be able to perform the obligation when it is required to do so; (f) account to the **company** for any monetary gain, or the value of any other gain or advantage, obtained by them in connection with the exercise of their powers, or by reason of their position as directors of the **company**, except remuneration, pensions provisions and compensation for loss of office in respect of their directorships of any **company** which are dealt with in accordance with section 159; (g) not make use of or disclose any confidential information received by them on behalf of the **company** as directors otherwise than as permitted and in accordance with section 153; (h) not compete with the **company** or become a **director** or officer of a competing **company**, unless it is approved by the **company** under section 146; (i) where directors are interested in a transaction to which the **company** is a party, disclose such interest pursuant to sections 147 and 148; (j) not use any assets of the **company** for any illegal purpose or purpose in breach of paragraphs (a) and (c), and not do, or knowingly allow to be done, anything by which the **company**'s assets may be damaged or lost, otherwise than in the ordinary course of carrying on its business; (k) transfer forthwith to the **company** all cash or assets acquired on its behalf, whether before or after its incorporation, or as the result of employing its cash or assets, and until such transfer is effected to hold such cash or assets on behalf of the **company** and to use it only for the purposes of the **company**; (l) attend meetings of the directors of the **company** with reasonable regularity, unless prevented from so doing by illness or other reasonable excuse; and (m) keep proper accounting records in accordance with sections 193 and 194 and make such records available for inspection in accordance with sections 225 and 226. (2) A **director** of a **company** that is a wholly-owned subsidiary may, when exercising powers or performing **duties** as a **director**, if expressly permitted to do so by the constitution of the **company**, act in a manner which he believes is in the best interests of that **company**'s holding **company** even though it may not be in the best interests of the **company**. (3) A **director** of a **company** that is a subsidiary, other than a wholly-owned subsidiary, may, when exercising powers or performing **duties** as a **director**, if expressly permitted to do so by the constitution of the **company** and with the prior agreement of the shareholders (other than its holding **company**), act in a manner which he believes is in the best interests of that **company**'s holding **company** even though it may not be in the best interests of the **company**. (4) A **director** of a **company** incorporated to carry out a joint venture between the shareholders may, when exercising powers or performing **duties** as a **director** in connection with the carrying out of the joint venture, if expressly permitted to do so by the constitution of the **company**, act in a manner which he believes is in the best interests of a shareholder or shareholders, even though it may not be in the best interests of the **company**. (5) (a) Subject to paragraph (b), the **duties** imposed by this section shall be owed to the **company**, and not to the shareholders, debenture holders or creditors of the **company**. (b) Without prejudice to any other action with regard to the same matter that is lawfully available, including an action under section 170, any member or debenture holder, as the case may be, may apply to the Court for - (i) a declaration that an act or transaction, or proposed act or transaction, by the directors or any **director** or former **director** constitutes a breach of any of their **duties** under this Act; (ii) an injunction to restrain the directors or any **director** or former **director** from doing any proposed act or transaction in breach of their **duties** under this Act.

Section 194 Obligations of company and directors of THE INSOLVENCY ACT 2009
 (1) Where a receiver is appointed in respect of the property of a **company**, the **company** and every **director** of the **company** shall - (a) within 7 days make available to the receiver all books, documents and information relating to the property in receivership in the **company**'s possession or under the **company**'s control; (b) if required to do so by the receiver, verify by affidavit that the books, documents and information are complete and correct; (c) within 14 days after receipt of the notice of the receiver's appointment, or such longer period as may be allowed by the Court, make out and submit a statement as to the affairs of the **company**; (d) give the receiver such assistance as he may reasonably require; and (e) where the **company** has a seal, make the seal available for use by the receiver. (2) The receiver shall within 28 days after receipt of the statement under subsection (1)(c) or such extended period as the Court may allow, make the seal available for use by the receiver. (3) The receiver shall within 28 days after receipt of the statement under subsection (1)(c) or such extended period as the Court may allow, make the seal available for use by the receiver. (4) The receiver shall within 28 days after receipt of the statement under subsection (1)(c) or such extended period as the Court may allow, make the seal available for use by the receiver.

Section 330 Penalty on director or authorised agent of foreign company in cases of failure by director, agent or Board to comply with Act of THE COMPANIES ACT 2001
 (1) Every **director** of a **company** who fails to comply with section 38(1) or (4), 61(3), 148(1) or 246(2) shall commit an offence and shall, on conviction, be liable to a fine not exceeding 100,000 rupees. (2) Where the Board fails to comply with section 44(3), 45(3), 179(3), 191(2), 210(1), 223(1) or (2), 262(5) or 263(2), every **director** of the **company** shall commit an offence and shall, on conviction, be liable to a fine not exceeding 100,000 rupees. (3) Where the Board fails to comply with section 193, 207, 212(1), 218(1), 219(1) or 220, every **director** of the **company** shall commit an offence and shall, on conviction, be liable to a fine not exceeding 200,000 rupees. (4) Where a foreign **company** to which Part XXII applies commits an offence, every authorised agent of that foreign **company** shall commit the like offence unless he proves that the offence was committed without his knowledge or that he had exercised due diligence to ensure that the **company** complied with the provisions of the Act.

Section 16 Duties of Director of Audit of FINANCE AND AUDIT ACT 1973
 (1) The **Director** of Audit shall satisfy himself - (a) that all reasonable precautions have been and are taken to safeguard the collection of public money; (b) that all laws, directions or instructions relating to public money have been and are duly observed; (c) that all money appropriated or otherwise disbursed is applied to the purpose for which Parliament intended to provide and that the expenditure conforms to the authority which governs it; and (d) that adequate directions or instructions exist for the guidance of public officers entrusted with **duties** and functions connected with finance or storekeeping and that such directions or instructions have been and are duly observed; (e) that satisfactory management measures have been and are taken to ensure that resources are employed economically and utilised efficiently and effectively. (1A) The **Director** of Audit shall cause an annual audit and report on the account to the Parliament.

Figure 3. Sample Query 2 and Respective Answer

Figure 3 shows the answer returned by the system in response to the question *<what are the duties of a company director?>*. The system has been able to extract the important keywords which are *duties*, *company* and *director*. These are highlighted in the answer. The best answer to this question is Section 143 of the Companies Act 2001 and this is returned at the top of the list. All answers are ranked in order of relevancy. The relevancy is obtained by counting the frequency of occurrence of each keyword.

Section 143 Duty of directors to act in good faith and in best interests of company of THE COMPANIES ACT 2001
 (1) Subject to this section, the directors of a **company** shall - (a) exercise their powers in accordance with this Act and with the limits and subject to the conditions and restrictions established by the **company**'s constitution; (b) obtain the authorisation of a meeting of shareholders before doing any act or entering into any transaction for which the authorisation or consent of a meeting of shareholders is required by this Act or by the **company**'s constitution; (c) exercise their powers honestly in good faith in the best interests of the **company** and for the respective purposes for which such powers are explicitly or impliedly conferred; (d) exercise the degree of care, diligence and skill required by section 160; (e) not agree to the **company** incurring any obligation unless the **director** believes at that time, on reasonable grounds that the **company** shall be able to perform the obligation when it is required to do so; (f) account to the **company** for any monetary gain, or the value of any other gain or advantage, obtained by them in connection with the exercise of their powers, or by reason of their position as directors of the **company**, except remuneration, pensions provisions and compensation for loss of office in respect of their directorships of any **company** which are dealt with in accordance with section 159; (g) not make use of or disclose any confidential information received by them on behalf of the **company** as directors otherwise than as permitted and in accordance with section 153; (h) not compete with the **company** or become a **director** or officer of a competing **company**, unless it is approved by the **company** under section 146; (i) where directors are interested in a transaction to which the **company** is a party, disclose such interest pursuant to sections 147 and 148; (j) not use any assets of the **company** for any illegal purpose or purpose in breach of paragraphs (a) and (c), and not do, or knowingly allow to be done, anything by which the **company**'s assets may be damaged or lost, otherwise than in the ordinary course of carrying on its business; (k) transfer forthwith to the **company** all cash or assets acquired on its behalf, whether before or after its incorporation, or as the result of employing its cash or assets, and until such transfer is effected to hold such cash or assets on behalf of the **company** and to use it only for the purposes of the **company**; (l) attend meetings of the directors of the **company** with reasonable regularity, unless prevented from so doing by illness or other reasonable excuse; and (m) keep proper accounting records in accordance with sections 193 and 194 and make such records available for inspection in accordance with sections 225 and 226. (2) A **director** of a **company** that is a wholly-owned subsidiary may, when exercising powers or performing **duties** as a **director**, if expressly permitted to do so by the constitution of the **company**, act in a manner which he believes is in the best interests of that **company**'s holding **company** even though it may not be in the best interests of the **company**. (3) A **director** of a **company** that is a subsidiary, other than a wholly-owned subsidiary, may, when exercising powers or performing **duties** as a **director**, if expressly permitted to do so by the constitution of the **company** and with the prior agreement of the shareholders (other than its holding **company**), act in a manner which he believes is in the best interests of that **company**'s holding **company** even though it may not be in the best interests of the **company**. (4) A **director** of a **company** incorporated to carry out a joint venture between the shareholders may, when exercising powers or performing **duties** as a **director** in connection with the carrying out of the joint venture, if expressly permitted to do so by the constitution of the **company**, act in a manner which he believes is in the best interests of a shareholder or shareholders, even though it may not be in the best interests of the **company**. (5) (a) Subject to paragraph (b), the **duties** imposed by this section shall be owed to the **company**, and not to the shareholders, debenture holders or creditors of the **company**. (b) Without prejudice to any other action with regard to the same matter that is lawfully available, including an action under section 170, any member or debenture holder, as the case may be, may apply to the Court for - (i) a declaration that an act or transaction, or proposed act or transaction, by the directors or any **director** or former **director** constitutes a breach of any of their **duties** under this Act; (ii) an injunction to restrain the directors or any **director** or former **director** from doing any proposed act or transaction in breach of their **duties** under this Act.

Figure 4. Zoom In on an answer

Section 143 is quite a long section and in Figure 3, the whole section was not displayed. If the user wishes to display the section in full, he/she must click on the content and the full section will be displayed, as shown in Figure 4.

Case 3:

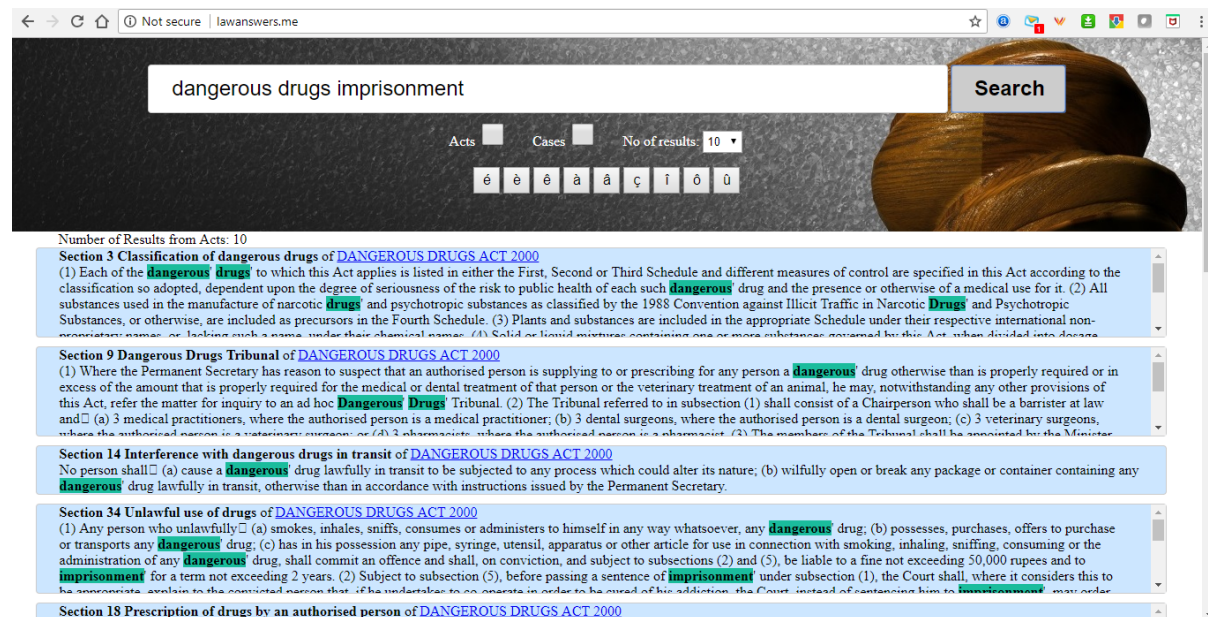


Figure 5. Sample Query 3 and Respective Answer

It is not important that questions are always posed in a question like manner. As mentioned earlier, the system is very flexible and the user can input his/her search query in free style. For example, in Figure 5, we have entered three keywords namely *dangerous*, *drug* and *imprisonment*. The idea was to see whether the system can tell us what the penalty for dealing in dangerous drugs is. The system has returned Section 3, 9, 14 and 34 of the Dangerous Drugs Act 2000 (as the first four answers). In this scenario, it is not possible to say what the best answer should have been. A large number of the fifty-nine sections of the Dangerous Drugs Act 2000 contains the words dangerous, drugs and imprisonment. Nevertheless, the system has returned some of the relevant sections and the relevant act, which the user can consult.

Case 4:

← → ↻ 🏠 ⓘ Not secure | lawanswers.me ☆

Search

Acts ☐ Cases ☐ No of results: 10 ▼

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Number of Results from Acts: 10

Section 222 Penalty for murder and infanticide of [CRIMINAL CODE ACT 1838](#)

(1) Any person who is convicted of - (a) murder or murder of a newly born child, shall be sentenced to penal servitude for life or, where the Court is satisfied that substantial and compelling circumstances exist which justify the imposition of a lesser sentence and has entered those circumstances on the record of the proceedings. **for a term not exceeding 60 years**; (b) attempt

Section 223 Penalty for manslaughter of [CRIMINAL CODE ACT 1838](#)

(i) (i) (1) Any person guilty of manslaughter preceding, accompanying or following another crime shall be liable to penal servitude for life or, where the Court is satisfied that substantial and compelling circumstances exist which justify the imposition of a lesser sentence and has entered those circumstances on the record of the proceedings. **for a term not exceeding 60**

Section 234 Castration of [CRIMINAL CODE ACT 1838](#)

(1) Any person guilty of the crime of castration, or amputation or destruction of any organ necessary to generation, shall be punished by penal servitude. (2) Where death has ensued therefrom servitude for life or, where the Court is satisfied that compelling reasons exist which justify the imposition of a lesser sentence and has specified the reasons on the record of the

Section 57 Plotting with foreign power of [CRIMINAL CODE ACT 1838](#)

(1) Any person who devises any plot or keeps up intelligence with any foreign power or the agent of a foreign power in order to move or stir it up to commit hostilities or levy war against the State, or to procure for it the means of so doing, shall be punished ☐ (a) by penal servitude for life or, where the Court is satisfied that compelling reasons exist which justify the

Section 41 Aggravating circumstances of [DANGEROUS DRUGS ACT 2000](#)

(1) For the purposes of this section, aggravating circumstances shall be deemed to exist whenever ☐ (a) the offender belongs to a criminal organisation or ring; (b) he participated in other unlawful activities facilitated by commission of the offence; (c) he used violence or a weapon in its commission; (d) he held public office and committed the offence in the purported

Section 62 Stirring up civil war of [CRIMINAL CODE ACT 1838](#)

Any attempt or plot, of which the object is either to stir up civil war by arming or by inciting the inhabitants to arm themselves against one another, or to carry devastation, massacre or plunder into one or more districts, shall be punishable by penal servitude for life or, where the Court is satisfied that compelling reasons exist which justify the imposition of a lesser

Section 64 Taking command of armed force of [CRIMINAL CODE ACT 1838](#)

Any person who - (a) without lawful right or reason, takes the command of an armed force, troop, fleet, squadron, man of war, fortified place, post, port or town; (b) continues to hold any military command against the order of the Government; or (c) being a commander keeps his army or troops embodied after the disbanding or dismissing of the same has been ordered.

Section 61 Inciting officer to mutiny of [CRIMINAL CODE ACT 1838](#)

Figure 6. Sample Query 4 and Respective Answer

An interesting feature of our system is its ability to extract exact phrases from the knowledge base. For example, suppose a user wanted to know the most severe sentences in the Republic of Mauritius. He/She can input the text “*for a term not exceeding 60 years*”. However, this requires that the user has some knowledge of the content and how it is structured. This feature will be very useful to those who will know how to use it well. Thus, at the click of a button, we are able to know which legislations contain the most severe sentences. In this case, the 10 results are:

Section 222 Penalty for murder and infanticide of CRIMINAL CODE ACT 1838
 Section 223 Penalty for manslaughter of CRIMINAL CODE ACT 1838
 Section 234 Castration of CRIMINAL CODE ACT 1838
 Section 57 Plotting with foreign power of CRIMINAL CODE ACT 1838
 Section 41 Aggravating circumstances of DANGEROUS DRUGS ACT 2000
 Section 62 Stirring up civil war of CRIMINAL CODE ACT 1838
 Section 64 Taking command of armed force of CRIMINAL CODE ACT 1838
 Section 61 Inciting officer to mutiny of CRIMINAL CODE ACT 1838
 Section 51 Stirring up war against the State of CRIMINAL CODE ACT 1838
 Section 50 Inducing or compelling President in the exercise of any lawful power of
 CRIMINAL CODE ACT 1838

In the same way, we can find all offences where the imprisonment is for a term not exceeding 30 years or any other key-phrases can be entered, as shown below.

Case 5: Keyphrase in double quotes with filter

"for a term not exceeding 60 years" drug Search

Acts ☒ No of results: 20 ▼

(3) notwithstanding subsection (2), any person convicted of an offence under section 29 (2) or 30 shall be sentenced to a fine not exceeding 2 million rupees together with penal servitude **for a term not exceeding 60 years**, where it is averred and proved that, having regard to all the circumstances of the case, the person was a **drug** trafficker.
[DANGEROUS DRUGS ACT 2000 31](#)

Related Cases:
2013 SCJ 038-STATE v BOUDEUSE CHARLES EDOUARD ALBERT-3
2013 SCJ 041-PALMYRE J L v THE STATE-3

Figure 7. Sample Query 5 and Respective Answer

The system also offers the opportunity to refine a result if too many answers are returned. For example, thirteen (13) results were initially returned for this query. Now, if the user wants to get only those sections which deal with drug offences, he/she can enter the word *<drug>* as shown above after the double quoted keyphrase. Upon hitting search, only one answer is returned in this case. The relevant cases from the knowledge base are also returned.

Case 6: List of Acts

land Search

Acts ☒ No of results: 20 ▼

Acts:
[LAND \(DUTIES AND TAXES\) ACT 1984 32](#)
[LANDLORD AND TENANT ACT 1999 15](#)
[MAURITIUS LAND TRANSPORT AUTHORITY ACT 2009 15](#)
[ENVIRONMENT AND LAND USE APPEAL TRIBUNAL ACT 2012 08 NOT IN OPERATION](#)
[LAND ACQUISITION ACT 1973 11](#)
[LAND SURVEYORS ACT 1976 09](#)
[AGALEGA ISLAND COUNCIL ACT 2004 03](#)
[STATE LANDS ACT 1874 19](#)
[OUTER ISLANDS DEVELOPMENT CORPORATION ACT 1982 06](#)
[STATE LAND \(ALIENATION\) ACT 1983 03](#)

Related Cases:
2013 SCJ 015-BUSINESS PARK OF MAURITIUS LTD v SOCIETE FUTURA-4
2013 SCJ 016-GRAND PORT SAVANNE DISTRICT COUNCIL v MONNERON M M &ORS-6
2013 SCJ 026-DEERPAUL J v SEEBORUTH B-7
2013 SCJ 030-TOORABALLY A v DABY A & ORS-6

Figure 8. Sample Query 6 and Respective Answer

In the example shown in Figure 8, we show that it is possible to list all the acts which contain one or more of the search keywords in their title by checking the **Acts** checkbox. For example, the keyword *<land>* returns 12 acts, ranging from Land (Duties and Taxes) Act 1984 to the State Land (Alienation) Act 1983. Four cases have

also been returned. It is possible for the user to input more than one keyword or a keyphrase in double quotes.

Case 7: Display of Acts

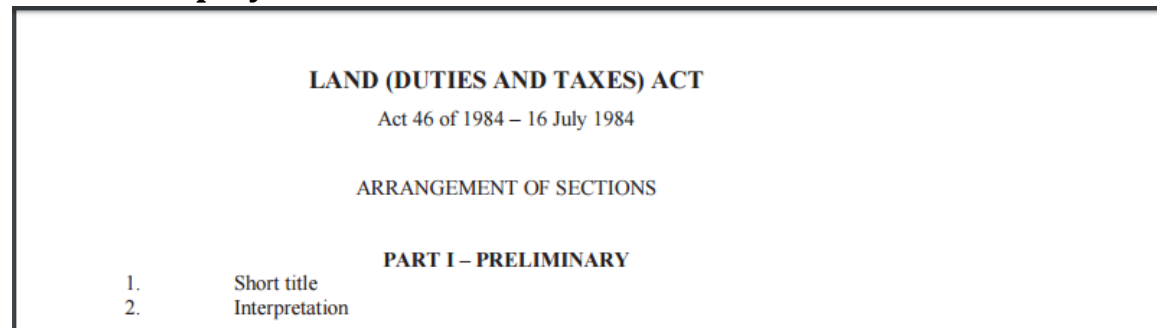


Figure 9. Sample Query 7 and Respective Answer

A user can open the acts listed in any results in another window of the browser, as shown above in Figure 9, where the Land (Duties and Taxes) Act which was listed in Figure 8 (above) has been opened for further reading. Once the act has been opened in a browser, the user can download the act, print it, perform additional search or share its link.

Case 8: Translation of French words into English

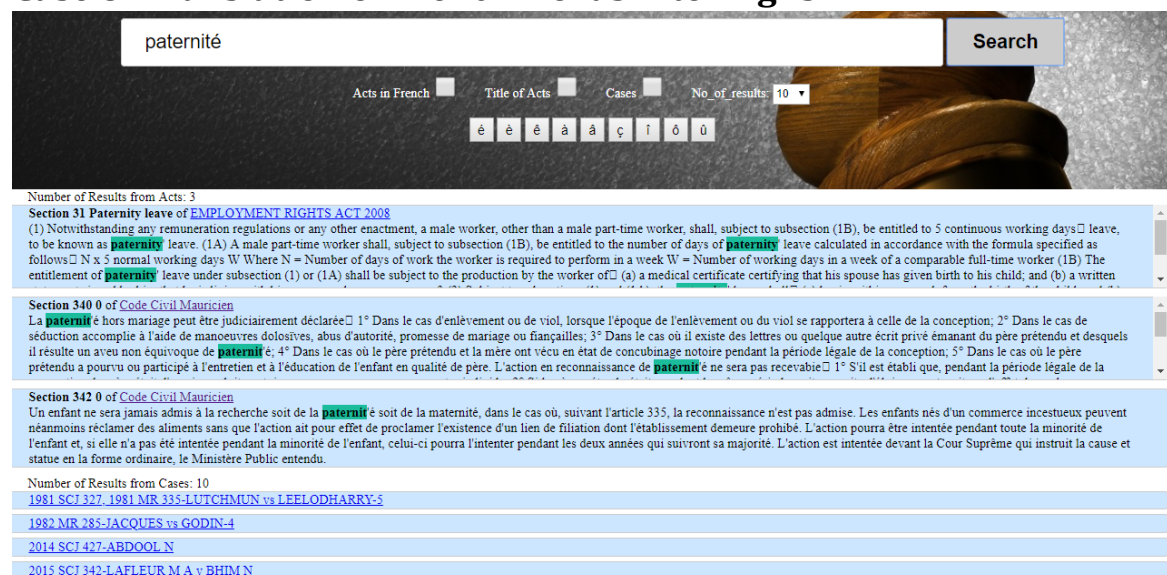
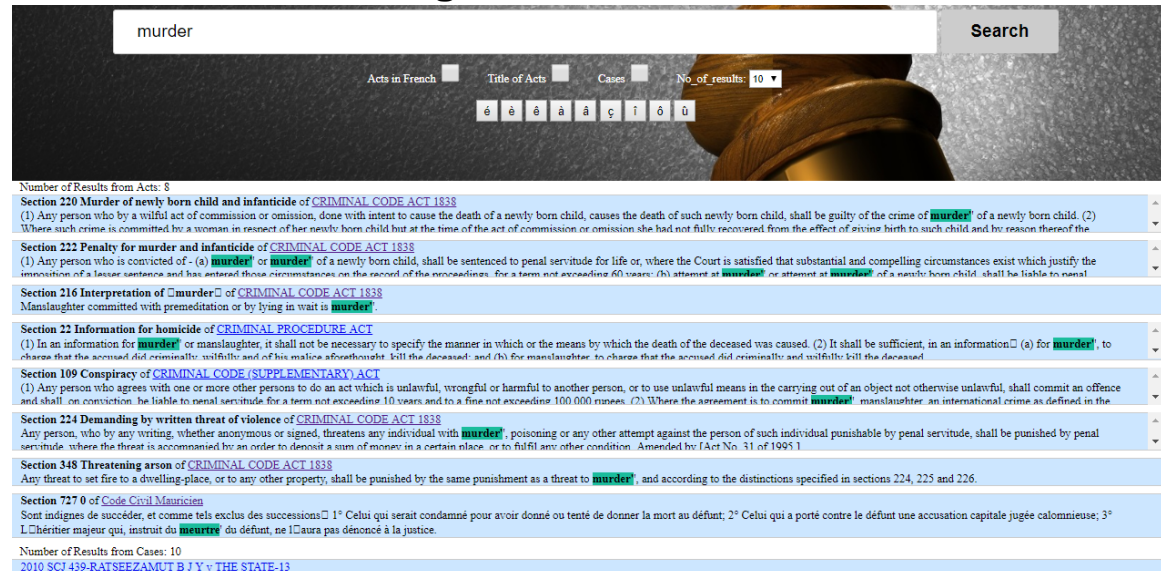


Figure 10. Sample Query 8 and Respective Answer

The keyword used in Figure 10 above was *paternité* (a French word). Looking at the search results, we can see that the results contain sections containing the word paternity (*paternité* in French) and the word *paternité* as well. Thus, our system is able to translate the keyword from French into English and then returns all sections

and cases that contains either the original French word(s) or the translated word(s) in English. This is a powerful feature, especially in the context of Mauritian Laws, as some of our main laws are in the French language.

Case 9: Translation of English words into French



The screenshot shows a search interface with a search bar containing the word "murder". Below the search bar, there are filters for "Acts in French", "Title of Acts", "Cases", and "No. of results" (set to 10). A keyboard layout is visible below the filters. The search results are displayed in a list format, showing the number of results from Acts (8) and Cases (10). The results include sections from the Criminal Code Act 1838, the Criminal Procedure Act, and the Code Civil Mauricien, all containing the word "murder" or its French equivalent "meurtre".

murder

Search

Acts in French Title of Acts Cases No. of results: 10

é è ê à â ç î ô û

Number of Results from Acts: 8

Section 220 Murder of newly born child and infanticide of [CRIMINAL CODE ACT 1838](#)

(1) Any person who by a wilful act of commission or omission, done with intent to cause the death of a newly born child, causes the death of such newly born child, shall be guilty of the crime of **murder** of a newly born child. (2) Where such crime is committed by a woman in respect of her newly born child but at the time of the act of commission or omission she had not fully recovered from the effect of previous birth to such child and by reason thereof the

Section 222 Penalty for murder and infanticide of [CRIMINAL CODE ACT 1838](#)

(1) Any person who is convicted of - (a) **murder** or **murder** of a newly born child, shall be sentenced to penal servitude for life or, where the Court is satisfied that substantial and compelling circumstances exist which justify the imposition of a lesser sentence and has entered those circumstances on the record of the proceedings, for a term not exceeding 60 years; (b) attempt at **murder** or attempt at **murder** of a newly born child, shall be liable to penal

Section 216 Interpretation of **murder** of [CRIMINAL CODE ACT 1838](#)

Manslaughter committed with premeditation or by lying in wait is **murder**.

Section 22 Information for homicide of [CRIMINAL PROCEDURE ACT](#)

(1) In an information for **murder** or manslaughter, it shall not be necessary to specify the manner in which or the means by which the death of the deceased was caused. (2) It shall be sufficient, in an information (a) for **murder**, to charge that the accused did criminally, wilfully and of his malice aforethought, kill the deceased; and (b) for manslaughter, to charge that the accused did criminally and wilfully kill the deceased.

Section 109 Conspiracy of [CRIMINAL CODE \(SUPPLEMENTARY\) ACT](#)

(1) Any person who agrees with one or more other persons to do an act which is unlawful, wrongful or harmful to another person, or to use unlawful means in the carrying out of an object not otherwise unlawful, shall commit an offence and shall, on conviction, be liable to penal servitude for a term not exceeding 10 years and to a fine not exceeding 100 000 rupees. (2) Where the agreement is to commit **murder**, manslaughter, an international crime as defined in the

Section 224 Demanding by written threat of violence of [CRIMINAL CODE ACT 1838](#)

Any person, who by any writing, whether anonymous or signed, threatens any individual with **murder**, poisoning or any other attempt against the person of such individual punishable by penal servitude, shall be punished by penal servitude, where the threat is accompanied by an order to deposit a sum of money in a certain place, or to fulfil any other condition. Amended by (Act No. 31 of 1995)

Section 348 Threatening arson of [CRIMINAL CODE ACT 1838](#)

Any threat to set fire to a dwelling-place, or to any other property, shall be punished by the same punishment as a threat to **murder**, and according to the distinctions specified in sections 224, 225 and 226.

Section 727 0 of Code Civil Mauricien

Sont indignes de succéder, et comme tels exclus des successions 1° Celui qui serait condamné pour avoir donné ou tenté de donner la mort au défunt; 2° Celui qui a porté contre le défunt une accusation capitale jugée calomnieuse; 3° L'héritier majeur qui, instruit du **meurtre** du défunt, ne l'aura pas dénoncé à la justice.

Number of Results from Cases: 10

[2010 SCI 439-RATSEEZAMUT B I Y v THE STATE-13](#)

Figure 11. Sample Query 9 and Respective Answer

In this case, we have entered the word murder as keyword. A total of 8 sections have been returned as well as a number of relevant cases. The first seven sections contain the word murder (original keyword in English). However, the last section contains the word *meurtre* (murder in French). If we did not had this feature, this eight section would not have been returned. Thus, we have shown that our system can accept queries in French and returns results containing the keyword in English and viced-versa.

VI. Evaluation of Portal

The purpose of the survey was to assess and evaluate the legal information retrieval portal by potential users so that it could be adapted as necessary to meet end-user satisfaction.

The survey was conducted to meet the following objectives:

- To test out the user-ability/ user-friendliness of the legal information retrieval portal.
- To test out the functionality of the portal.
- To assess the relevancy relation between the queries as formulated in the user request and the information displayed.
- To gauge the quality of data in the legal information retrieval system database.
- To identify key issues and other areas of focus for improvements, adaptations and follow-on research.

The survey was conducted by means of a questionnaire which was sent via email. The survey had 20 respondents, consisting of five legal practitioners and fifteen law students. The research focused clearly on evaluating the effectiveness and functionality of the legal information retrieval portal.

The questionnaire was broken down into two main sections. The first consisted of a set of close ended questions/statements with regards to the usability and functionality of the portal. The respondents were asked to record their answers by using a likert-type scale. Via this rating scale the respondents could specify their level of agreement or disagreement on a symmetric agree-disagree scale for a series of statements. The objective here was to use the ratings to capture the intensity of their feelings for each statement. The score of the likert-type scale was used to analyse results.

The second section examined the relevancy and reliability of displayed information. The objective here was (i) to determine whether there is a relevancy relation with respect to the queries as formulated in the user request and information displayed and (ii) to gauge the quality of data in the legal information retrieval system database.

Answers for the second section were also recorded by using the likert-type scale as explained above and the score was used to analyse results.

The third and final was a non-compulsory open-ended question requesting the respondents to give their personal views and suggestions for improving and adapting the search process of the legal information retrieval portal. The objective here was to understand both difficulties encountered during the search process and expectations of the respondents with regards to the portal.

A sample of the questionnaire is provided under Appendix 1.

SURVEY RESULTS

The results of the survey are sectioned into three main parts.

The first outlines the approach of the respondents with regards to the user-ability and user-friendliness of the portal. The second outlines the reliability of the database. The third lists down some comments of the open-ended question as authored by the two categories of respondents respectively.

A. Usability of the portal

Almost all respondents (both legal professionals and the students) agreed that the legal information retrieval portal:

- (i) Provides a customised layout and is user-friendly.
- (ii) Allows easy and quick retrievals to be made at one's convenience.
- (iii) Runs or modifies new searches easily.
- (iv) Shall use the portal for their future research works.

B. Relevance of search information

A majority of the legal professionals and law students agreed that:

- (i) There is a strong relevancy relation between the queries as formulated in the user request and the information displayed.
- (ii) The database is tagged as to its juristic value.

C. Comments authored by Respondents

Comments authored by the respondents under the open-ended question with regards to difficulties encountered and suggestions for adaptations and improvement of the portal are respectively tabulated below.

(i) Legal Professionals

Authored

Comments

1	“The Search feature has to be improved by implementing special keywords for in depth search. The search system available on the Supreme Court website is a good example. The range of materials available must also be reviewed”.
2	“The search keyword is limited to one-word search only. For example, if I shortlist my search to Acts, I need to type Data only to obtain the Data Protection Act. If I type data protection, the search result gives me a list of 10 other legislations but not Data Protection Act. Same thing happened for Finance Act as well. I need to type Finance only to obtain Finance Act. However, this problem does not occur when if I do not shortlist my search. Also, please ensure that the legislations are up to date”.
3	“I would suggest an option in order to put the “keyword” in the search box within a designated time-frame for e.g. [from 1995-2015]- all the judgements in regards to a topic flowing from an amendment passed in parliament in order to look for a trend in the sentence passed by the court following the aforesaid amendment to the legislation. Otherwise it is a great initiative, keep up the good work and all the best for enhancing the database”.

(ii) **Students**

Authored

Comments

1	“This is a very useful website. But apart from Acts and Cases, Doctrines also may be added since they are also relevant sources of legal information. Also, instead of giving only the exact words written in the search as result, the result may be shown for words of the same family as well where possible. For example, for the word “environmental”, results may show for “environmental” and “environment” as well. But this website is indeed a very useful one and I’m glad that I discovered it. I just gave some suggestions which may compliment it according to me”.
2	“I have used the portal-lawanswers.me and it is undoubtedly really helpful. It is easy to use and the results are also very appropriate and up to my search expectations. I wish to express my heartfelt thanks to the team working behind this legal information retrieval system which University students can make avail during revision and assignments”.

The main objective of the questionnaire survey was to assess and evaluate the legal information retrieval portal. Data collected from the 20 respondents confirmed that the legal information retrieval interface represents user-ease and comfort along a fast and simple access to the target utility. The essence of legal research is the retrieval of relevant legal information. The second part of the survey measured the quality of data in the database. This exercise was carried out by assessing the relevancy and reliability of retrieved information based on the queries as formulated by the two classes of respondents. From the survey results, it is established that there is a strong relevancy relation between the queries made and information displayed by the portal. Thereby, confirming that the data bank of the legal information retrieval system is tagged as to its juristic value.

VII. Status of Outstanding Work from Progress Report Submitted on 08th June 2018

(a) In the earlier version, only one answer was returned for each query. However, currently the user can display 10, 25, 50 and 100 responses in one search. This has been considered as sufficient by most users.

(b) In the earlier version, only the content of the section was displayed but now the section number is also displayed. A link to the relevant case is also available. On clicking this link, the user will have access to the full act in which further searching is possible using the facilities available in the browser.

(c) A help section has also been included in order to explain to users how to use the system in the most efficient way. Earlier, only some basic guidelines were provided on the home page of the portal.

(d) Earlier, the system contained judgements from the Supreme Court for the years 1997 to 2017. Now, it contains Supreme Court judgements from 1968-2017 (50 years).

(e) Earlier the knowledge base consisted only six (60) legislations only. Now, the system caters for more than 200 legislations.

(f) Users are now able to input queries in French and receive answers in English and vice-versa.

(g) All responses from the system have been ranked. The most relevant sections and acts appear at the top of the list. The ranking is based on the frequency of occurrence of the keywords in the search query.

(h) Links have been added for Academic articles, Privy Council cases, ECJ and others.

(i) An in-depth evaluation of the portal was undertaken. This is described in Section VI.

(j) Final report completed.

VIII. Conclusions

This project is in line with national goals and the government vision of creating an eJudiciary system for the Republic of Mauritius. The portal eJudiciary.mu is such a platform which works 24/7 and which allows the submission of cases at anytime from anywhere. eJudiciary Mauritius is considered to be one of the most advanced electronic legal filing systems in the world and the first of its kind in Africa. It consists of components such as lodging of cases, filing of legal documents and other case management facilities. However, it does not cater for legal research. Thus, our web-based question answer and information retrieval system intends to bridge this gap. Legal research is a core activity in the legal domain and is both time-consuming and costly. The availability of information at the click of a button will assist the judiciary and other legal practitioners to become more efficient by hopefully help to reduce delays in the preparation of cases, writing of judgements and the disposal of cases. This system will contribute to making the human resources of the Mauritian Judiciary more efficient.

Oral Presentation in National Research Week organised by Tertiary Education Commission (TEC) on 2-5 April 2019

Pudaruth, S., Gunpath, R. P., Soyjaudah, K. M. S. and Bhowany, K. D., 2019. An Information Retrieval System for the Mauritian Judiciary.

Software

A web-based information retrieval system has been implemented.

The website can be accessed at: <http://lawanswers.me/>

Acknowledgements

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