

**TEMASEK POLYTECHNIC
SCHOOL OF INFORMATICS & IT
Software Engineering (SWEN)
AY2017/2018 (OCT SEMESTER)**

Assignment 2 Submission

Class: T03

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Submitted by: <1601634G> Kek Carmen

Submitted by: <1603304E> Gooi Chong Yen

Date: 21 / 11 / 2017

I CERTIFY THAT THIS ASSIGNMENT IS MY OWN ORIGINAL WORK AND MATERIAL HAS NOT BEEN COPIED FROM ANY OTHER WORK (PUBLISHED OR OTHERWISE) WITHOUT ACKNOWLEDGEMENT IN THE TEXT. I AM FULLY AWARE OF THE PENALTY OF PLAGIARISM AND LATE PENALTY.

Name and Signature of student: Law Jun Wei



Name and Signature of student: Kek Carmen



Name and Signature of student: Gooi Chong Yen



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**Temasek Polytechnic
School of Informatics and IT**

Diploma in Information Technology (IT)

Meeting Minutes

Project Particulars

Tutor	Mr Qi YuTao
Class	T03
Project Title	Delonix Regia Hotel Management System

Project Team's Particulars

Matric Number	Student Name
1605326F	Law Jun Wei
1601634G	Kek Carmen
1603304E	Gooi Chong Yen

Date: 13/11/2017

Venue: Meeting Room

Present: All

Absent with None
apologies:

<u>S/No</u>	<u>Item</u>	<u>Action By</u>
	<div>Meeting started at 11:20 am</div> <div><i>Modules Needed</i></div> <div>Booking Module</div> <div>Housekeeping and staff management Module</div> <div>Reporting Module</div> <div>Login and user account creation module</div>	All
1.	Users of the system End users: Reception staff (Access parts of the reporting module and full access to Booking Module) Management Users (Access to all modules except Login and user creation account module) Administrators (Access to all modules)	
2.	Booking Module (What is needed) Capture data First and last name of each guest	

<u>S/No</u>	<u>Item</u>	<u>Action By</u>
	No. of adult and children of guest Contact and email of guest Type of room Home and mailing address (street address, block and house number, postal code and country) Payment details (Cash or credit, Credit card No. and holders name, expiry date of card) Check-in details (Check-in date, desired check-out date) Additional Remarks Late check-out All records must be editable	
3.	<i>Booking Module (Flow when guest check-out)</i> Bring baggage to reception area Pass room key to reception staff Consumable charges (if any) Cleaning staff will check Generate payment invoice (No. of days stayed, Any food or drinks consumed, Have guest details, check-in and checkout date, No. of days stayed, Room rates, additional costs, payment mode)	
4.	<i>Housekeeping and staff management module (What is needed)</i> Keep records of staff Staff name Date of birth Bank account number Home address (street address, block and house number, postal code) Duty types (General maintenance, room maintenance, estate maintenance, security)	
5.	<i>Recording module (What is needed)</i> 1st report List all the rooms in the hotel Room statuses (Vacant, Occupied, Vacant and scheduled for cleaning.)	

<u>S/No</u>	<u>Item</u>	<u>Action By</u>
	<p>2nd report List all the guests in a single room</p> <p>3rd report List all the guests in all the rooms at a given time</p> <p>4th report Room occupancy report Generate statistics for room occupancy on a daily, weekly, monthly and yearly basis. ONLY FOR MANAGEMENT AND ADMINISTRATOR</p> <p>5th report Housekeeping report List duties where the staff is allocated to Generate housekeeping schedule for daily, weekly, monthly and yearly basis. ONLY FOR MANAGEMENT AND ADMINISTRATOR</p> <p>Additional functions</p> <p>Preview before printing</p>	
6.	<p><i>Budget for system</i> 70,000 Dollars</p>	
7.	<p><i>Software usage</i> Installed in 1 computer at reception area Specs for computer: Pentium 4 1gb RAM 160gb storage Connected with broadband</p> <p>OS Windows XP2</p>	
8.	<p><i>Integration with other systems</i> Not needed</p>	

<u>S/No</u>	<u>Item</u>	<u>Action By</u>
	<p>Long term-goals</p> <p>Guest can enquire for room availability directly online</p> <p>Reports can be exported direct to excel</p>	
9.	<p><i>Backups</i></p> <p>Backup at about 2 to 3 am on the first Sunday of every month</p> <p>Records are to be kept for 5 years</p>	
10.	<p><i>Closing</i></p> <p>Done by 31st March</p> <p>7th April to be fully deployed</p> <p>Meeting ended at 12:20 pm</p>	
	Recorded by: Chong Yen Gooi	
	Vetted by: Law Jun Wei	

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School of Informatics and IT

Diploma in Information Technology (IT)

Software Requirement Specifications (SRS)

Project Particulars

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1605326F	Law Jun Wei
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1603304E	Gooi Chong Yen

Revision History

Date	Version	Description	Author
15/11/17	1.0	Completed Document	Carmen
16/11/17	1.1	Edited Document	ChongYen
19/11/17	1.2	Vetted Document	JunWei
20/11/17	1.3	Finalized Document	JunWei

1. DISTRIBUTION OF WORKLOAD

Requirement Gathering	Members
System Functions	Carmen
User Characteristics	Carmen
General Constraints	Chong Yen
Functional Requirements	Carmen
Data Requirements	Jun Wei
User Interface Requirements	Jun Wei
Interface with Other Systems	Chong Yen
Assumption	Carmen
Operating Environment	Chong Yen
Development Constraints	Carmen
Performance	Carmen
Availability	Carmen
Security and Access Control Requirements	Jun Wei
Special Requirements	ALL

2. OVERVIEW OF REQUIREMENTS

2.1. System Functions

Booking Module

- Automate the actual booking of the rooms for customers.
- Allow users to check the rates of the hotel as well as notifying users whenever a room is available.
- Users will also be able to book the actual room by indicating their check-in and check-out date and time.
- Information is updated regularly on its own without any help from staff.

Check-in and out Module

- Receptionist enter customers details in the computer to help them check in. Screen will show the respective room numbers for them.
- The booking system will also use the information from this system to update its database.

Customer Relation Management Module

- Keep track of anything that is related to the customer, such as loyalty points and membership.
- Enable staff to check directly within the system to help customers claim their loyalty points & not need to refer to hard records which could cause mix ups

Room Service Module

- Customers will not need to call the concierge to request anything.
- The customer only need to use the tablet provided in their room to order by first selecting the desired food, then entering the time they wish for it to be delivered to their room.
- The tablet will then send the food order direct to the kitchen which can help prevent miscommunication between the customer and the concierge.
- Customers can also request for housekeeping via the tablet by clicking “Housekeeping” and selecting the desired timing.

Maintenance Management Module

- Service for customers to report any product or items that is spoiled or malfunctioning and needs to be replaced or maintained which they can do so via the tablet provided in the room.
- Track rental information, schedule maintenance, items or issues that needs to be maintained
- Contact number and details of maintenance employee for staff reference

Staff Account Module

- View by staffs of the hotel, edited by managers and administrators

- Managers and administrators can create the staff accounts.
- Staffs can view different modules based on their job and rank. They can also view their work schedule that is updated weekly.

Report Module

- Access by managers of departments and administrators.
- Generates report of room status and details
- Generate work schedule report of staffs.

2.2. User Characteristics

Users:

Administrator

- Hotel Owners
- Manages staffs, hotel management required
- Access to all modules

Reception Staffs

- Help customers to manual check-in at counter if they are not sure or do not wish to use the self-check-in kiosk
- Able to check customer's loyalty points and membership

Housekeeping and maintenance staffs

- Manages overall hotel cleanliness and facilities to its best condition

Modules:

Booking Module

- Access by Customers
- Customers can check room types and book their rooms online

Check-in and out Module

- Access by Receptionist
- Reception enter customer data to help them check in and out

Staff Account Module

- Hotel administrators and managers can create new staff accounts
- Staffs can then login their respective account to access functions based on their job and rank.
- Staffs can check their work schedules

Customer Relation Management Module

- Access by Reception Staffs and Administrator
- Reception Staffs can use it to check customer's loyalty points, and membership information

Room Service Module

- Access by Customers
- Customers use it to order food and specific delivery timings to avoid miscommunications via phone.
- It can also be used to request for housekeeping

Maintenance Management Module

- Access by Customers and Maintenance employees
- Customers reports any products or items that are spoiled or malfunction as well as the location
- Maintenance employees view the list of items that needs to be fixed or maintained, and other details (schedule maintenance, etc)

Report Module

- Access by managers of departments and administrators.
- Generate report of room status and details
- Generate housekeeping report

2.3. General Constraints

Budget Constraints

Budget provided is \$70,000 which might not be enough to cover the cost.

Old Hardware and Software

The computer where the software will be installed on is very old and has limited processing power and space and the RAM installed on the computer is also rather low compared to modern computers. The operating system which is Windows XP2 is also no longer supported by Microsoft.

Time Limitations

The time give to come up with a working software is rather limited due to the requests that the customer has provided for the system.

2.4. Functional Requirements

Booking Module

- Accessible via all users from guests to administrator, but mainly guests / customers

- Types of room – System displays list of type of room in a table format that consist of essential information such as room type, facilities included, amount and description of room type.
- Search function – it returns results by filtering keywords or budget.
- Booking of room – by indicating the customer information (full names of all guests, number of guest and rooms, type of room, payment details, check-in and check-out dates), customers can book their room
- Information is updated regularly without the help of the staffs.

Check-in and out Module

- Accessible by receptionist
- Check-in – Receptionists enter customers data such as name, passport number into the system. Screen will then show the room numbers for each customer.
- Check out – Receptionist need to collect the room card from the customer, and then enter the respective names and room number to set the room as checked out. It will then send a request to housekeeping staffs so they can clean the rooms that are vacant.

Customer Relation Management Module

- Accessible by staffs such as receptionists and any other staffs ranked above that such as managers.
- Check reward details - staffs can check customer's rewards details by searching their name. It will then show the various information such as loyalty points, past stays and memberships.
- Points redemption – staffs can help customers redeem their points (if customers request to do so) by clicking the button “Redeem points” and clicking the amount of points to use.

Room Service Module

- Used by customers. Accessible by kitchen staffs and managers.
- Housekeeping – Used by customers, accessible by housekeeping staffs. Customers can request for housekeeping and selecting the desired timing. Housekeeping staffs can also view the list of requests and edit it to be done when the room has been cleaned.
- Ordering food – Accessible by customers. After clicking “Order Food” button, the tablet screen will show the photos of all menu from breakfast, lunch, dinner to supper. By clicking on the photo of the food, it will show details of the food such as description, price and a button to “Add to Cart”. After checking out the cart, customer would have to enter various details such as timing of room service, room number (default set as customer's room but can be changed during check out), and other remarks if any.
- Checking order – accessible by customers. Customer can check their order status, and cancel it if it has not been prepared yet.

- Checking food orders – accessible by kitchen staffs. Kitchen staffs can check all the food order sent in, as well as the timing and room number so they can prepare it efficiently. They can also update status of food, so that customers know if it's being prepared and need not call in to check for any status updates.

Maintenance Management Module

- Used by customers, accessible by maintenance staffs and managers
- Report spoilt items/facilities – used by customers and housekeeping staffs to report any spoilt items or facilities that needs to be repaired or replaced. Users need to enter the location and category of product to submit the request. An optional choice is to take a photo of the spoilt product and submit it with the request too.
- Check list of spoilt items – accessible by maintenance staffs and managers. They can check the list of reports submitted in, and filter out by either location or category so they can fix items that have been submitted more often by users. They can also mark the issue as “fixed” to remove the issue of the list.
- Check rental information – accessible by maintenance staffs and managers. They can check rental information of facilities, lighting for events, etc. It should also contain contact number and details of the companies of each rental item.

Staff Account Module

- View by staffs, edited by managers and administrators
- Create Account – Managers and administrators can create staff accounts.
- Login – Staffs can login into their account with their user ID and password to access the functions based on their job and rank.
- Work Schedule – staffs can check their work schedule (especially housekeeping staffs) that is updated weekly.

Report Module

- Access by managers of departments and administrators.
- Room status report – It shows the room status report such as how often rooms are occupied on different timings and frequencies. Shows guests occupy single, couple room at each timing of the year.
- Housekeeping report – it shows the staff duties allocation, and housekeeping schedules of different frequency basis.

2.5. Data Requirements

Number of guests and children

Each guest details [First name, Last name, Contact Number, Email, Mailing Address, Payment Details (Credit Card/ Cash)]
Room number
Room rates
Number of nights
Mailing – street block postal country
Check-in check-out date and time
Additional Remarks (queen/king/smoking)
Late checkout
Consumables
Wake-up calls time (optional)

Guest: Field name, Data Type, Allow Null, Description, Examples

2.6. User Interface Requirements

Booking Module

This is the user interface of the booking module of the hotel system. It allows customers to check the rates, it will notify users when there is a room available and it helps to book the room by indicating their check-in and check-out date and time.

WELCOME MR. LAW,		DELONIX REGIA HOTEL		LOG OUT
GUEST AND STAFF		NEW BOOKING BOOKING VERIFICATION		
GUEST STATUS	ARRIVE:		DEPART:	
BOOKING OF ROOM	<input type="text"/>		<input type="text"/>	
ROOM SERVICE	No. OF ROOMS:		ADULTS(2./ROOM, 3./ROOM) :	
MAINTENANCE SERVICE	<input type="text"/>		<input type="text"/>	
MANAGEMENT TEAM ONLY	ROOM TYPE:		PROMO CODE:	
CHECKING IN/CHECKING OUT	<input type="text"/>		<input type="text"/>	
HOTEL STAFF				
REPORT	CHECK AVAILABILITY		Book	

WELCOME
MR. LAW,
DELONIX REGIA HOTEL
LOG OUT

GUEST AND STAFF

NEW BOOKING
BOOKING VERIFICATION

GUEST STATUS

BOOKING OF ROOM

ROOM SERVICE

MAINTENANCE SERVICE

MANAGEMENT TEAM ONLY

CHECKING IN/CHECKING OUT

HOTEL STAFF

REPORT

BOOKING No:

Check-In and Check-Out Module

This is the user interface of the check-in and check-out that allows receptionist to help the customers to process the check in and out of their staycation at the hotel.

WELCOME
MR. LAW,
DELONIX REGIA HOTEL
LOG OUT

GUEST AND STAFF

CHECK IN
CHECK OUT

GUEST STATUS

BOOKING OF ROOM

ROOM SERVICE

MAINTENANCE SERVICE

MANAGEMENT TEAM ONLY

CHECKING IN/CHECKING OUT

HOTEL STAFF

REPORT

ARRIVE:

DEPART:

No. OF ROOMS:

ADULTS(2/ROOM, 3/ROOM) :

ROOM TYPE:

TYPE OF BED:

SMOKING:
☐ YES
☐ No

GUEST NAME: LAW JUN WEI

MEMBERSHIP NUMBER: 2769 6382 8978 6726

CHECK AVAILABILITY

CHECK IN

WELCOME MR. LAW,		DELONIX REGIA HOTEL		LOG OUT
GUEST AND STAFF	CHECK IN	CHECK OUT		
GUEST STATUS	ROOM NO.:	<input type="text"/>	GO	
BOOKING OF ROOM	ROOM NO.: 1402		ROOM TYPE: SUPREME	
ROOM SERVICE	RATE: \$300/NIGHT		NO. OF GUEST: 2	
MAINTENANCE SERVICE	GUEST NAME: LAW JUN WEI		MEMBERSHIP NUMBER: 2769 6382 8978 6726	
MANAGEMENT TEAM ONLY	STAY LENGTH: 3 NIGHTS (11/01/17 – 14/01/17)			
CHECKING IN/CHECKING OUT	ITEM CONSUMED	UNIT PRICE	QUANTITY	SUBTOTAL PRICE
HOTEL STAFF	MINIBAR - COKE	\$5/CAN	2	\$10
REPORT	FISH & CHIP	\$15/SERVING	2	\$30
		TOTAL AMOUNT: \$940		CHECK OUT

Customer Relation Management Module

This is the user interface of the customer relation management where it allows staff to keep track of customer's informations such as their membership status.

WELCOME MR. LAW,		DELONIX REGIA HOTEL		LOG OUT
GUEST AND STAFF	GUEST STATUS			
GUEST STATUS	NAME: LAW JUN WEI		MEMBERSHIP NUMBER: 2769 6382 8978 6726	
BOOKING OF ROOM	EMAIL ADDRESS: JUNWEI@DRH.ORG		MEMBERSHIP STATUS: PLATINUM	
ROOM SERVICE	D.O.B.: 23/06/1998		CONTACT NO.: 94468845	
MAINTENANCE SERVICE	ADDRESS: 21 TAMPINES AVENUE 1 #05-239 SINGAPORE 529757			
MANAGEMENT TEAM ONLY				
CHECKING IN/CHECKING OUT	UPDATE			
HOTEL STAFF				
REPORT				

Room Service Module

This is the user interface of the room service module that allows customers to request anything from the hotel without calling the concierge by using the tablet provided in the room.

WELCOME MR. LAW,		DELONIX REGIA HOTEL		LOG OUT
GUEST AND STAFF	FOOD	HOUSEKEEPING		
GUEST STATUS	DATE TO BE SERVED AT: <input type="text"/>		ORDER	
BOOKING OF ROOM	TIME TO BE SERVED AT: <input type="text"/>			
ROOM SERVICE	FISH & CHIP - \$15		CHICKEN CHOP - \$18	
MAINTENANCE SERVICE	<input type="text"/>		<input type="text"/>	
MANAGEMENT TEAM ONLY	FRIED RICE - \$8		MEE GORENG - \$8	
CHECKING IN/CHECKING OUT	<input type="text"/>		<input type="text"/>	
HOTEL STAFF				
REPORT				

WELCOME MR. LAW,		DELONIX REGIA HOTEL		LOG OUT
GUEST AND STAFF	FOOD	HOUSEKEEPING		
GUEST STATUS	*PLEASE TAKE NOTE THAT HOUSEKEEPING WILL TAKE AROUND 30MINS			
BOOKING OF ROOM	DATE : <input type="text"/>			
ROOM SERVICE	TIME : <input type="text"/>			
MAINTENANCE SERVICE	ADDITIONAL REMARK :			
MANAGEMENT TEAM ONLY	<input type="text"/>			
CHECKING IN/CHECKING OUT				
HOTEL STAFF				
REPORT	SEND REQUEST			

Maintenance Management Module

This is the user interface of the maintenance management which allows customers to report any items spoiled which need to be replaced and track the status of the faulty item.

WELCOME
MR. LAW,
DELONIX REGIA HOTEL
LOG OUT

GUEST AND STAFF	REPORT	TRACKING STATUS
GUEST STATUS	ITEM : <input type="text"/> REMARKS: <input type="text"/> <input type="button" value="REPORT"/>	
BOOKING OF ROOM		
ROOM SERVICE		
MAINTENANCE SERVICE		
MANAGEMENT TEAM ONLY		
CHECKING IN/CHECKING OUT		
HOTEL STAFF		
REPORT		

WELCOME
MR. LAW,

DELONIX REGIA HOTEL

LOG OUT

GUEST AND STAFF	REPORT	TRACKING STATUS						
GUEST STATUS	<table><tr><th>ITEM</th><th>STATUS</th></tr><tr><td>AIR CON</td><td>SPOILED FIXING IN PROGRESS WILL BE FIXED BY 8PM</td></tr><tr><td>TELEVISION</td><td>SPOILED WILL BE REPLACED WILL BE REPLACED BY 5PM</td></tr></table>		ITEM	STATUS	AIR CON	SPOILED FIXING IN PROGRESS WILL BE FIXED BY 8PM	TELEVISION	SPOILED WILL BE REPLACED WILL BE REPLACED BY 5PM
ITEM			STATUS					
AIR CON			SPOILED FIXING IN PROGRESS WILL BE FIXED BY 8PM					
TELEVISION			SPOILED WILL BE REPLACED WILL BE REPLACED BY 5PM					
BOOKING OF ROOM								
ROOM SERVICE								
MAINTENANCE SERVICE								
MANAGEMENT TEAM ONLY								
CHECKING IN/CHECKING OUT								
HOTEL STAFF								
REPORT								

Staff Account Module

This is the user interface of the staff account that allow hotel staff to view and managers and administrators to create or edit their staff account. Access of Modules is being grant to different staff based on their job scope and rank. All staff can view their respective work schedule which is updated weekly.

WELCOME
MR. LAW,
DELONIX REGIA HOTEL
LOG OUT

GUEST AND STAFF	STAFF INFO	DUTIES
GUEST STATUS	STAFF ID: <input type="text"/> GO	
BOOKING OF ROOM	NAME: JOHN TAN STAFF ID: RS 8978 6726	
ROOM SERVICE	EMAIL ADDRESS: JOHNTAN@DRH.ORG STAFF ROLE: RECEPTION STAFF	
MAINTENANCE SERVICE	D.O.B.: 13/08/1978 CONTACT No.: 98763575	
MANAGEMENT TEAM ONLY	STAFF BANK: POSB SAVINGS STAFF BANK ACCOUNT No.: 028-23678-9	
CHECKING IN/CHECKING OUT	ADDRESS: 41 PASIR RIS DRIVE 1 #08-539 SINGAPORE 543557	
HOTEL STAFF	UPDATE	
REPORT		

WELCOME MR. LAW,	DELONIX REGIA HOTEL						LOG OUT
GUEST AND STAFF	STAFF INFO	DUTIES					
GUEST STATUS	STAFF ID	STAFF NAME	DUTY	START DATE	START TIME	END DATE	END TIME
BOOKING OF ROOM	RS 8978 6726	JOHN TAN	RECEPTION	18/10/17	0800	20/10/17	1500
ROOM SERVICE							
MAINTENANCE SERVICE							
MANAGEMENT TEAM ONLY							
CHECKING IN/CHECKING OUT							
HOTEL STAFF							
REPORT							

Report Module

This is the user interface of the report module which helps to generate report of room status and its details and also generate the work schedule report of staffs. The access is only given to managers of departments and administrators.

2.7. Interface with Other Systems

There are requirements by the customer to it integrate with other systems. However, these are not needed for the first product that will be given to the customer. The customer has however given us some long terms goals he hopes to achieve such

as enabling guests to check for room availability online and requesting that reports can be exported direct to excel.

The data in the servers will be backed up as .bak files. Backup needs to be done to enable the software to convert the data into an excel sheet. There isn't much security needed as everything will be done within the computer.

In order to allow customers to view the rooms availability online, the website will need to be updated in real time with JavaScript. A code will also need to be implemented at the database to fetch the updated data and update the database with it.

2.8. Assumptions

- Hotel has decent internet connection to ensure that data retrieval from the online database is smooth and has minimal to no lags.

3. OPERATIONAL AND QUALITY REQUIREMENTS

3.1. Operating Environment

Hardware

- Pentium 4 Processor Computer
- 1GB RAM
- 160GB Hard Drive
- Internet Broadband connection
- Printer will be needed to print reports
- Database server will be needed to store all the data
- Other computers to allow staff to access data

Software

- The software will need to be able to run on Windows XP 2 and higher.
- Microsoft SQL Server 2014
- Microsoft .NET 4.0 and above

3.2. Development Constraints

- Only 5 weeks left to implement the system
- Limited manpower as there are only 3 interns to implement the system for the hotel
- Ensure the software system can run on all the platforms required.

- Budget provided by the company. If they provided us with limited budget, we should make do with it and make changes according to the budget provided.
- Software licensing restrictions might occur if the system require us to use specific software

3.3. Performance

The acceptable response time for each page of the book in function is 2-4 second on average and 3-4 seconds during peak hours.

The acceptable response time for the self-check-in and check-out function is 2-4 seconds on average and 3-4 seconds during peak hours.

The acceptable response time for the customer relation management function is 2-4 seconds on average and 2-3 seconds during peak hours.

The acceptable response time for the room service function is 2-3 seconds on average and 2-4 seconds during peak hours.

The acceptable response time for the maintenance management function is 2-4 seconds on average and 3-4 seconds during peak hours.

The acceptable response time for the places of interest function is 2-4 seconds on average and 2-3 seconds during peak hours.

3.4. Availability

The system is required to run 24/7 as customers may wish to book hotel rooms at any time, and time zone since they might be from various countries.

The system maintenance and data backup timing should be at a non-peak hour. Thus, we have decided to choose 1-3am on the first Monday of every month. 2 hours would provide efficient time for the IT staffs to fix any bugs required to run the various modules smoothly, and to run the large amount of data backups in one month.

3.5. Security and Access Control Requirements

Hotel staff, Customers and Administrator will be able to log in to the hotel management system. Different users will be given access to different modules based on what they need.

User	Modules given access to
Reception Staff	-Booking Module

	-Check-in and out Module -Customer Relation Management Module
Customer	-Room Service Module -Maintenance Management Module -Places of Interest Module
Kitchen Staff	-Room Service Module
Maintenance Staff	-Maintenance Management Module
Hotel Manager	-Booking Module -Check-in and out Module -Customer Relation Management Module -Room Service Module -Maintenance Management Module -Staff Account Module -Report Module
Administrator	-Booking Module -Check-in and out Module -Customer Relation Management Module -Room Service Module -Maintenance Management Module -Staff Account Module -Report Module

4. SPECIAL REQUIREMENTS

Good quality internet connection that can support multiple users accessing online database.

5. REFERENCES

[https://msdn.microsoft.com/library/ms143506\(v=sql.120\).aspx#hwsrw](https://msdn.microsoft.com/library/ms143506(v=sql.120).aspx#hwsrw)

<https://sqlbak.com/blog/export-data-from-a-bak-file-to-excel/>

<https://stackoverflow.com/questions/4061197/how-do-they-make-real-time-data-live-on-a-web-page>

Temasek Polytechnic
School of Informatics and IT

Diploma in Information Technology (IT)

Software Design Specifications (DS)

Project Particulars

Tutor	Mr Qi YuTao
Class	T03
Project Title	Delonix Regia Hotel Management System

Project Team's Particulars

Matric Number	Student Name
1605326F	Law Jun Wei
1601634G	Kek Carmen
1603304E	Gooi Chong Yen

Revision History

Date	Version	Description	Author
15/11/17	1.0	Completed Document	Carmen
17/11/17	1.1	Edited Document	ChongYen
20/11/17	1.2	Vetted Document	JunWei
21/11/17	1.3	Finalized Document	JunWei

1. DISTRIBUTION OF WORKLOAD

Design	Members
Architecture Design, User Interface (UI) Design, Program Design	Jun Wei
Program Design – Use Cases	Chong Yen
Database Design	Carmen

2. ARCHITECTURE DESIGN

There are 3 layers involved in an application which consists of the presentation layer, business layer and data layer.

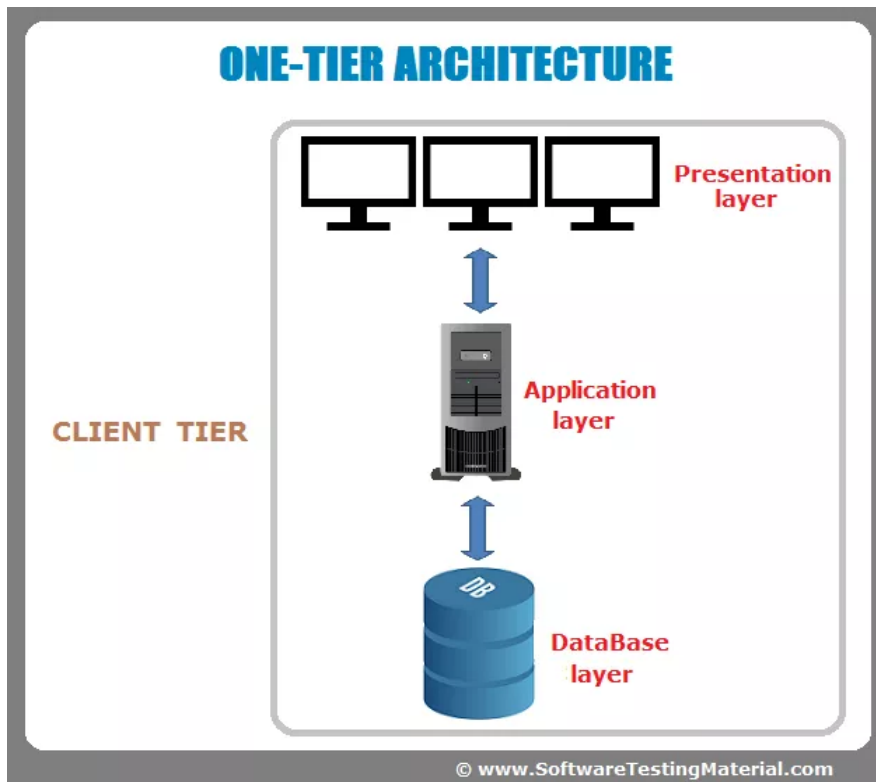
The presentation layer is the top layer of an application which is used to let the users to see the application and gain access to the web pages. The main function of this layer is to communicate with the application layer. The presentation layer will help to pass the information that is key in by the user to the application layer.

The application layer contains the written business logic. The application layer provides users with the capability to operate on the application. It also controls the application's functionality by executing detailed processing. It acts as a mediator between the presentation and data layer.

The data layer contains the database of the application. The application layer will communicate with the data layer to request to retrieve the data. It comprises different ways that connect the database and execute the necessary functions such as create, retrieve, update, delete, etc.

There are four different types of software architecture designs, standalone application which are also known as 1-tier, 2-tier, 3-tier and n-tier architecture.

2.1.1-tier Architecture



The standalone application requires only one PC to work and does not need to be connected to any network. The 3 layers of the architecture design will only be saved on the client side. Hotel management system is not suitable to use it because it requires multiple devices to be connected to a network to match the data such as existing guests staying in the hotel and the work schedule of the hotel staffs. The application would have to rely on the processing power of the computer and all resources must be attached to it.

Advantages:

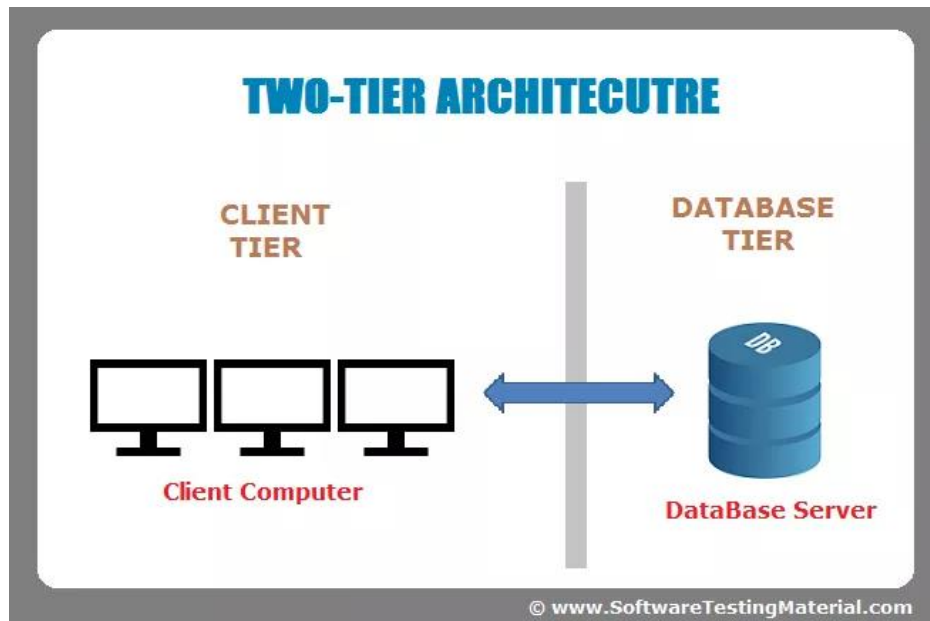
- Optimization - Standalone applications are relatively easy to implement and to optimize performance.
- Compatibility - Standalone applications do not have compatibility or context switching issues.
- Cost - The cost of deploying, managing and maintaining a standalone application is lesser as compared to the other architecture designs.
- Centralization of Control - The user would be able to control of the application as it does not need to communicate with any network.

- Scalability - The application can be deployed to many devices.

Disadvantages:

- Lack Remote Access - The application may not be able to support remote or distribute access for data resources.
- Cost – High cost of having a central mainframe.
- Congestion - Only a certain limited number of users can gain access to the application at a specific given time.
- Downtime - If the system break down, the application would not be accessible as it does not have any backup.

2.2.2-tier Architecture



The 2-tier architecture is designed for the client and server to communicate. The application must be connected to a network, so that it will function properly. The presentation and application layer will be at the client side while the data layer will be at the server side. The “client” will be the program that is running on the hotel management device used by the hotel staffs to retrieve and upload customers’ information. The “server” will be the machine that allow client gets content from. Many clients can access the

information on a single server, hence, this architecture design is suitable for a hotel management system.

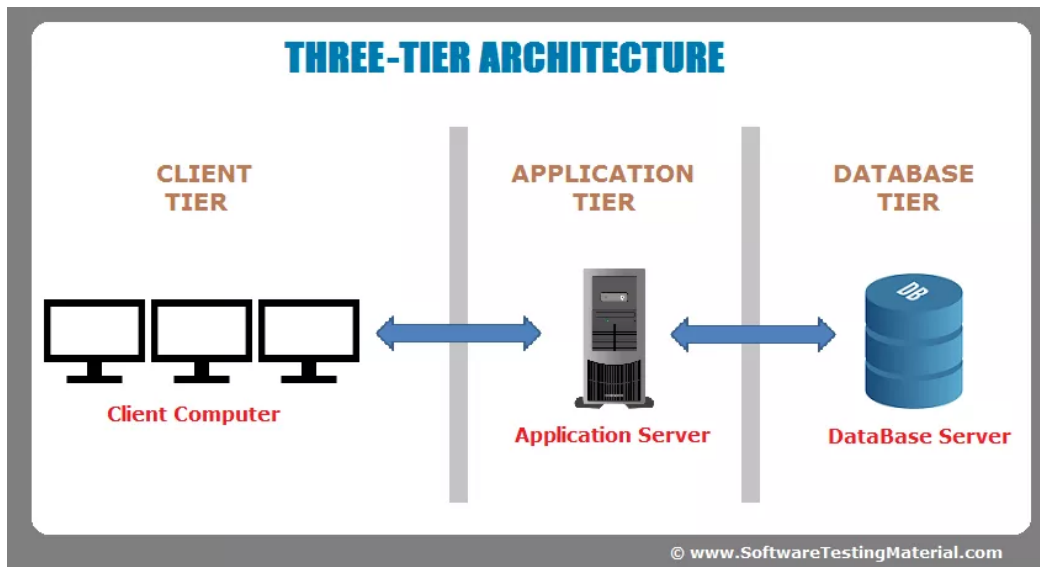
Advantages:

- **Simplicity** - Applications can be easily developed and easily maintained.
- **Tools Availability** - Maximum user satisfaction is gained with accurate and fast prototyping of applications through robust tools. Most reporting tools are available for the 2-tier architecture model.
- **Performance** - The database server and business logic is physically close and this offers a higher performance since communication occurs more quickly.

Disadvantages:

- **Changing Environment** - Business environments with rapidly changing rules and regulations are not suitable as the database server has to handle the business logic and this will slow down its database performance.
- **Scalability** - Lacks scalability as it supports only a limited number of users. Only a limited number of user connections can be supported before the application performance degrades rapidly.
- **Minimal Logic Sharing** - Since the application logic is coupled with the client it's difficult to re-use logic spread among applications and tools.
- **Change of Database Structure** - Most applications used for interaction is dependent on the database structure and this creates an issue when it is being re-designed, as they are intimate with the prevailing structure.

2.3.3-tier Architecture



The 3-tier architecture design consists of the 3 layers which are stored separately. The presentation layer is stored at the client side; the business application layer is stored in one or more servers and the data layer is stored in a database server. The web browser on the client device will be responsible for the user interface, data entry, data validation and output formatting through the use of HTML.

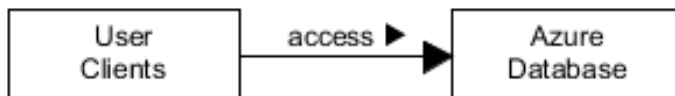
Advantages:

- Scalability - The application servers can be deployed on many machines. The database only require connection from a smaller number of application servers.
- Improve Data Integrity - The application tier can verify the data entered into the system before updating the database.
- Improved Security – Client does not have direct access to the database. Business logic is more secure as it is placed on a secured central server.
- Better Performance – Because the presentation layer can store requests, network utilization is minimized, and the load is reduced on the application and data layers.
- Easy Maintenance - Maintenance and modification would not affect other modules. High degree of flexibility in deployment platform and configuration.

Disadvantages:

- Increased Complexity - Points of communication are doubled. The benefit of the productivity enhancements provided by the client tools will be reduced.
- Fewer Tools - Most of the reporting tools are only available for a 2-tier architecture.

2.4. Proposed System Architecture Design



Our Project team recommends Wangs to use the 2-tier architecture design for his hotel management system as the team feels that the advantages of the 2-tier architecture design is useful for their hotel management system as it allow multiple staffs to access into the system and update the system at the same time. The 2-tier architecture is less complex as compared to the 3-tier architecture and is able to meet Wangs' requirements. It can also be easily implemented and maintained.

3. USER INTERFACE (UI) DESIGN

DELONIX REGIA HOTEL

SIGN IN

USERNAME/EMAIL:

PASSWORD:

SIGN IN [FORGOT PASSWORD?](#)

Login

The login screen was made simple with no additional features beyond allowing the user to enter their username and password.

VIEW OR CHANGE A RESERVATION

LAST NAME:

BOOKING NUMBER:

FIND

Edit Booking

Customers can edit their booking if there is any mistakes, by entering their last name and booking number and find out their booking.

REGISTRATION

FIRST NAME:

LAST NAME:

EMAIL ADDRESS:

PASSWORD:

DATE OF BIRTH:

CONTACT NO.:

ADDRESS:

MANAGEMENT CODE:

VERIFY

MANAGEMENT TEAM ONLY

STAFF ROLE:

STAFF BANK:

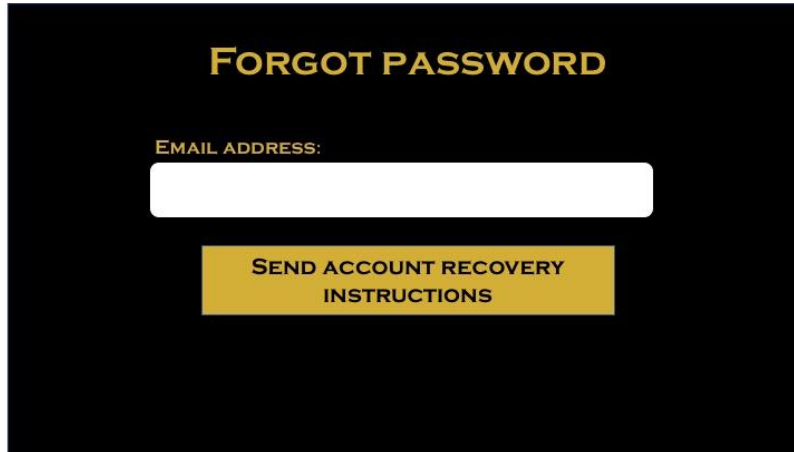
STAFF BANK A/C No.:

REGISTER

Registration

Customers can register their account at this page by entering the required details stated on the left side of the page, as for the staff account, Managers and administrator can help their staff to register it by entering all their details but once they fill up the left side

of the page, they will have to fill up the right side of the page for staff account but the staff side will not be open unless the users have the management code which is only own by administrator and managers once the key is entered and verified, they can proceed on the fill up the staff account required details and click on the register button.

A screenshot of a 'FORGOT PASSWORD' form. The title 'FORGOT PASSWORD' is in yellow text at the top. Below it, the label 'EMAIL ADDRESS:' is in yellow, followed by a white text input field. At the bottom, there is a yellow button with the text 'SEND ACCOUNT RECOVERY INSTRUCTIONS' in black.

Forgot Password

If the customer lose their password, they can retrieve it by entering their email address that they use to register for the account and a new password will be send to their email and they can then reset the password and activate the account.

A screenshot of the 'GUEST STATUS' page for 'DELONIX REGIA HOTEL'. The page has a dark blue header with 'WELCOME MR. LAW,' on the left, the hotel name 'DELONIX REGIA HOTEL' in the center, and a 'LOG OUT' button on the right. A sidebar on the left contains a menu with options: 'GUEST AND STAFF', 'GUEST STATUS' (highlighted), 'BOOKING OF ROOM', 'ROOM SERVICE', 'MAINTENANCE SERVICE', 'MANAGEMENT TEAM ONLY', 'CHECKING IN/CHECKING OUT', 'HOTEL STAFF', and 'REPORT'. The main content area displays guest details for 'LAW JUN WEI': 'NAME: LAW JUN WEI', 'MEMBERSHIP NUMBER: 2769 6382 8978 6726', 'EMAIL ADDRESS: JUNWEI@DRH.ORG', 'MEMBERSHIP STATUS: PLATINUM', 'D.O.B.: 23/06/1998', 'CONTACT NO.: 94468845', and 'ADDRESS: 21 TAMPINES AVENUE 1 #05-239 SINGAPORE 529757'. At the bottom of the main area is a yellow 'UPDATE' button.

Guest Status

This page helps customers to check on their membership status, it also can help them to update their details when there is something they change.

WELCOME MR. LAW,		DELONIX REGIA HOTEL		LOG OUT
GUEST AND STAFF		NEW BOOKING BOOKING VERIFICATION		
GUEST STATUS	ARRIVE:		DEPART:	
BOOKING OF ROOM	<input type="text"/>		<input type="text"/>	
ROOM SERVICE	No. OF ROOMS:		ADULTS(2/ROOM, 3/ROOM) :	
MAINTENANCE SERVICE	<input type="text"/>		<input type="text"/>	
MANAGEMENT TEAM ONLY	ROOM TYPE:		PROMO CODE:	
CHECKING IN/CHECKING OUT	<input type="text"/>		<input type="text"/>	
HOTEL STAFF				
REPORT	CHECK AVAILABILITY		Book	

New Booking

Customers will just have to enter the required details and enter a promo code if they have for discount, check whether the room is available and once is vacant, they can just click on book button.

WELCOME MR. LAW,		DELONIX REGIA HOTEL		LOG OUT												
GUEST AND STAFF		NEW BOOKING BOOKING VERIFICATION														
GUEST STATUS	BOOKING No: <input type="text"/>															
BOOKING OF ROOM																
ROOM SERVICE	<table border="1"> <thead> <tr> <th>BOOKING NO.</th> <th>GUEST NAME</th> <th>ROOM TYPE</th> <th>ROOM No.</th> <th>CHECK IN</th> <th>CHECK OUT</th> </tr> </thead> <tbody> <tr> <td>234567890-09</td> <td>LAW JUN WEI</td> <td>SUPREME</td> <td>1402</td> <td>11/01/17</td> <td>14/01/17</td> </tr> </tbody> </table>				BOOKING NO.	GUEST NAME	ROOM TYPE	ROOM No.	CHECK IN	CHECK OUT	234567890-09	LAW JUN WEI	SUPREME	1402	11/01/17	14/01/17
BOOKING NO.	GUEST NAME	ROOM TYPE	ROOM No.	CHECK IN	CHECK OUT											
234567890-09	LAW JUN WEI	SUPREME	1402	11/01/17	14/01/17											
MAINTENANCE SERVICE																
MANAGEMENT TEAM ONLY																
CHECKING IN/CHECKING OUT																
HOTEL STAFF																
REPORT																

Booking Verification

Customer can view their booking information by entering their booking number, when they want to check in, they can just give their booking number to the receptionist and they will check for the booking and help the customer to check in.

WELCOME MR. LAW,		DELONIX REGIA HOTEL		LOG OUT
GUEST AND STAFF		FOOD	HOUSEKEEPING	
GUEST STATUS	DATE TO BE SERVED AT: <input type="text"/>		ORDER	
BOOKING OF ROOM	TIME TO BE SERVED AT: <input type="text"/>			
ROOM SERVICE	FISH & CHIP - \$15		CHICKEN CHOP - \$18	
MAINTENANCE SERVICE	<div>PICTURE</div>		<div>PICTURE</div>	
MANAGEMENT TEAM ONLY	FRIED RICE - \$8		MEE GORENG - \$8	
CHECKING IN/CHECKING OUT	<div>PICTURE</div>		<div>PICTURE</div>	
HOTEL STAFF				
REPORT				

Room Service(Food)

Customers can use this system to help them order their food by entering the date and time for the food to be served and then select their choice of food, once they are done with it, they can just click on the order button and the order will be sent to the kitchen and it will be served to the customers in a while.

WELCOME MR. LAW,		DELONIX REGIA HOTEL		LOG OUT
GUEST AND STAFF		FOOD	HOUSEKEEPING	
GUEST STATUS	*PLEASE TAKE NOTE THAT HOUSEKEEPING WILL TAKE AROUND 30MINS			
BOOKING OF ROOM	DATE : <input type="text"/>			
ROOM SERVICE	TIME : <input type="text"/>			
MAINTENANCE SERVICE	ADDITIONAL REMARK :			
MANAGEMENT TEAM ONLY	<input type="text"/>			
CHECKING IN/CHECKING OUT				
HOTEL STAFF				
REPORT	<div>SEND REQUEST</div>			

Room Service(Housekeeping)

Customers can also use the system to request for housekeeping by entering the date and time they want their room to be clean, they can also include additional remark like,

ask for more toilet paper or not to touch any personal belonging etc. They will have to take note that housekeeping takes around 30 mins to complete. Once they are done with entering the details, they can send the request out.

The screenshot shows a web interface for 'DELONIX REGIA HOTEL'. At the top, it says 'WELCOME MR. LAW,' and has a 'LOG OUT' button. Below this is a navigation bar with 'REPORT' and 'TRACKING STATUS' tabs. On the left is a sidebar menu with options: GUEST AND STAFF, GUEST STATUS, BOOKING OF ROOM, ROOM SERVICE, MAINTENANCE SERVICE, MANAGEMENT TEAM ONLY, CHECKING IN/CHECKING OUT, HOTEL STAFF, and REPORT. The main content area is for the 'REPORT' tab, featuring an 'ITEM:' text input field, a 'REMARKS:' text area, and a 'REPORT' button at the bottom.

Report on maintenance and faulty items

Customers can enter the name of the item that is faulty, for example air con is not cooling, so their will have to fill in air con at the item section and for the remarks, they will have to enter what went wrong for the item and then click on the report button. Report will then be send to the maintenance team.

This screenshot shows the 'TRACKING STATUS' tab of the maintenance report system. It displays a table with two columns: 'ITEM' and 'STATUS'. The table lists two items: 'AIR CON' and 'TELEVISION', both marked as 'SPOILED' with specific repair timelines.

ITEM	STATUS
AIR CON	SPOILED FIXING IN PROGRESS WILL BE FIXED BY 8PM
TELEVISION	SPOILED WILL BE REPLACED WILL BE REPLACED BY 5PM

Maintenance Status

Customers can then go the tracking status section to look at the item and its status, informing the status and what time the repair will be done.

WELCOME MR. LAW,		DELONIX REGIA HOTEL		LOG OUT
GUEST AND STAFF		CHECK IN	CHECK OUT	
GUEST STATUS	ARRIVE:	DEPART:		
BOOKING OF ROOM	NO. OF ROOMS:	ADULTS(2/ROOM, 3/ROOM) :		
ROOM SERVICE	ROOM TYPE:	TYPE OF BED:		
MAINTENANCE SERVICE	SMOKING: <input type="checkbox"/> YES <input type="checkbox"/> No	GUEST NAME: LAW JUN WEI		
MANAGEMENT TEAM ONLY		MEMBERSHIP NUMBER: 2769 6382 8978 6726		
CHECKING IN/CHECKING OUT				
HOTEL STAFF				
REPORT				

Check In

The check-in tab is separated into 2 more pages, check in and check out, which will be accessed from the tabs at the top of the page. This design was chosen to make it easier for the user to navigate the different pages of each tab easily.

Receptionist will just have to enter the required details and check for the availability of the room and once the room is available, they can just click on the check in button

WELCOME MR. LAW,		DELONIX REGIA HOTEL		LOG OUT
GUEST AND STAFF		CHECK IN	CHECK OUT	
GUEST STATUS	ROOM NO.:		GO	
BOOKING OF ROOM	ROOM NO.: 1402	ROOM TYPE: SUPREME		
ROOM SERVICE	RATE: \$300/NIGHT	NO. OF GUEST: 2		
MAINTENANCE SERVICE	GUEST NAME: LAW JUN WEI	MEMBERSHIP NUMBER: 2769 6382 8978 6726		
MANAGEMENT TEAM ONLY	STAY LENGTH: 3 NIGHTS (11/01/17 – 14/01/17)			
CHECKING IN/CHECKING OUT	ITEM CONSUMED	UNIT PRICE	QUANTITY	SUBTOTAL PRICE
HOTEL STAFF	MINIBAR - COKE	\$5/CAN	2	\$10
REPORT	FISH & CHIP	\$15/SERVING	2	\$30
	TOTAL AMOUNT: \$940			CHECK OUT

Check Out

Firstly, the receptionist can just type in the room number after the guest return the hotel room card to them and once they click on the go button, the system will display all the

information of the room as well as the item consumed during the staycation and the total cost of the stay. Once the customer pay the amount, the receptionist can just click on the check-out button and the room will be check out.

WELCOME MR. LAW,		DELONIX REGIA HOTEL		LOG OUT
GUEST AND STAFF	STAFF INFO	DUTIES		
GUEST STATUS	STAFF ID: <input type="text"/>	GO		
BOOKING OF ROOM	NAME: JOHN TAN		STAFF ID: RS 8978 6726	
ROOM SERVICE	EMAIL ADDRESS: JOHNTAN@DRH.ORG		STAFF ROLE: RECEPTION STAFF	
MAINTENANCE SERVICE	D.O.B.: 13/08/1978		CONTACT NO.: 98763575	
MANAGEMENT TEAM ONLY	STAFF BANK: POSB SAVINGS		STAFF BANK ACCOUNT NO.: 028-23678-9	
CHECKING IN/CHECKING OUT	ADDRESS: 41 PASIR RIS DRIVE 1 #08-539 SINGAPORE 543557			
HOTEL STAFF	UPDATE			
REPORT				

Staff Info

Managers and administrator can update their staff details and do necessary update by entering their staff id and click on the go button and all the info will be stated there, if there is an update needed, they can click on the update button.

WELCOME MR. LAW,		DELONIX REGIA HOTEL		LOG OUT			
GUEST AND STAFF	STAFF INFO	DUTIES					
GUEST STATUS	STAFF ID	STAFF NAME	DUTY	START DATE	START TIME	END DATE	END TIME
BOOKING OF ROOM	RS 8978 6726	JOHN TAN	RECEPTION	18/10/17	0800	20/10/17	1500
ROOM SERVICE							
MAINTENANCE SERVICE							
MANAGEMENT TEAM ONLY							
CHECKING IN/CHECKING OUT							
HOTEL STAFF							
REPORT							

Staff Duties

Hotel staff can enter their staff id and click on the GO button and their respective duty roster will be displayed and they can check it.

4. PROGRAM DESIGN

Booking Module

It allows customers to check the rates of the hotel, automate the booking of rooms for the customers. All information will be updated regularly automatically.

Check-in and Check-out Module

It allows receptionist to enter customer details into the computer for checking in and out purpose. Screen will then display the respective room number allocated to them. The booking system will then update its database.

Customer Relation Management Module

It allows hotel staff to keep track of customer information such as loyalty points and membership status. Hotel staff can then help the customer to claim their loyalty points.

Room Service Module

It allows customers to request for room service through the tablet provided in their room. Customer will just have to select their desired food and enter the time they want the food to be served, the tablet will then send the order to the kitchen, once the kitchen is done with it, they will send the food over to the customer room. Customers can also use the tablet to request for housekeeping by selecting the house keeping option and select the time they want their room to be clean.

Maintenance Management Module

It allows customers to report any item that is faulty in the room that need to be replaced by using the tablet provided in the room. They can also use it to track schedule maintenance, status of faulty items and contact maintenance staff.

Staff Account Module

It allows hotel staffs to view, managers and administrators to edit the account information. Managers and Administrators can create the staff accounts for their staff. Access of

Modules is being grant to different staff based on their job scope and rank. All staff can view their respective work schedule which is updated weekly.

Report Module

It allows managers of different departments and administrators to access it. It helps them to generate reports of room status and their details. It will also help staff to generate their work schedule report.

4.1. Use Cases

Use Case 1 (Booking a new room)

Actors: Guest

1. The use case begins when the guest would like to book a room.
2. Guest selects booking option.
3. System prompts the guest to enter their personal details (name, contact number, passport number, email, payment details)
4. Guest enters their personal details such as their name, contact number, email, payment details, etc. If details were not entered properly, proceed to alternate flow 1.
5. System prompts guest to select their check-in and check-out dates.
6. The guest then selects them. If dates were not selected properly or no date was selected, proceed to alternate flow 2.
7. System will then prompt them to select their type of room as well as the number of guests that will be staying with them and the names of these guests.
8. The guest will enter these details. If details were not entered properly, proceed to alternate flow 3.
9. The system will then ask if the guest would like to have a late check-out.
10. The guest will then select the choice. If no choice was selected proceed to alternate flow 4.
11. The system will then show all the choices that the guest has picked and the details that they have entered, asking them to confirm their entries and choices.
12. If the guest clicks confirm, proceed to the next step. Else proceed to alternate flow 5.
13. The system will then send an email to the guest's email with the booking number.
14. The use case ends when the guest has managed to book a room.

Alternate Flow 1

1. The system will then prompt the guest to re- enter their personal details.

Alternate Flow 2

1. The system will then prompt the guest to select their dates again.

Alternate Flow 3

1. The system will prompt the guest to enter the details again.

Alternate Flow 4

1. The system will prompt the guest to select their choice

Alternate Flow 5

1. The system will then bring the guest back to step 4 for them to edit any changes they may have

Use Case 2 (Check-in)

Actors: Guest, Receptionist

1. The use case starts when a guest would like to check into their rooms.
2. The system will ask the guest if they have booked a room.
3. The receptionist will then ask if the guest has booked a room.
4. If the guest has booked a room, proceed to alternate flow 1. Else continue to next step.
5. The system then prompts the receptionist to enter the guest's personal details.
6. The receptionist will then ask for the guest's personal details
7. The receptionist then enters their personal details. If details were not entered properly, proceed to alternate flow 2.
8. The system will then prompt the receptionist to select the check-in and check-out dates for the guest.
9. The receptionist will then ask for the guest's check- in and check-out dates.
10. The receptionist then selects them. If dates were not selected properly or no date was selected, proceed to alternate flow 3.
11. The system will then prompt the receptionist to select the type of room as well as the number of guests that will be staying with them and the names of these guests.
12. The receptionist will then ask these details from the guest.
13. The receptionist will enter these details. If details were not entered properly, proceed to alternate flow 4.
14. The system will then ask if the guest would like to have a late check-out.
15. The receptionist will then ask the guest if they would like late check-out
16. The receptionist will then select the choice. If no choice was selected proceed to alternate flow 5.
17. The system will then show all the choices that the receptionist has picked and the details that the or she have entered, asking to confirm the entries and choices.
18. The receptionist will then ask the guest for confirmation.
19. If the receptionist clicks confirm, proceed to the next step. Else proceed to alternate flow 6.
20. The system will then save the data in the database.
21. The use case ends when the guest has managed to check into their rooms.

Alternate Flow 1

1. The receptionist will then ask for the guest's booking number.
2. The guest will then provide the booking number.
3. If the booking number is invalid, proceed to step 7. Else carry on to next step.
4. The receptionist will then fetch the data associated with the booking number.
5. The receptionist will then hand the keys for the room to the guest.

Alternate Flow 2

1. System prompt guest to re-enter their personal details.

Alternate Flow 3

1. The system will then prompt the guest to select their dates again.

Alternate Flow 4

1. The system will prompt the guest to enter the details again.

Alternate Flow 5

1. The system will prompt the guest to select their choice.

Alternate Flow 6

1. The system will then bring the guest back to step 7 for them to edit any changes they may have.

Use Case 3 (Check-Out)

Actors: Guest, Receptionist

1. The use case starts when a guest would like to check-out.
2. The guest will pass the key to the receptionist.
3. The receptionist will select the check-out function.
4. The system will then ask if anything has been consumed from the room's minibar.
5. The receptionist will then ask the guest if they have consumed anything from the room's minibar.
6. The guest will then give their answer.
7. The receptionist will then select yes or no from the system.
8. The payment invoice will then be generated.
9. If there are any disputable charges, proceed to alternate flow 1. Else proceed to next step.
10. The use case ends when the guest has managed to check-out.

Alternate Flow 1

1. The receptionist will select edit payment invoice.
2. The receptionist then edits the invoice.
3. The receptionist will then print the edited invoice.

Use Case 4 (Staff Login)

Actors: Hotel Staff

1. The use case starts when the hotel staff would like to login into their own account.
2. The hotel staff enters their user name and password.
3. The hotel staff then selects login.
4. The use case ends when the hotel staff has managed to login into their own account.

Use Case 5 (Staff Account creation)

Actors: Department Manager or Administrator

1. The use case starts when a manager or administrator wish to create an account.
2. Manager or administrator will need to login into their account.
3. They will then select create new staff account.
4. Manager or administrator will then enter the staff's name, date of birth, bank account number, home address and duty types.
5. They will then select the access level of the staff account.
6. The use case ends when the account has been successfully created.

Use Case 6 (Checking Loyalty points and membership)

Actors: Reception staff, administrator

1. The use case starts when the reception staff or administrator wants to check a guest's Loyalty points and membership.
2. Reception staff or administrator will login into their account.
3. They will select guest loyalty points.
4. System will prompt the reception staff or administrator to enter the member ID.
5. The reception staff or administrator will then enter the ID.
6. The system will then show the member's loyalty points and membership details.
7. The system ends when the reception staff or administrator has successfully checked the guest's loyalty points and membership.

Use Case 7 (Redeeming points)

Actors: Reception staff, administrator, guest

1. The use case starts when the guest would like to redeem their loyalty points.
2. The reception staff or administrator will login into their account.
3. They will then click on point redemption.
4. Reception staff or administrator will enter member id.
5. System will then show what can be redeemed based on the points.
6. The guest will then choose what they would like to redeem.

7. Reception staff or administrator will then select the item to be redeemed.
8. The use case ends when the loyalty points have been redeemed.

Use Case 8 (Generating a Report)

Actors: manager and administrator

1. The use case starts when a manager or administrator would like to generate a report.
2. The manager or administrator will login into their account.
3. They will then select “generate a report” option.
4. The system will then prompt them to choose which report to generate.
5. The manager or administrator will then select which report to generate.
6. The system will then generate the report.
7. The use case end when a report has been successfully generated.

Use Case 9 (Room Service - Ordering Food)

Actors: Guest

1. The use case starts when the guest would like to order food.
2. The guest selects order food from the provided tablet.
3. The guest then selects what they would like.
4. The guest will then enter details such as what time they would like the food to be sent and their room number and any remarks they might have.
5. Once the guest is done, they will select confirm order.
6. The system till then send the order to the kitchen.
7. The use case ends when the guest has managed to order their food.

Use Case 10 (Checking Orders ~ Guest)

Actors: Guest

1. The use case starts when the guest would like the check their order.
2. The guest selects check order.
3. The system will the display the current orders the guest has.
4. The use case ends when the guest has managed to check their order.

Use Case 11 (Checking Orders ~ Chef)

Actors: Chef

1. The use case starts when the chef would like to check what he needs to cook.
2. The chef selects outstanding orders.
3. The system will then show the outstanding order the chef has to complete as well as any requests guest may have.
4. The use case ends when the chef has finished checking the orders.

Use Case 12 (Request Housekeeping)

Actors: Guest

1. The use case starts when the guest would like to request for housekeeping services.
2. The guest selects housekeeping from the tablet.
3. The guest then enters their room number and the time they want the housekeeper to come.
4. The use case ends when the guest has managed to request for housekeeping.

Use Case 13 (Report spoilt items/facilities)

Actors: Guest, staffs

1. The use case starts when the user would like to report spoilt items or facilities.
2. Guest selects report spoilt items/facilities from the tablet in the room.
3. System prompts guest to enter details of spoilt item/facilities
4. Guest will then type out what is spoilt in the space provided.
5. Guest will then select send report.
6. The use case ends when guest has managed to report spoilt items or facilities.

Use Case 14 (Check spoilt items/facilities)

Actors: Maintenance staff, Manager

1. The use case starts when the maintenance staff or manager wants to check for reports on spoilt items/facilities.
2. The maintenance staff or manager will select report of spoilt items/facilities.
3. The system will then display all the reports that have been given.
4. The maintenance staff or manager will then be able to view these reports.
5. The use case ends when the maintenance staff or manager has managed to view the reports.

5. DATABASE DESIGN

StaffAccount(**StaffID**, Username, Password)

StaffAccount - Stores Login information for staff.

Staff(**StaffID**, FirstName, LastName, RoleID)

Staff - Holds details of staff and its role

RoomRate(**RoomTypeID**, PriceRate, **StartDate**, **EndDate**)

RoomRate - Allows report module to generate the total price

RoomType(**RoomTypeID**, RoomTypeName, Smoking, SingleBed, QueenBed, KingBed)

RoomType - States the class of room, facilities included and number of beds.

Room (**RoomNumber**, Floor, RoomTypeID)

Room - States the type of room and the floor it is located on.

Housekeeping (**HousekeepingID**, **staffID**, RoomNumber)

Housekeeping – Housekeeping staffs that is in charge of each room cleaning

RoomStatus (**RoomNumber**, **StartDate**, **EndDate**, RoomStatus, BookingID)

RoomSchedule – Allows staff to check the room status (vacant, booked, occupied, pending housekeeping, cleaning in progress) and availability of each rooms easily, which states booked by which customer or on cleaning duty.

Guest (**GuestID**, FirstName, LastName, Contact, Email, Country, Address, PaymentModelID)

Guest - This is where it stores its customer's personal details.

Payment(**PaymentModelID**, PaymentModeName, FirstName, LastName, CreditcardNum)

Payment - We have included payment table so that the business can easily add more payment types in the future, like visa, american express, etc.

Booking(**BookingID**, AdultsNum, ChildrenNum, CheckInDate, CheckOutDate, PriceRate, Remarks, GuestDocumentID, RoomNumber, PaymentModelID)

Booking - The Booking table will store the information of the booking, which includes the room number, the customer, and its booking details.

* underlined = Foreign Key

* **Bold** = Primary Key

**Temasek Polytechnic
School of Informatics and IT**

Diploma in Information Technology (IT)

Team/Peer Evaluation

Project Title: Delonix Regia Hotel Management System	
Student No: 1605326F	Student Name: Law Jun Wei

Rate the overall team performance against each criterion. Circle one number from 1 (inadequate) to 5 (superior)					
Team spirit	1	2	3	4	5
Overall effectiveness	1	2	3	4	5
Rewarding experience	1	2	3	4	5
Team productivity	1	2	3	4	5
Process quality	1	2	3	4	5
Product quality	1	2	3	4	5

Rate the contribution of each team member (including yourself). Circle one number from 1 (inadequate) to 5 (superior)					
Myself	1	2	3	4	5
<Gooi Chong Yen>	1	2	3	4	5
<Kek Carmen>	1	2	3	4	5

Rate the quality of work (including timeliness) of each team member (including yourself). Circle one number from 1 (inadequate) to 5 (superior)					
Myself	1	2	3	4	5
<Gooi Chong Yen>	1	2	3	4	5
<Kek Carmen>	1	2	3	4	5

Rate the help and support you have received from each team member. For yourself, rate the support and help you have given to other team members. Circle one number from 1 (inadequate) to 5 (superior)					
Myself	1	2	3	4	5
<Gooi Chong Yen>	1	2	3	4	5
<Kek Carmen>	1	2	3	4	5

Signature:



Date: 21/11/17

Temasek Polytechnic School of Informatics and IT

Diploma in Information Technology (IT)

Team/Peer Evaluation

Project Title: Delonix Regia Hotel Management System	
Student No: 1601634G	Student Name: Kek Carmen

Rate the overall team performance against each criterion. Circle one number from 1 (inadequate) to 5 (superior)					
Team spirit	1	2	3	4	5
Overall effectiveness	1	2	3	4	5
Rewarding experience	1	2	3	4	5
Team productivity	1	2	3	4	5
Process quality	1	2	3	4	5
Product quality	1	2	3	4	5

Rate the contribution of each team member (including yourself). Circle one number from 1 (inadequate) to 5 (superior)					
Myself	1	2	3	4	5
<Gooi Chong Yen>	1	2	3	4	5
<Law Jun Wei>	1	2	3	4	5

Rate the quality of work (including timeliness) of each team member (including yourself). Circle one number from 1 (inadequate) to 5 (superior)					
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<Law Jun Wei>	1	2	3	4	5

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<Gooi Chong Yen>	1	2	3	4	5
<Law Jun Wei>	1	2	3	4	5

Signature:



Date: 21/11/17

Temasek Polytechnic School of Informatics and IT

Diploma in Information Technology (IT)

Team/Peer Evaluation

Project Title: Delonix Regia Hotel Management System	
Student No: 1603304E	Student Name: Gooi Chong Yen

Rate the overall team performance against each criterion. Circle one number from 1 (inadequate) to 5 (superior)					
Team spirit	1	2	3	4	5
Overall effectiveness	1	2	3	4	5
Rewarding experience	1	2	3	4	5
Team productivity	1	2	3	4	5
Process quality	1	2	3	4	5
Product quality	1	2	3	4	5

Rate the contribution of each team member (including yourself). Circle one number from 1 (inadequate) to 5 (superior)					
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<Kek Carmen>	1	2	3	4	5

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Signature:



Date: 21/11/17