

Services and Management System for MVSU Career Services Center

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Abstract— Services and management systems are web or Operating system applications used to reduce the problem of functionality inefficiencies of the activities of different departments or institutes. Due to these problems, a Services and Management System was sought to be designed and developed, not just for MVSU Career Services but also for all other institutions that do not have a services and management online system. Therefore, this System created is aimed at creating a career services online platform that helps the students of MVSU, all over the world, to interact with MVSU Career Services Center (CSC). We have been able to build a system that allows the students to complete their CSC registration, request appointments, which could be for mock interviews, resume reviewing and other career related forums or workshops. This site also provides accessible information on internships, co-ops and job opportunities to students, and help track students' career journey in the school. Also, this system will also conduct real-time stats and reports of most career activities attended or participated by the students.

In all, though this system is still being worked on, however, it has increased the efficiency of the operations being done by the MVSU Career Services by a good percentage. It is leading to less paper work and less time taken to perform career related activities.

Index Terms—Operating Systems, Management Systems, Web applications, website, services system, web design, web security, algorithm, encryption, decryption, HTML, PHP, CSS, Web Browsers.

I. INTRODUCTION

Career management systems have been a fundamental aspect of different Career Services all over the world, in both institutions and industries. Institutions use such systems or platforms to drive connections between students, employers, mentors, faculty and alumni while streamlining their career operations[3]. Mississippi Valley State University's Career Services Center, however, do not have an online system that helps with their operations. Presently, all the operations being done in MVSU Career Services are being done on paper. This

has led to a high amount of time taken for students to sign up for programs, too much paper work, and less awareness of the jobs, internships, co-ops made accessible by the Career Services Center. All the problem listed above leads to a less efficient working environment which can be solved by an online management and service system.

II. WHAT IS A MANAGEMENT AND SERVICE SYSTEM?

A management and service system is a system that helps the successful running of functions, activities of an organization. These activities are not limited to registrations, sign-ups, and workshop creation but much more [2]. The functionalities differ from one organization to the other and depend on the activities carried out by the organization. A management and service system allows an organization to efficiently perform its' duties. These duties performed by the system can reduce the amount of time taken to perform the duties, the number of errors that would have occurred if done manually, and finally reduce paper waste [4].

From the definition above, you can come to the conclusion that the Services and Management System for the Mississippi Valley State University Career Services Center is built for such purposes. This system is aimed at creating a career services online platform that helps the students of MVSU to interact with MVSU Career Services Center (CSC). It allows the MVSU CSC to create new events and registration for those events, registration or activity forms, post news, jobs and internship opportunities, and keep records and statistics about all activities. Because the project will be on a server that is accessible on and off campus. The target audience will have access to system anywhere that has internet.

III. SYSTEM DESIGN

In order for us to understand the full use of this system, we will break down all the uses and characteristics of the system in this section of this paper.

A. System Perspective

This is a self-contained product, and not a part of another product. This system is the first of its' kind being developed for the MVSU Career Services Center; therefore, all subsystems will be created.

B. System Software Design

This system consists of numerous features which are in actuality functionalities that help MVSU Career Services Center perform their day to day activities. These features are listed in accordance to their belonging subsystem, thus described in full below:

- *Career Services Registration Subsystem*

This functionality as its name signifies, helps students, staff and people all over the world to register as a career services center user. During the registration the following are requested of the user.

- Full Name
- Email
- Address
- Phone Number
- Major
- Degree
- Professional Goals

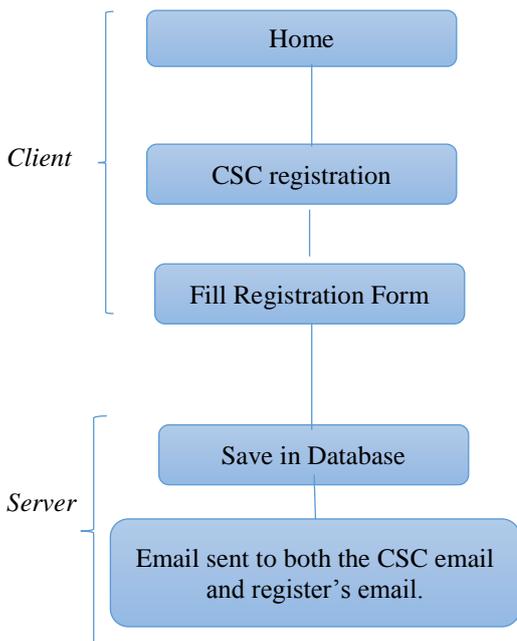


Diagram showing the registration functionality client-server interaction.

In addition to the following, the user is requested to upload their resume and request for an appointment with the Career Services. The registration functionality helps with the easy accessibility of Career Services Center users' information.

- *Login Functionality*

This functionality is a most common functionality of all systems where the user is asked for an information of his or her and the corresponding password. In this system, the user is asked for their email and password and then when logged in they are taken to a page called "Slate". This page shows them coming-up workshops, appointments and interested internships or jobs.

- *Workshops*

This feature is a huge feature for the Career Services Center. This is because the Mississippi Valley State University CSC is known for their numerous workshops. The CSC hosts lots of workshops for both students and staff. Hosting these workshops take a lot of effort on their own end, therefore one of the main reasons for building this system is to assist the CSC with the activities related to hosting workshops in Mississippi Valley State University.

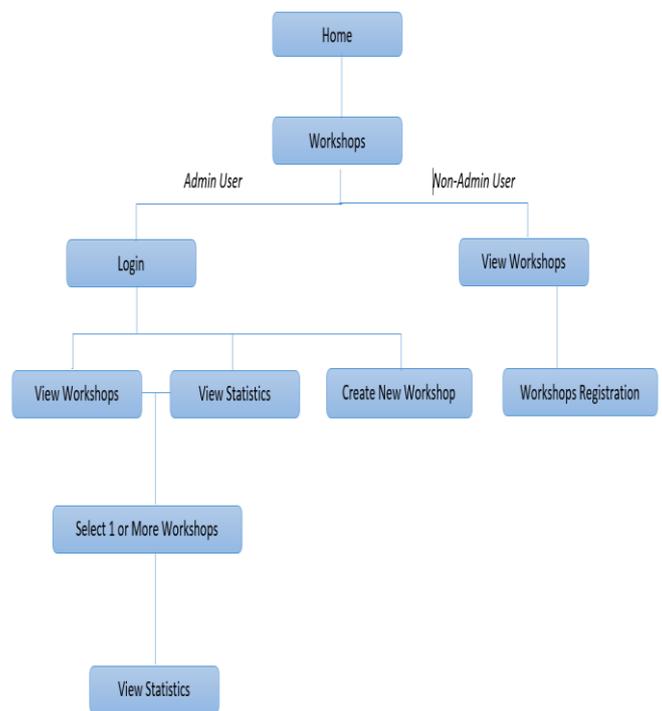


Diagram showing the Workshop sub-system interaction.

The diagram above summarizes the workshop subsystem. As one can see, there are many functionalities under this subsystem. Hence, below are the different functionalities that make up the Workshop sub-system.

- *Create New Workshop*: This functionality enables the administrator, who must be a Career Services Center Personnel, to create a new workshop that they plan to hold in the future. The registration form includes the following:
 - Title
 - Presenter

- Academic Year
- Date of Workshop
- Status: This could be “Not Yet Done”, “Done”, or “cancelled”.
- Category: This consists of (Career Fair, Graduate Fair, Youth Motivation Task Force, Thurgood Marshall College Fund and many more).
- Workshop Description.

When a workshop is created, the system is built in a way that the workshop evaluation and statistics site is automatically generated.

- **View Statistics:** This functionality allows the Career Services Personnel to view the workshop evaluation statistics. This functionality shows the statistics of a workshop using tables and charts. This helps in the easy understanding of how good or bad a workshop was to its audience. The statistics is divided into two major aspects.
 - Demographics: This lets Career Services personnel to know where the attendees are all coming from.
 - Presentation Evaluation: This part of the statistics functionality lets the Career Services personnel know how well a presenter presented the information being talked on and how well the audience understood that information.
- **View Workshops:** This as its name signifies allows both the admin and non-admin to view listed workshops. However, the system decides what kind of workshops are being shown to whom. For instance, an admin is able to search for workshops in all categories (“Not Yet Done”, “Done”, and “Cancelled”), while the non-admin does not have the permissions to do so. Furthermore, the admin also has the ability to delete a workshop. The “view workshop” functionality also has options to search for a particular workshop in a specific category.
- **Evaluate Workshops:** This workshop feature allows the participants of workshops to evaluate the workshop they have just attended. This populates the database and hence. It is used for generating the statistical information viewed on the statistics page.
- **Compare Workshop:** This workshop feature helps the admin user to compare two or more workshops. This is done by a side by side table comparison. Note that this feature is still being worked on.
- **Appointments**

Appointment is another important subsystem of the Career Services Center Services and Management System. This is because in order for anybody to meet a career services

personnel, they have to set up appointment. This can be tedious sometimes, especially for off-campus and non-Mississippi residents/students, as they have to visit the Career Services Center to set up the appointment and still told to come back another day for the appointment.

However, with this subsystem, one is able to request for an appointment and later informed of the day of his or her appointment via email.

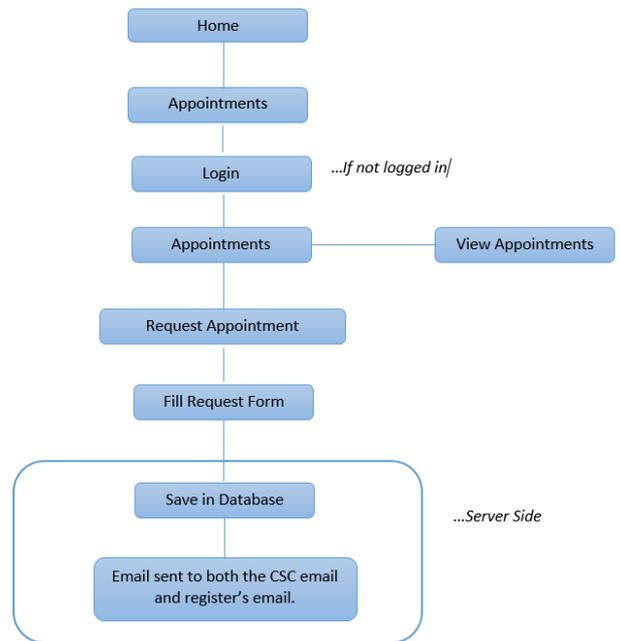


Diagram showing the Appointment subsystem interaction.

The diagram above summarizes the interaction. The different functionalities that make up this system is described below:

- **Request Appointment:** As its name describes, this functionality helps its user to request appointment with the MVSU Career Services Center. The application form includes:
 - Full Name
 - Email
 - Phone Number
 - Reason/Title/Description: This defines the reason for the appointment and have the options: “Resume”, “Jobs/Internships”, “Request Information”, and “Workshops”.

When a request has been made, the system lets the career personnel aware of the request. This is done via email, which is generated on the server side of the system. The personnel then sets the date of the appointment. This date is set after both Career Services and the appointee has come to an agreement of the date. When this is done, another email is sent to the user who requested the appointment to let him know that a date has been set.

- *View Appointment:* This feature allows the users to view their appointments. This feature as some of the others mentioned earlier in this paper has certain permissions for both admin and non-admin. The admin is allowed to view past and present appointments and appointments of more than one user, while, non-admin user has permissions that allow them to see only their past (“Appointment History”) and present appointments. They do not have permissions to delete or update any appointment.

- *Internships*

This feature allows the Career Services Center to save internship and job information to the database and these jobs/internships are displayed on the users’ page.

C. User Classes and Characteristic

The system is accessed by users of two different classes. These classes specify the permissions given to the user. These permissions are what gives access or restricts a user to the system’s functionalities. The user classes are listed and described below:

- *Admin Class*

This class is meant for the Career Services Center Personnel. This class gives its’ users the permissions to make changes to the system, check and edit users information. They also control the information that is put out on the website (view) aspect of this system.

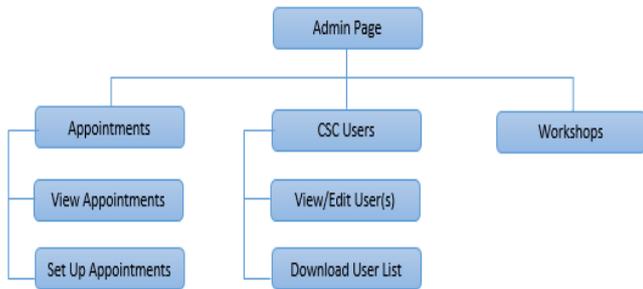


Diagram showing the Admin Class General Permissions in a nut-shell.

- *Non-Admin Class*

This class deals with the students, alumni or MVSU staff that plans to sign up or register for activities made available on the site by the system admin.

The students of this class are able to log in using their school ID and chosen password to see their progress in an activity they have signed up for.

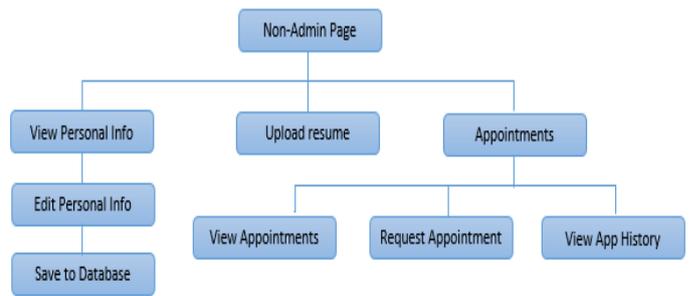


Diagram showing the Non-Admin Class General Permissions

Most of the permissions seen in the above diagrams have been discussed in details in previous sections.

D. Database Design

This system depends on the storage of the data that populates the services and management’s systems web site. Below is the UML diagram that explains the relationship between the different tables that make up the database.

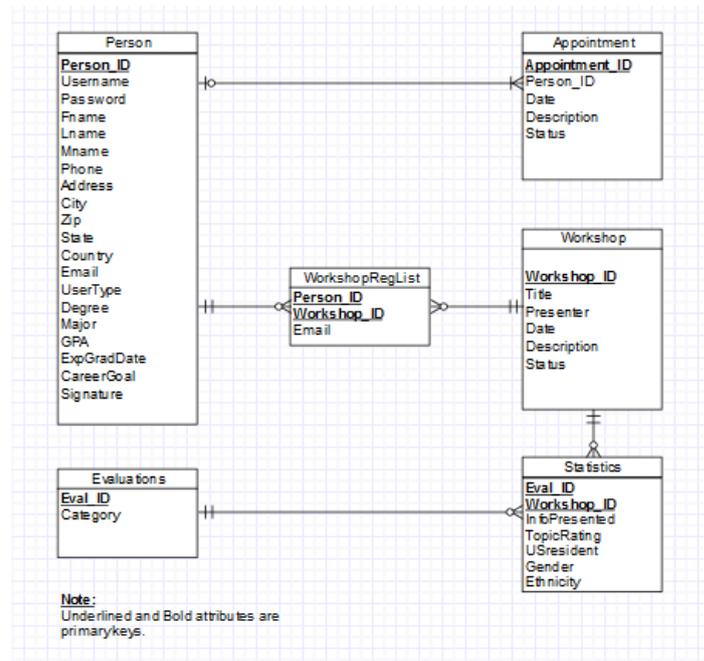


Diagram showing the table to table relationship of the system.

The above table has gone through numerous procedures to be put in the third normalization form. Therefore, there are no redundancies to this database.

IV. IMPLEMENTATIONS

In the last section, we have explained in details how the services and management system works. Thus, in this section we will discuss how it was implemented in the following sub-sections.

A. Views

This system is an online platform, hence, its' success depends on its views, which is also known to be the client side.

- *Hyper Text Markup Language (HTML)*

To implement the views of this system and bring the functionalities to life on the browser. We used html to display the tables, fonts and forms used in this system.

- *Cascading Style Sheet (CSS)*

CSS helped design the style used on the website of the system.

- *Google Charts*

Google charts are used to display the charts for the statistics of the web page of this system.

B. Storage Mechanism

This system would not be fully implemented if the storage mechanism was not implemented.

- *MySQL Database*

This system uses the MySQL database structure to store the information used to populate this system. Database management systems are one of the main systems used in the world today [1]. It is the main aspect of this services and management systems that is being engineered.

- *Hypertext Preprocessor*

This scripting language also known as PHP, is being used to communicate with the database to insert, select, update and perform other database functions.

C. Security

This is an important aspect of this system. Security was of high priority when developing this system. Some majors were taken to reduce the risk of the system being hacked. These majors are described below.

- *SQL Injections*

SQL injections are one of the known issues when dealing with database. This is a code that is used to attack the database, making it malfunction. In order to reduce the risk of this happening we took stride to build an algorithm that prevents such malicious codes.

- *Encryption and Decryption of Important Information*

Though SQL Injections may not pose a threat any longer, we know there are other ways to attack this system. One of the

numerous ways can be done through data theft. If this occurs, users' emails and passwords could be accessed, thus leading to intrusion of unwanted people into the system. In order to prevent this we used certain encryption and decryption algorithms to encrypt and decrypt the password.

V. FUTURE WORK

Presently, a lot has been put into this system. However, a lot still remains to be done. Internships subsystem has not been fully developed, thus would still be worked on. Also, the security aspect of the system still needs more work. This is as there are still many ways in which the system can be breached. Therefore, more research is being done to prepare the system for worst case scenarios.

In accordance, as more work is being done, this document would be updated.

VI. ACKNOWLEDGEMENT

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VII. REFERENCES

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