**Temasek Polytechnic**

**School of Informatics and IT**

**Diploma in Information Technology (IT)**

Project Plan

**Project Particulars**

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| --- | --- |
| **Tutor** | Mr Mel Goh |
| **Class** | P01 |
| **Project Title** | Delonix Regia Hotel Management System |

**Project Team’s Particulars**

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| --- | --- |
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**Revision History**

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| --- | --- | --- | --- |
| **Date** | **Version** | **Description** | **Author** |
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**Table of Contents**

1. Introduction
   1. Objectives and scope of the project
   2. Assumptions and constraints
   3. Definitions and acronyms
2. Roles and responsibilities
3. Estimates and project schedule
   1. Work breakdown structure
   2. Project schedule
   3. Budget summary
4. Risk management plan

**Project Plan**

**1 Introduction**

**1.1 Objectives and scope of the project**

*[Describe the objectives of the project and the list of features that will be developed (the scope). Give brief descriptions of what deliverables the project is expected to deliver at the end of the project]*

Objectives:

* Allow better and more efficient processes such as Checking-in and Checking-out.
* Improved customer-staff communication
* Moving the hotel to a more IT like environment.
* Creating more innovation
* Increase revenue and business for the hotel

Features:

* Online booking.
* Edit booking dates.
* Cancelling room booking
* Check booking of facilities available in the hotel
* Live customer support (Messenger or Video Chat)
* Checking in online / Checkout online

**1.2 Assumptions and constraints**

*[Any assumptions underlying the project are stated here, together with constraints such as the delivery date, hardware/software availability etc. that will affect project management]*

Assumptions:

* Assume that the hotel’s hardware and software are outdated.
* Assume that the hotel website has a lack of functionality
* Assume that the hotel does not have any advertising of its brand
* Assume that the check-in process takes a lot of steps to complete.
* Assume that there is no booking of hotel facilities online
* Assume that users are unable to update their booking information online.
* Assume that Mr. Wang has enough budget to sponsor us the resources we need.

Constraints:

* Hardware might be out of stock.
* Delivery of hardware’s might take some time.
* Software bug
* Unable to understand the server configuration.
* Lack of knowledge in coding to implement advanced features such as live chat support

**1.3 Definitions and acronyms**

*[This ensures that the project plan is understood the same way by everyone]*

* F&B: Food and Beverage
* Peak Period: Holiday season
* Occupancy Rate: The percentage of total number of available sleeping rooms occupied. Derived by dividing the total number of rooms occupied during a given time (night, week, year) by the total number of rooms available for occupancy during the same period.
* Service Charge: A mandatory and automatic amount added to room service and other services such as food & beverage charges used to defray the cost of labor, such as housemen, servers, technicians, etc. and which the facility receives a portion of the charge. In return, the guest is relieved the responsibility of tipping.
* Peak Period: Time of the day or season during which the hotel’s business and amount of customer is at its highest, usually during June, November, and December.
* ROM: Registry of Marriages, the institution that officially and legally recognizes your gesture of tying the knot. Used when the function room is booked for a wedding or the registration of marriages.
* NETS: Network for Electronic Transfers: The Debit scheme that Singaporeans use with their credit/ debit cards.
* Hotel class – (Luxury, upper upscale, upscale, upper midscale, midscale, economy) Class is an industry categorization which includes chain-affiliated and independent hotels. The class for a chain-affiliated hotel is the same as its chain scale. An independent hotel is assigned a class based on its ADR, relative to that of the chain hotels in its geographic proximity.
* SDLC: Software Development Life Cycle, a process for 5 phases, namely Requirements engineering, Analysis & Design, Implementation, Testing, and Deployment.

**2 Roles and responsibilities**

*[Every team member is responsible for the analysis, design, implementation and testing of some features of the system. Describe who is responsible for which features. A particular feature can have more than one member responsible for it]*

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| --- | --- |
| **Name** | **Roles and responsibilities** |
| Muhammad Faiz | Roles: Project Manager, Software Engineer  Responsibilities: Online booking, Live customer support, Edit booking dates, User Interface |
| Ang Wei Xiang | Roles: Network Administrator, Software Engineer  Responsibilities: Online booking, Live customer support, Cancelling room booking, User Interface. |
| Darren Teo | Roles: Purchase Manager, Software Engineer  Responsibilities: Online booking, Live customer support, Check booking of facilities, Database Design. |
| Thien Yun Kai | Roles: Database Administrator, Software Engineer  Responsibilities: Online booking, Live customer support, Checking in/out online, Site Interface, Database Design. |

**3 Estimates and project schedule**

**3.1 Work breakdown structure**

*[The work breakdown structure is a list of tasks that, if completed, will produce the final product. In general, any project can be broken down into 10-20 tasks. Organize the tasks based on phases and/or iterations. Break a large task into several sub-tasks if necessary. For each task, estimate the effort required in terms of days and decide who will be responsible for the completion of the task. Identify all major milestones and important release points]*

1. Inception Phase Iter 1
   1. Complete Terms of Reference
      1. Find the objectives of the product
      2. Find Scope of the product
      3. Distribution of workload
      4. Find the Constraints
      5. Product positioning in the market/company
      6. Approach and methodology of the product
   2. Complete Project Plan
      1. Introduction
         1. Objectives and scope of the project
         2. Assumptions and constraints
         3. Definitions and acronyms
      2. Roles and responsibility
      3. Estimates and project schedule
         1. Work breakdown structure
         2. Project schedule
         3. Budget Summary
      4. Risk Management Plan
   3. Create initial use case & domain model
      1. Identify actor and use cases
      2. Write out use cases (flow of event, description, actors)
      3. Identify candidate classes
      4. Draw the domain model
      5. Draw sequence diagram
      6. Create View Of Participating Classes (VOPC)
      7. Design database
   4. Lifecycle Objectives Milestone
2. Elaboration Phase Iter 1
   1. Complete SRS
   2. Design Software Architecture
   3. Conduct logical database design
   4. Prototype user interface
   5. Retrieve Resources
3. Construction Phase Iter 1
   1. Develop phase 1 of website (Main Functions)
      1. Develop booking of rooms function
      2. Develop checking-in and checking-out function
   2. Conduct user/client validation
   3. Retrieve feedback
   4. Develop improvements to phase 1
4. Construction Phase Iter 2
   1. Develop phase 2 of website (Main Functions)
      1. Develop User Update function
      2. Develop Room Update function
      3. Develop Live Chat function
   2. Conduct user/client validation
   3. Retrieve feedback
   4. Develop improvements to phase 2
5. Construction Phase Iter 3
   1. Develop phase 3 of website (Sub Functions)
      1. Develop Booking facilities function
   2. Conduct user/client validation
   3. Retrieve feedback
   4. Develop improvements to phase 3
6. Transition Phase Iter 1
   1. Discuss on final prototypes specifications
   2. Confirm on website specifications
   3. Deploy the website to public
   4. Conduct survey on website
   5. Obtain survey results

**3.2 Project Schedule**

*[Use Microsoft Project 2003 to draw a detailed schedule, showing target dates for completion of iterations and phases, release points, demos and other milestones. It should also show the dependencies between activities, the estimated time required to reach each milestone and the allocation of people to activities]*

**3.3 Budget Summary**

*[Give a summary of the estimated budget required to complete the project. Compute 1) manpower costs – based on the monthly salary of a typical software engineer and the duration of the project; 2) hardware costs e.g. PCs/servers, printers, scanners etc; 3) software costs e.g. microsoft visual studio, rational functional tester, microsoft project, macromedia dreamweaver etc]*

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| --- | --- |
| **Salary** | **Amount** |
| Average monthly salary of software engineer | $49,873/12 = $4156. |
| Total cost of pay for 3 software engineers | 3 \* ($4156 x 2) = $24936 |
| Average monthly salary of Project Manager, Software Development | $6999.58 |
| Total cost of pay for 1 Project Manager | $6999.58 x 2 = $13999.16 |

Duration of project = 8 weeks/ 2 months

The constitution budget for the salaries of the software engineers will be approximately 60% of the total budget for the employees. The remaining constitution of budget for the salary of the project manager will be the remaining 40%. This amount is being paid for the services rendered by both the software managers and project managers in order to ensure the development and success of the project.

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| **Hardware** | **Amount** |
| 1 Printer -Brother HL-S7000DN | $UK 2193.6 - $SGD 4000.52 approx. |
| 4 Desktops - Z240 SFF Workstation | $US 927.44 - $SGD 1303.71 approx.  1303.71 x 4 = $SGD 5214.84 approx. |

The constitution budget for the printer will be approximately 35% of the total budget for the hardware. The remaining constitution of budget for the hardware of the desktop will be the remaining 65%. This amount is being paid for the equipment in for the receptionist for them to have a better equipment to process information faster.

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| --- | --- |
| **Software** | **Amount** |
| Microsoft Office 365 Business Premium | USD 12.50 user/month (annual commitment) |
| Visual Studio Professional 2017 | $762.00 |
| Microsoft Project Standard 2016 | $909.00 |
| “tawk.to”/Discord | Free of Charge |
| Adobe PhotoShop CC and Adobe Lightroom | $10 monthly ($120 per year) |
| Google Cloud Store: 1- 10 TB cloud storage data | $0.09/GB/Mth X 5000GB = $450/Mth |

The purpose of purchasing these software’s would be to assist in creating and planning of this website and its processes. Software’s such as Microsoft Office 365 and Microsoft Project Standard are being used for the planning of the website. Coding implementations would be done via the Visual Studio Professional; this will be assisted with the Adobe Photoshop and Lightroom to help with the designing of pictures. The Google Cloud Storage is being used to store information such as customer booking information and hotel administrative information’s. The Discord/” tawk.to” will assist us for our live chat support if ours own live chat system fails to be implemented.

Contingency budget: $10,000

The reason for setting aside $10,000 is due a backup amount in case of unforeseen circumstances. This amount can be used to purchase other software’s that might be suddenly needed or even hire external programmers to help out with configurations of unfamiliar software’s.

Total: $415 + 6999.58 + 4000.52 + 5214.84 + 25 + 762 + 909 + 20 + 900 + 10000 = $29,245.94

As a summary, this total cost might be enough to help with the development of the website and also improve the hotel with better IT infrastructure. Without any of the resources, it will be tough to make this project a success, thus every element for the resources is important and useful.

**4 Risk Management Plan**

*[Describe possible project risks, the likelihood of these risks arising and the risk reduction strategies that are proposed]*

The risks involved are :

Project Risks:

* Not finishing according to schedule due to the development model we using because customer might propose more improvements to the features which will cause more delays.
  + Strategies: To avoid this, we will recommend the customer to prioritize the important features.
* The receptionist might not be familiar with the new system.
  + Strategies: To avoid this we will provide manual on how to use the new system.
* The funding from Mr. Wang for the project might not be enough to cover for the expenses.
  + Strategies: To avoid this issue we could choose a cheaper alternative of resources, (Hardware - cheaper desktops)

Technical Risks:

* User might not be familiar with the new interface for the website and .
  + Strategies: To avoid this issue, there will be guides and step-by-step methods on doing certain features for the user to get used to it.
* Implementing the Live Chat might require a lot of time to implement it as the team is new to it.
  + Strategies: We would use discord as an alternative if the implementation of live chat fails. However, it requires customers to have the software installed on their devices.
* Functionalities such as online checking in and checking out would be time consuming to do as it requires a lot of configuration between databases (users and rooms) and also allowing the users to understand how the function works.
  + Strategies: Request more focus for the team members on implementing the functionality
* There might occur issues with the system, such as overloading it due to many users making use of the Live Chat.
  + Strategies: We will open more servers to handle the users to reduce the impact of server overloading.
* Bugs or coding failure might occur due to implementation of new and a lot of features.
  + Strategies: Perform constant backups after every phase of implementation so that it could be use as a roll-back whenever issues or problems occurring when performing the implementation.

Business Risks:

* Marketing Department of the hotel do not know how to advertise the new website.
  + Strategies: We will leave it to the hotel owners and human resource managers to deal with the staff trainings.

Risk Analysis

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| --- | --- | --- | --- |
| Type of Risk | Severity of Impact | Likelihood of Occurrence | Risk Exposure |
| a) Unable to finish product on schedule | High (3) | High (3) | 9 |
| b) Insufficient Funding | High (3) | Medium (2) | 6 |
| c) Inexperienced Employees | Medium (2) | Low (1) | 2 |
| d) Server overloading | Medium (2) | Medium (2) | 4 |
| e) Complex user interface | Low (1) | Medium (2) | 2 |
| f) Long implementing duration for features | Medium (2) | Medium (2) | 4 |
| g) Lack of understanding of website advertising | Medium (2) | Medium (2) | 4 |
| h) Bugs occurring in websites | Medium - High (2.5) | High (3) | 7.5 |

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