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**KARATINA UNIVERSITY**

**SCHOOL OF PURE AND APPLIED SCIENCE**

**DEPARTMENT OF COMPUTER SCIENCE AND INFORMATICS**

**PROJECT TITLE: WEB GUIDE SYSTEM**

**PROPOSED BY: KIBET DAVID**

**REG. NO: P101/1230G/16**

**A PROJECT PROPOSAL SUBMITTED TO THE SCHOOL OF PURE AND APLIED SCIENCES IN PARTIAL FULFILMENT FOR THE AWARD OF DEGREE IN BACHELOR OF SCIENCE IN COMPUTER SCIENCE IN KARATINA UNIVERSITY**

**JANUARY, 2019**

**DECLARATION**

I hereby declare that this project is my own original work e done perfectly based on the knowledge acquired mostly from my lectures and also from my research hardworking spirit. No one has the authority to possess it unless he/she has got an approved permission from the department of computer science and informatics Karatina University.

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The project to be approved by:

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**DEDICATION**

I would like to dedicate this project to my honoured family especially my father and mother due to their tireless spirit to provide all what it takes to continue with my studies. I would also like to dedicate it to my friends who regardless of their day-to-day demanding activities have helped me to proceed with this project.

**ACKNOWLEDMENT**

To start with, first I would like to thank my almighty creator who has guided me throughout my life and all whatever I have achieved so far. Thank you, God, for the favour you have granted unto me.

Secondly, I would like to express my gratitude to my parents for their support in the success of my life and the progress of this project more so financially. I also honour my supervisor Mr. Zablon Okari for his advice and guidance throughout the research of this project.

Thirdly, let all Karatina university lectures, students and all Karatina fraternity receive great gratitude for the support they have provided in my project. I will also not forget to appreciate my friends who have worked with me for the success of this project.

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**ABSTRACT**

This is a project proposal consisting three chapters that shows project’s problem statement, objectives, literature review and also the methodology to be used. The internet now days has been junked with a lot of contents from different environments by different web programmers and web masters who are fighting to optimize their contents, pages and information so that any user can easily view their pages and collect the contents. The main objective of the project is to design and develop a web guide system that will provide an interface which will help all internet users to easily locate and retrieve information from the internet using the web service. This technique that most web programmers and web masters apply is a proper technique but also on the other way round, creates a challenge to internet users in that almost all internet users are now days forced to key in or type exact keywords in order to be directed to specific pages for them to retrieve information hence consuming their time. This challenge is the specific objective that the web guide system will solve.

# **CHAPTER ONE: INTRODUCTION**

## **1.1 Background**

The global network of networks(internet) technology has helped humans carry on day-to-day activities by providing a lot of services, one of them being the web. The web software service being an information space where documents and other web resources are identified, enables users not only to get or send data but also search information in the internet.

Due to the increased digitalized technology that has been globally implemented, computers are now days located in almost every working environment. Existence of programs also guide the operation of these computers for it is made up of instructions which when executed triggers the computers to perform various tasks. Computers helps users achieve or retrieve information from the internet through the help of the web.

It is a requirement for all computer users to access or possess at least one device so that it can act as his/her shield for locating and retrieving contents from the internet. Each and every user has the capability of searching documents, resources and all kind of information from the internet. A case has arisen where, due to a digitalized era, flooded information in the internet has led to difficulty in terms of retrieving them in that one, at certain situations is forced to type correct keywords of the words he/she is searching. Due to this case, I have researched and thereby proposed a web guide system that will help all internet users overcome this challenge.

The web guide system is a system that will provide an interface to be used to guide users easily locate and retrieve information in the internet using the web. Even though different interfaces now days also provide links to different areas, there still exist a limitation in that when one clicks on these links, he/she is provided with millions and millions of different options, hence difficulty in choosing the correct option. Web guide system’s interface will not only consist of links but also, it will move further to categorize these links. To be specific, for example, news link will further be categorized to local news, business news, international news etc. Library link will consist of books which will further be categorized to history books, fiction books, Journals, arts just to mention a few. Sports link will further be categorized to athletics, football, cricket, tennis, basketball, hockey, volleyball etc. Music link will further be categorized under gospel music, secular music etc. By providing such an interface, this proposed system will help reduce the amount of time taken to locate and also retrieve information among several flooded documents or contents in the internet.

## 1.2 Problem statement

A lot of documents or information are now days flooded on the internet hence arising a problem on how to retrieve or get access to specific information that one intends to search. There is a possibility that one fails to get or reach the intended information with the problem being not the absence of information but it is because one has to visit so many sites or click several links in order to be satisfied with the content, he/she was targeting.

Below are the problems faced by most users who access the internet:

1. Increased time wastage

Much time is used to get specific data in the internet since the internet is junked with a lot of documents from several sources based on the digitalized day-to-day improvements done by so many programmers who apply optimization techniques so that their information and contents can easily be reached by users.

1. High cost

These lies in the financial sector where users are forced to consume a lot of money in terms of the means they are using in fetching information. For example, one has to use a lot of bundles in order visit so many web pages and this at one point will create room for poverty.

1. High risk of machine virus injection

There exists some malicious sites and links created by malicious users with the intention of harming user’s machines. As the users strive to locate resources from the internet, they may at one point visit these sites hence their computers end up being injected with viruses.

## **1.3 Objectives**

## **1.3.1 General objectives**

The main objective of the study is to design and develop a web guide system that will ease the task of internet users who access and retrieve information by the help of the web service.

## **1.3.2 Specific objectives**

1. To collect data from the users of the internet for the purpose of acquiring more information on the requirement of the system.
2. To analyze the collected information in order to derive useful or more important information that will help in subsequent improvement of the system after its implementation
3. To design the system together with its interface
4. Implement the web guide system for the purpose of performing its functionality
5. Test and debug the system in the current internet environment to check if there exist any errors and then evaluate the system.

## **1.4 Scope of the study**

The proposed system will entail coming up with a digitalized system to be used by internet users to overcome the challenge of information searching and retrieval by the use of web service in that it will provide an interface consisting of further categorized links to reduce the amount of time and also the cost required to get or reach the targeted information.

The system will also solve various challenges of computer security by utilizing the advantage of the provided interface consisting of further categorized links hence minimizing the task of visiting so many sites and therefore enhancing reduction of computer virus injection.

## **1.5 Justification**

Several users of the internet currently face a lot of challenges while using the web in accessing the internet. The main challenge, to be specific, is the time taken to search for specific information from the internet by the help on web service. A lot of information now days are flooded in the internet hence users find difficulty while using the web service to locate specific pages where their target contents are located within the shortest time possible. This system will consider the issue of time wastage hence justified for it will provide an interface consisting various further categorized links to link and direct users to specific web pages and sites.

## **1.6 Project Risks and Mitigation**

## **1.6.1Project Risks**

Security issues may arise since at one-point malicious users who exists in almost all environments, fail to appreciate proper interface that this web guide system will provide then end up hijacking various links stored in the database that links users to various web pages, in that when the users click on these links, they are redirected to unrelated sites there by ending up with false information.

## **1.6.2 Mitigation**

All database accessors and users should have a security domain, which is a set of properties that defines the operations the user may perform and the resource limits for the user in that each user should provide his/her correct and valid details.

## **1.7 Budget and Resources**

## **1.7.1 Resources**

This system will involve the usage of several essential requirements and resources in order to fulfil its functionality based on the user requirements. These requirements and resources include:

1. Computer machines/laptops with the following properties

* Minimum RAM of 4.00GB.
* At least 1Ghz processor.
* At least 500GB Hard Disk.

1. Knowledge of the following programming fields.

* CSS and HTML.
* PHP.
* JAVASCRIPT, AJAX and JSON.
* SQL

1. Database platform (XAMPP)

## **1.7.2Budget**

This is the total cost of developing the entire web guide system.

Table 1. 1 Budget and resources of the project

|  |  |  |
| --- | --- | --- |
| REQUIREMENT | DESCRIPTION | AMOUNT |
| Laptop | Hardware where all softwares are installed | Approximately kshs.30,000-35,000 |
| Research and preparation | All the requirement gathering tools e.g. questionnaires | Kshs.1000 |
| Internet services | e.g. bundles | Kshs.800 |
| Other services | Collecting research gathering tools | Kshs.500 |
| Labor work | e.g. transport and other man power efforts | Kshs.500 |
| **TOTAL** | Total amount to be used | Kshs.37800 |

## **1.8 Project Schedule**

This project will take approximately 14-15 weeks. The following Gantt chart shows the duration time for various activities with no activity colliding with other activities.

Table 1. 2 Schedule of the project

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **ACTIVITY** | **DURATION(WEEKS)** | | | | | | | | | | | | | | |
|  | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15- |
| System requirements |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| System design |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| System implementation and unit testing |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Integration and testing |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Deployment |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Maintenance |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

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# **CHAPTER TWO: LITERATURE REVIEW**

## **2.1 Introduction**

Due to an enhanced technology the internet is now days flooded with a lot of information (Michael, 2010) and therefore it creates a challenge on how to search and retrieve several information (Christopher D. Manning, 2008). This chapter entails the literature review based on the proposed system clearly citing the exact sources in which the related applications exists. It describes similar or related systems that are currently existing in the market which perform the same functions with the proposed system clearly stating their weakness and how the proposed system will come up with a solution to the problems.

## **2.2 Background**

Currently technology (Kelly, 2016)is in its best race of creating up solutions to existing problems. The problem that faced humans concerning where to find information has been worked on by invention and creation of several systems (Engel, 2018), internet being one of the global systems that provides information whenever one needs them. Even though these systems have solved this problem, there is still a problem concerning means and time taken in retrieving this information from the internet and that is why I have come up with a web guide system to surpass this problem.

## **2.3 Related work**

The following are related or similar works to the web guide system.

## **2.3.1 Yahoo search**

Is a search engine application from (htt4)<https://search.yahoo.com/> that help internet users to easily locate or search for information on the web (Jesse Russell, 2012). It provides an interface to the users that consists of several features such as various links to specifics sites. It also provides a search option where users can type for information for it to be retrieved on the internet. Other links still provides a large variety of information and users still face a challenge of choosing the provided options hence consuming their time and a web guide overrides this challenge by further sub-categorising these links.

## **2.3.2 Google**

Is a search engine application from (htt1) <https://www.google.com/> which acquired android for an estimated $50 million (Geis, 2015)and it consists of an interface that guide internet users to easily locate information from the web. It consists of several links to various sites and also features such as the news, images, books, maps etc. Users also are provided with a search option to search any information based on their interest. This application is the best and recommendable in extracting and retrieving any information from the web but the links provided still provide a large scope or many options to choose from and the web guide will minimize or reduce these options by further categorising the various provided links.

## **2.3.3 Owplus**

Is a best document search engine application from (htt2)<https://www.owplus.com/> that provides an interface to the internet users to search for documents in a variety of different formats such as PDF, Doc etc and users can also use it to edit documents (Ortega, 2014) . Its interface itself provides its users with a search option with no links provided hence causing a challenge to users. This defect is a problem since the internet now days is flooded with a lot of information hence one may be required to type in the correct keywords. Web guide surpass this challenge by providing links on the interface hence any user finds no difficulty in much understand various correct keywords of words.

## **2.3.4 GoWatchIt**

Is a movie search engine application from (htt3) <https://gowatchit.com/home> which helps users easily search for a variety of movies and also various shows on the web. Users are to search for a movie or a show basing various factors such as the on the actors who participated in the movie or show, titles of movies or shows or even the year in which it was acted or performed. This application is good and recommendable but the internet users still has got a task of providing and writing the actors or titles of the movie or shows hence still covering a large environment for one to get the type of movie or various shows to livestream or download and watch offline.

## **2.4 Literature review summary**

Even though there exist various systems that provides means through which internet users can retrieve their intended web contents and information, they have got a challenge and weakness on guiding these users on how they can locate the exact web pages hence consuming a lot of their time. These existing systems and application provide an interface mostly consisting of several links that users are to click to be guided to various sites and that is why I have proposed a web guide system that will ease the work of all internet users by providing a further step of categorizing various links.

# **CHAPTER THREE: METHODOLOGY**

## **3.1 Introduction**

This chapter entails the design methodology and also frameworks that will be used both in the design and development and testing of this web guide system. It will involve the use of a specific Software Development life cycle model. These chapter does not only contain the model used but it also entails ways and methods used to collect information in the life time (i.e. before, during and after) of the development of the system.

## **3.2 Project methodology**

Web guide system involves the use of iterative waterfall model as a model used during the Software Development Life Cycle (SDLC). This model is made up of phases such as system requirements, system design, implementation, integration and testing, system deployment and system maintenance in a sequential order. Iterative waterfall model provides feedback paths from every phase to its preceding phases. One has to complete a phase without proceeding to the other next phase, that is, all the defined goals of the previous phase has to be achieved, hence no overlapping of phases. This case illustrates that the output of one phase acts as the input of the next phase.

## **3.3 Iterative waterfall model diagram**

Figure 3. 1 Stages of iterative waterfall model

Requirement Analysis

System Design

Implementation

Testing

Deployment

Maintenance

## **3.4 Stages of the model**

## **3.4.1 System Requirements**

This is the first phase of waterfall model that deals with proper understanding, gathering and analysing requirements of the web guide system. Data will be collected from various internet users who will use this system using various techniques after which the system’s service, constraints and goals are to be established.

## **3.4.1.1 Techniques used**

## **3.4.1.1.1 Questionnaires**

Open ended questions and closed ended questions will be distributed to various internet users in order to fill in then they will be collected and documented so that it will be referenced as one of system’s progress.

## **3.4.1.1.2 Direct Observations**

A researcher or observer will be required to use certain specific information to go and observe in that specific environment.

## **3.4.2 System and Software design**

The precisely identified requirements from the system requirements phase will be studied in order to design a system architecture both based on the hardware and software specified. At one point a Data Flow Diagram (DFD) will be used to create just an overview of the web guide system without considering its deeper details. All the fields, which includes login accounts for the administrators who will access the database that will be used to store system’s links will be catered for.

## **3.4.3 System Implementation**

Coding will be done in this phase. The development of the web guide system begins from the far end of developing modules. These modules are independent from each other and has the capability of independently performing various functions.

## **3.4.4 System Integration and Testing**

After correcting all the errors in the units developed from the previous phase, the units will then be integrated to form a system and therefore testing is required to ensure that the system achieves both the user and software requirements. The testing process will take place since the system will be delivered to the internet users who will then be required to install it.

## **3.4.5 System deployment**

The system is then distributed to the user environment after undergoing both the functional and non-functional testing.

## **3.4.6 system maintenance**

After the system has been put into the user environment, users will test it in order to check if it meets their requirements. It involves correcting any type of error that comes across and modifying both system and individual components. System improvement will also be considered based on the arising user needs and requirements.

## **3.5 Design models**

## **3.5.1 Data Flow Diagram**

A data flow diagram will be used to graphically show how information flows through a system. Mostly it considers the flow of data in a system. It creates an overview of the system without considering its much details.

## **3.5.2 Use Case Diagram**

It will be used to graphically show the overview of the actors involved a system, different functions needed by those actors and how these different functions interact.

## **3.6 Implementation tools**

## **3.5.3 CSS and HTML**

Cascading Stylesheet (CSS) is a stylesheet language used mostly by programmers to change the layout of the documents. It changes the style in which elements used to design the system will be displayed on the user’s screen. Hypertext Mark-up Language (HTML) is one among many languages that will be used to develop the proposed system.

## **3.5.4 PHP**

Hypertext Preprocessor (PHP) is a server scripting language used while interacting with the database in a way that it processes the requests made to the database or from the database. Users use HTML and CSS mostly while inserting data into the database to be stored or when retrieving data from the database.

## **3.5.5 JAVASCRIPT**

It is a high-level interpreted programming language used mostly together with HTML to create interactive and dynamic web pages hence becoming an essential language in developing the system. It is used also in validating user inputs that are to be sent to the server.

## **3.6 Advantages of iterative waterfall model**

* Easy risk management since building and improvement of the system is stepwise hence risks will be identified at earlier stages.
* One can get reliable user feedback for it involves presenting the system’s blueprint to the users
* A working system is generated during the early stages of its lifecycle.
* It is a flexible model for it is less costly to change both its scope and requirements.
* It is easier to test and debug existing errors during a smaller iteration.

## **3.7 Disadvantages of iterative waterfall model**

* Since not all requirements are all gathered for the entire lifecycle of the system, some design issues might arise hence it can be a costly model.
* Since all phases follows a series of sequential steps, no overlapping of phases therefore all its phases are rigid.

## **3.8 When to use iterative waterfall model**

* Used in a situation where the requirements of the complete system are clearly defined and understood.
* Used when mostly the major requirements are first defined since when the progress of the system progresses, other details may evolve

## **3.9 REFERENCE**

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