

**METROPOLITAN STATE UNIVERSITY**

**BACHELOR OF SCIENCE IN COMPUTER SCIENCE**

**FINAL YEAR PROJECT REPORT**

**HOTEL TRACKING SYSTEM**

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**December 2019**

“I hereby declare that I have read this project report and in my opinion this report is sufficient in terms of scope and quality for the award of the degree of Bachelor of Science in Computer Science

Signature : ....................................................

Supervisor :

Date :

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**Hotel Tracking System**

**STUDENT NAMES:**

ELVIR RECIK

RILEY SCOTT

ABDALLA OSMAN

A report submitted in partial fulfillment of the requirements for the award of the Bachelor of Science in “Computer Science and Computer Information Technology” Major taken

**College of Science,**

**Computer Science and Cybersecurity**

**December 2019**

**DECLARATION**

I declare that this thesis entitled Hotel Tracking System is the result of my/our own research except as cited in the references. The report has not been accepted for any degree and is not concurrently submitted in candidature of any other degree.

Signature : ....................................................

Name : Elvir Recik, Riley Scott, Abdalla Osman

Date : 12/03/19**ACKNOWLEDGEMENT**

We want to express our special thanks of gratitude to the people who made it possible to complete this project.

We consider ourselves privileged to express gratitude and respect towards all those who guide us through the completion of this project. We would like to express our great appreciation to Dr. Ismail Bile Hassan for his valuable and constructive suggestions during the planning and development of this research work. His willingness to give his time so generously has been very much appreciated.

Last but not least, we thank each other for all the hard work we did in order to complete this project successfully.

**ABSTRACT**

In this project a hotel tracking system is designed and implemented for a business. The system allows employees and management to work from the same cleaning schedule. The goal of the project was to create a scheduling system that allowed management to create cleaning schedules. Which in turn would allow employees to view their schedules on the go.

The project

The project requirements study collected information about what the users need, how other systems had solved similar problems and what the issues with the existing systems that some companies use. A prototype was created from the requirements and evaluated with teacher.

The refined prototype implemented as a web application. The final system was also evaluated by our professor and refined based on feedback.

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**LIST OF ABBREVIATIONS**

|  |  |  |
| --- | --- | --- |
| **NO** | **HMS** | **Hotel Management System** |

1. **INTRODUCTION**

This project is for senior students of Bachelor of Science in Computer Science by Scott, Elvir, and Abdalla. The project is done for Metropolitan State University Instructor Dr. Ismail Bile Hassan. The goal of the project was to create a cleaning schedule for a hotel’s management and its employees. This schedule management system is made for hotel owners and management who are looking for a stable system that will automate their scheduling process. The Hotel Management System (HMS) is a web application that will provide an automated method to track which employees are working and which rooms they will be cleaning.

This system removes management’s responsibility of keeping track of which rooms employees should be cleaning at all times. HMS will keep a record of employees working and will assign them a cleaning schedules as rooms become available. It will allow employees to login and check their assignments. HMS will allow management to change assignments incase an employee is out. Management will be able to create, modify and delete accounts for their employees. HMS can be used mainly by Hotels but it can also be used by any large corporation to create an efficient janitorial team

1. **VISION AND BUSINESS CASE AND SCOPE**
   1. **VISION**

To provide an easy to use application that can help hotels manage their cleaning schedules. Our application will help eliminate the use of paper to track the cleaning schedules and allow the office management the ability to update that information seamlessly.

* 1. **BUSINESS CASE**

In the hospitality industry, significant man-hours are spent inefficiently in the related tasks of booking and room-keeping. Rather than requiring an employee for the task of recording the status of rooms and their associated ledgers, an alternative is being sought in using computers to do the same.

This software will reduce operational costs in two ways - housekeeping will receive reports on which rooms need to be serviced, rather than visiting every room in a route. This will reduce the amount of labor required to maintain the rooms. Secondly, this software will use a database to record information and produce reports, reducing the chance for employee user error as well as the amount of time required to process booking and payment status.

* 1. **SCOPE**

A three-tier web application that will allow Management to create and modify cleaning schedules for a hotel. The employee's check the schedules to see their assignments

1. **FEASIBILITY STUDIES**

* 1. **TOPIC 1**

This program will be designed using the Agile framework, and will incorporate client input at each iteration of the project.

This project will use established languages and methods to create a 3-tier application with a user frontend, a software backend, and a data store through the XAMPP platform.

The code lifecycle will last for several iterations each roughly two weeks long, allowing for gradual and incremental specification and development.

* 1. **Proposed system functionalities**

Mainly, our project is designed to avoid paper schedule sheets and eliminate wasted time transferring schedule sheets to the appropriate employees. The system is a time saver which could be accessed from anywhere and any device to view schedules. Also, it creates a stable and accurate data.

* 1. **Problem Statement**

The problems this project intends to solve is that the cleaning scheduling system for employees and management is outdated and unreliable. Management is having to create and modify schedules as rooms become available. The current process is taking a lot of time away from management. Managers need to be performing many other important duties during work hours.

* 1. **Goals**

The goal of this project is to designed and build a stable system that avoids all the problems stated in the problem statement above. Our team will create and design an app will save both management and employees a lot of time. For our team to accomplish this goal we need to know where our user’s time is most spent on. After user input is collected we will build a prototype that will be evaluated by the users.

* 1. **Requirement Study**

The goal of requirements study was to find out how the system should be designed. This study gave us a chance to analyze what the needs of managements is compared to employees. This study allowed us to see how much time could be saved for management by implementing this program.

1. **METHODOLOGY**

The Section below describes the Activity diagram for the login process for both employees and management. It shows couple different activity diagrams performed while using the system.

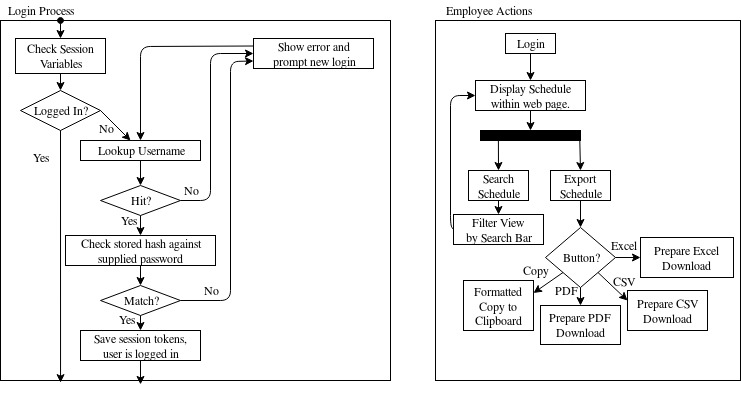


FIGURE 1.0 Login Process for HMS

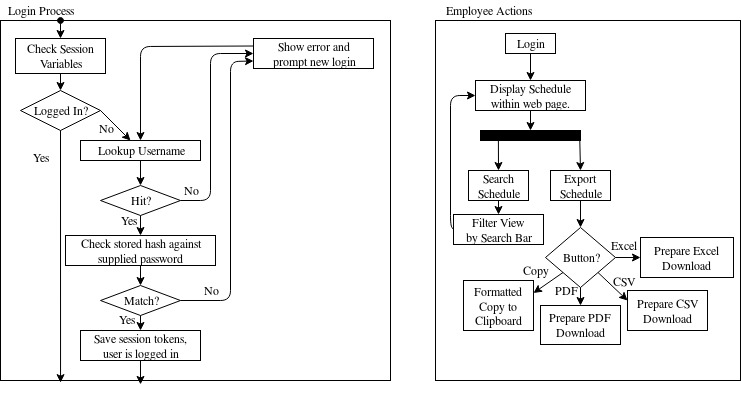


FIGURE 1.1 Schedule Searching Activity

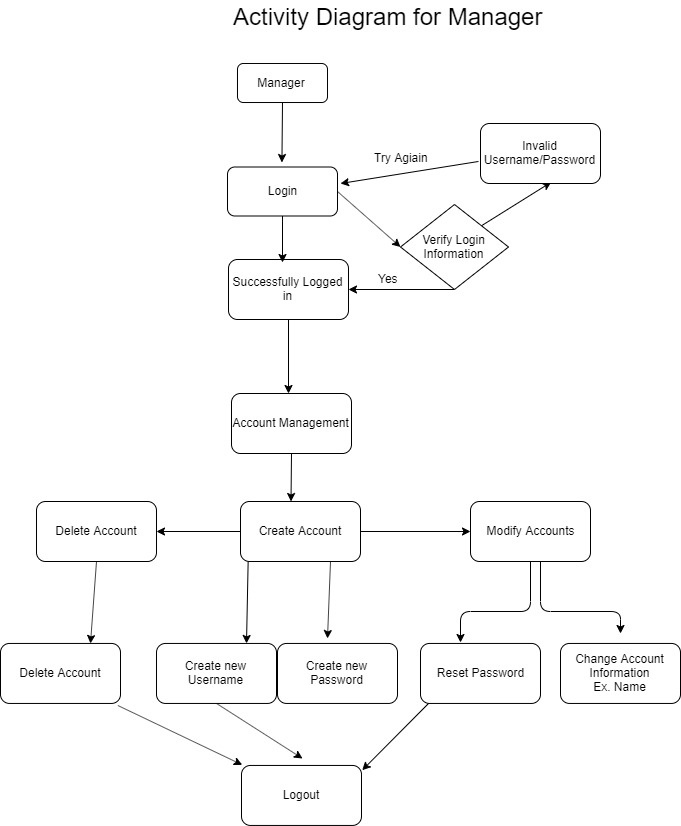


FIGURE 1.2 Management Account Creation Activity

* 1. **Requirements**

Requirements for HMS system include:

* Users can login from any device they have.
* New users can sign up at the login screen
* Username must be an email.
* Management can create, delete and modify schedule at any time
* Employees can search and sort by their names
* The System will export to different types of file formats
  1. **Prototype**

The prototype of the HMS system was created by following the requirements were gathered from the shareholders. In the next several sections you will see screenshots of the prototype. The first screenshot from the prototype shows the employees home page. It shows the schedule, the search bar and the logout button.

IINSERT THE EMPLOYEE HOME PAGE AFTER LOGIN

1. **SYSTEM DESIGN**
   1. **USE CASE DIAGRAM**
      1. **SYSTEM ADMIN USER**

**USE CASE DIAGRAM ADMIN USER**

Figure 5.1: Use case Diagram for admin

Figure 5.1.1: Use case Diagram for Managers

The diagram above shows the use case for the admin user

Managers will produce schedules for their employees. They will be able to create, delete and modify schedules. They will be assigning employees to specific rooms based on the availability of the room and the availability of the employee. Management will be will have the power to manage accounts. They will be able to create, modify, and delete accounts.

* + 1. **SYSTEM EMPLOYEE USER**

**USE CASE DIAGRAM Employee USER**

Figure 5.1.2: Use case Diagram for Employee

Employees will be assigned rooms depending on their work shifts. Employees will be able to login and logout of their account. Employees will be allowed to sort the schedule by name and export their schedules into pdf format.

Figure 5.3: Use case Diagram for admin

* 1. **SEQUENCE DIAGRAM**
     + 1. **SEQUENCE DIAGRAM FOR MANAGEMENT USER**

**MANAGER Sequence Diagram**

* + - 1. **SEQUENCE DIAGRAM FOR EMPLOYEE USER**

Employee Sequence Diagram

* 1. **INTERFACE DESIGN**
     + 1. **INTERFACE DESIGN**

**Design of the Website**

* + - 1. **SYSTEM MANAGMENT USER**

**Home Page of Management**

* + - 1. **SYSTEM EMPLOYEE USER**

**HOME PAGE OF EMPLOYEE**

1. **DATABASE**
   * 1. **CLASS DIAGRAM**

**Diagram of the Database Class**

1. **PROJECT SYSTEM**

* 1. **SYSTEM FUNCTIONALITY**

DRYJDKYTDYKDK DYJYDSTIRHJ VB HBMYYJ TJO HT’TJS’;THJ SRTHJT’JH’S SRTHJST’HJS’HT’HJS GHJH CYTIHJS’ IHOJS’HIJ SRH’SIJH SJHTHJSOHJSTIOH H U HTH STOHSOTH TIH STSHTOI

* + - **TYJYJDYTJJDYJDYJD**

DRTJDRTJ YTJSD6J SYRJ SJTJ S JSJJJJSJSTR SJ RJSJJ S TRJSJSTR HS5

* + - **TFYTJDJDYJDYJDJDYJD**

DRTJDRTJ YTJSD6J SYRJ SJTJ S JSJJJJSJSTR SJ RJSJJ S TRJSJSTR HS5

* + - **HDJYTJJYJDRTDJDYJDYU**

DRTJDRTJ YTJSD6J SYRJ SJTJ S JSJJJJSJSTR SJ RJSJJ S TRJSJSTR HS5

* + - **YTKDYKDYKJDYKYJD**

DRTJDRTJ YTJSD6J SYRJ SJTJ S JSJJJJSJSTR SJ RJSJJ S TRJSJSTR HS5

* + - **TYKYYKDYTDDYDY**

DRTJDRTJ YTJSD6J SYRJ SJTJ S JSJJJJSJSTR SJ RJSJJ S TRJSJSTR HS5

* 1. **SYSTEM REQUIREMENT**

* + 1. **SOFTWARE REQUIREMENT**
    - This software will be constructed from several platform-agnostic scripting languages, including
      * PHP
      * JavaScript
      * CSS and HTML
      * Python
      * XAMPP
    - This software will run on Linux, Windows, and Android platforms.

* + 1. **HARDWARE REQUIREMENT**
    - This software will run on x86 and x86\_64 personal computers, for ease of deployment in hotels and motels.

* 1. **SYSTEM IMPLEMENTATION**

* + 1. **SYSTEM EMPLOYEE MANAGER**

HOME PAGE FOR MANAGER

* + 1. **SYSTEM EMPLOYEE USER**

HOME PAGE FOR Employee

* + - 1. **LOGIN PAGE**

PRINT SCREEN INTERFACE

* + - 1. **SIGN UP PAGE**

PRINT SCREEN INTERFACE

* + - 1. **SORTED BY NAME PAGE**

PRINT SCREEN INTERFACE

* + - 1. **EXPORTED PAGE**

PRINT SCREEN INTERFACE

1. **SYSTEM LIMITATION**

* The system cannot diagnose productivity issues.
* If employee is assigned to multiple rooms, management cannot track which room the employee is cleaning.

1. **SYSTEM FUTURE ENHANCEMENT**

The web app can be modified for any future use. It’s flexible and easy to maintain for any new growing business. The database should be able to handle new and existing data; it should also be able to work with large amounts of rotating data.

1. **PROJECT SCHEDULING**
   1. **SCHEDULING TASKS DURATION**

|  |  |
| --- | --- |
| **Tasks** | **Duration** |
| Use Case | Create use cases, requirements and understanding expectations. |
| Proposal | Updates to project description. Updates to mission, scope, requirements. First demo diagrams |
| Diagrams | Create Class Diagrams  Activity Diagrams  Sequence Diagrams |

Table 2.0: Tasks duration

* 1. **PROJECT TIMELINE**
* Planning to develop a web application:
  + Requirements and Design documents
  + Detailed Requirements.
* Testing:
  + Test plans
  + Test Documentation
* End User Documentation:
  + System Documentation,
  + Class Diagrams,
  + Activities Diagrams,
  + Sequence Diagrams,
  + Coding
* Submit Final Project
  + Final project
  + Final report

1. **CONCLUSION**

The overall goal of the project was to build a web application that can help Hotel employees with managing rooms Schedules. Throughout the project, many different challenges came up in each iteration. We faced obstacles with writing code, setting up XAMPP and creating the diagrams for our project. We were able to manage the issues that came up, some of the issues were fixed by creating the diagrams. The diagrams allowed us to see how the software would be function. In the end we were able to build a prototype that met all the requirements we were presented with. The system was implemented as a web app and submitted to Instructor Dr. Ismail Bile Hassan for further evaluation and feedback.

1. **REFERENCES**

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Pressman, R. S. (2999). Software engineering: A practitioners approach. Boston, MA: McGraw Hill.

Draw IO

W3schools css formating

1. **APPENDIX 1**

Include the Program Code here.

GANTT CHART