Temasek Polytechnic

School of Informatics and IT

**Diploma in Technology (IT)**

Terms of Reference

**Project Particulars**

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| **Tutor** | Qi YUTAO |
| **Class** | P05 |
| **Project Title** | Hotel Management System |

**Project Team’s Particulars**

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| --- | --- |
| **Matric Number** | **Student Name** |
| **1706213D** | **Chia Rui Feng** |
| **1703879E** | **Chang Won Kit** |
| **0716+47** | **Tay Zhun Hang** |
| **1705022J** | **Viswanadham Udaya Chitanya Krishna** |

**1. Introduction**

Our group of four currently working under the Pantheon Systems company as part of Student Internships Programme, has been assigned a project to create a Hotel Management System for Delonix Regia.

**2. Objectives of the Project(Need to mention how many modules)**

Our aim is to develop a Hotel Management System that is able to automate some of the functions of the hotel, this can relief some of the jobs that are routinely done and allow staff to focus on the more advanced parts of the job. The jobs currently that can be automated, such as room delegation and even customer service on a general level can be left to automation.

In Here we are trying to obtain a detail solution for Mr. and Mrs. Wang’s problem facing with the current Hotel Management System for their Business. We will develop the system that has Good Design, Functionality, Reliable, Consistency and Durable which combines Advanced Quality Software in a simplified Version. (krish)

Inside the Hotel Management System will contain four modules with each module performing a critical task which makes up the Hotel Management System. (Rui Feng)

The first module will be a analytical module which mainly gathers data from other databases and creates graphs for easy understanding. (Rui Fang)

The second module is a database that holds all the information regarding the staff. Examples will be the staff’s personal information, the working hours, work allocation, etc.(Zhun Hang).

The third module will be a local area recommendation system that provide suggestions of things to do near the hotel. There will be an automated check-in system deployed into a kiosk.(Won Kit)

The fourth module will be a cloud service that helps in reduce cost of IT and infrastructure for the hotel. Its a popular feature that should include in any developing software.(krish)

All the modules will be explained in greater details under the scope of project.

**3. Scope of the Project**

The scope of the project will have four main modules.

**Analytics Module**

The first module we’re suggesting is a analytics module built into the software. It’s main functions is to gather information from other databases such as Booking Database and Customer Database. Information like booking dates are collated to display in graphs for easy and fast understanding.(Rui Feng)

**Staff Database Module**

THe second module is a database that holds all the information regarding the staff. Examples will be the staff’s personal information, the working hours, work allocation, etc. With this database, the services provided by the staffs will be more efficient and accurate because they will know what they are supposed to do during their working hours. (Zhun Hang)

**Local Area Recommendation Module**

The third module will be a local area recommendation system in which the area near the hotel will be recommended places to visit, eat and sightsee based on the preferences of the customer. Recommendations will be suggested daily on the Smart TV allocated in every room, customers can navigate through using the remote controller. During the check-in process the customer has a choice whether to use the system or not. There will be a automated check-in system that will automate the customer service at the front desk. Checking-in , check-out and booking will be done at this kiosk which will be present at the service counter. This makes it easier to manage customers and less staff are needed to man the customer service desk. (WonKit)

**Cloud computing module**

The fourth module we develop is the “Cloud” computing that gives an experience to communicate with the server through a browser rather than physically to access the system. Cloud helps us many advanced features such as Disaster Recovery and Automatic updates so on. It helps reduce Infrastructure for the hotel and cost of IT and it requires Dedicated Infrastructure with additional power and Maintenance.(krish)

**4. Distribution of Workload**

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| --- | --- |
| **Objectives/Deliverables** | **Members** |
| Introduction | Chia Rui Feng |
| Objectives | Everyone |
| Scope of project | Everyone |
| Scope of Project - Analytics Module | Chia Rui Feng |
| Scope of Project - Staff Database Module | Tay Zhun Hang |
| Scope of Project - Local Area Recommendation Module | Chang Won Kit |
| Scope of Project - Cloud computing Module | Udaya Krishna |
| Constraints | Everyone |
| Resources | Everyone |
| Product Positioning | Zhun Hang  Won Kit  Rui Feng |
| Approach and Methodology | Zhun Hang  Won Kit  Rui Feng |

**5. Constraints**

This is our first major project since entering Student Internship Programme and thus we are unfamiliar with our working environments, therefore our Project may take a longer time for kickstart our project while we familiarise ourselves. A prototype will therefore take a longer time before it can be delivered.(Rui Feng)

There is a constraint on the time we have to implement the creation of the software. We only have 17 weeks to complete the development and implementation of the software therefore the features may not be utilizing the full potential of the software. However they will be operational and is adequate for usage. (Won kit)

Another constraint for the project is the risk of having a scope creep. A scope creep refers to the incremental expansion of the scope of the project, which may include more requirements that was not part of the initial plan. If [scope creep](https://resources.workfront.com/project-management-blog/best-practices-for-scope-management?proxy=/blog/) happens on the project, it may result in increased time, resources, and potentially reduced quality. And thus increased risk on delivery. (Zhun Hang)

We have 17 weeks for us to finish the project but sometimes fixing the bugs as well as beta testing may take a long time that may extend the submission date.Most of the time developers and IT Professionals works in groups for develop a software that go through the process of Designing, Perform Functions, Bug tests many more. In that case we were lacking of manpower for our project to finish Completely. (krish)

**6. Resources**

**Software:**

GitHub and stack overflow

Windows or Linux

Database tool MySql or PostGreSql

Integrated development environment(IDE)

* Microsoft Visual Studio

Software testing tools

* Selenium

Microsoft 365

Microsoft database

**Hardware:**

Laptops

Chargers

10 TB of storage for the Internal server

WiFi router and modem

**7. Product Positioning in the Market/Company**

Describe how your product differentiates itself from similar products in the market. Describe any interesting or unique features that your product has.

Comparing our Hotel Management system to others on the market:

CloudBeds:

CloudBeds is a all in one Hotel Management System comprising of many different features such as Property management, guest management, payments, api+app store and customer relationship management which is used to improve customer relations. The most eye catching feature is the Channel Management feature which helps to advertise the hotel itself onto many marketing channels like airbnb and Expedia.

However, this all in one Hotel Management System which includes many features come at a heavy price of approximately 200 SGD per month which could eat into the profits.

(Rui Feng)

iRoomi:

iRoomi is a versatile Hotel Management System that have many features like Channel Manager and the Virtual Card Process. The Virtual Card Process is the most important feature of this software that accepts and process virtual cards from Booking.com and Agoda so you get paid upfront, without the hassle of collecting cash on check-in.

However, iRoomi costs at the cost of approximately 470 SGD per month. This will cost a lot of income and the company will have lesser revenue. (Zhun Hang)

Our Hotel Management System will strive to have the most user friendly UI, it has a minimalistic design with a clean and neat colour scheme. Buttons and options are clearly stated, and there are specific sections for different services. Compared to the other two Hotel management systems, the simplicity of our software gives the users the ease of navigation, making our UI one of the most user-friendly on the marketplace. Also, the Hotel management systems above require a monthly payment, which makes it expensive to use in the long run. Compared to our software which will only require a lump sum one time payment. (Won Kit)

However, what makes our software unique, as users reside in the hotel, the software will suggest to them places nearby the hotel to eat, sightsee and relax depending on their preferences which will be asked in an electronic form during check-in. This allows the customer to appreciate and explore the area he/she resides in according to their taste. The smart TV in every room gives us the capability to follow up on questions and suggestions for users that uses this service. This service would extend to everyday of the customer’s residence until he/she checks out. Daily suggestions and references will be recommended through the customer’s email and the smart TV. (Won Kit)

Compared to the other two software's most outstanding functions, our software's unique function encourages customer retention in which customers would have a better experience during their stay, and they may return back to the hotel in the future to further their experience, thus increasing customer base and trust which in turn increases revenue. (Won Kit)

**8. Approach and Methodology of the Project**

We will be using the Incremental Model as our software development life cycle. We will first split the entire project into many parts. Initially, we will create a prototype with assumptions of what will be required in the Hotel Management System which will be shown to Mr and Mrs. Wang for their feedback. We will then first develop the Booking Database as it is the first part of the main function of the software. We will then develop the Advance Customer Database. After developing those two database, we will start to work on electronic form as our unique feature to sum it up as an entire project. (Zhun Hang)

Our approach is simple, ‘Make easy, use easy’. We will emphasize on the simplicity of the software structure and allow for easy customization for the future expansion of the software. Therefore we aim to implement a microservice architecture for the software. All four modules stated above in the scope will be developed and deployed separately, and loosely coupled. Not only will this lower the chances of bugs while in the coding and testing stages, but it will also increase productivity of the software as a whole. (Won Kit)

On the point of ‘use easy’, the GUI being developed for the different modules will be streamlined, whether it is the check-in kiosk interface or the Analytics interface, they will use the same GUI. Other than this allowing us to save time and focus on other aspects, we aim for minimum complexity, this will be easy to use, easy to operate. (Won Kit)

The first risk we might encounter is unforseen bugs that went through the cracks and into the final version of the software that is only detected after the project is completed. This risk can either be a small inconvenience or cause the software to be unusable and therefore measures should be implemented to overcome them, such as developer testing as well as third party automated software testing. (Rui Feng)

The second risk we might encounter is we may not be able to finish the project on time due to time constraints. This risk may lead to the lost of company money due to compensations made depending on the contract. Additionally, we may cause our company credibility and reputation to become blacklisted in the IT industry. To overcome this risk, we will need to follow the gantt chart and complete it on time. (Zhun Hang)

Another risk we may encounter is the is the risk of having a scope creep. A scope creep refers to the change in the scope of the project. If [scope creep](https://resources.workfront.com/project-management-blog/best-practices-for-scope-management?proxy=/blog/) happens on the project, it may result in increased time, resources, and potentially reduced quality. And thus increased risk on delivery. (Zhun Hang)