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| **Student Konnect Template Deliverable** |
| ***Student Konnect project*** |
| ***Customer: Valarie Jongwe Manager : Joy Nonyane*** |

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| --- |
| **Group members : Tertius Kgatla, Perline Meyeni, Tebogo Chikane** |

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# 1. REQUIREMENT SPECIFICATION

## 1.1 PURPOSE

This document will describe the Student Konnect system and user requirements as required by the customer >>>>>>>>>>>. The system is being developed to help secondary students with their subjects, acting as a study guide and step by step example for practical work. The advantage will be not to limit the program to one school but also have it run online where teachers can also edit the information and all schools using it will have access to the vast amount of information stored already having questions and answers, in return making it easy to make questions for testes and exams.

### 1.1.1 SCOPE

There are two software products as a client server system – the student Konnect web application and the Database. The web interface interacts with teachers for updating student records, creating or updating any theory and practical works as approved by others and being able to quickly create tests and exams based on the work done for that term. Students will register on the site and explorer all material for their specific subjects and in turn teachers can see how often a student accesses the study material and also view any completed online activities. Constraints will be implemented depending on the subjects being taught for teachers. Both desktop application and web application will interact with the database where all the information will be stored in the database. Queries will enable analysis of the application results and these results will aid analysts (Curriculum Implementers and Outreach) to perform their jobs much quicker when they check on schools systems being followed.

### 1.1.2 PRODUCT PERSPECTIVE

The product will be a web based interface which will interact with applications created for it. There might be a possible interaction with a system already in place depending on how well the two go hand in hand if showing any improvements.

## 1.2 SYSTEM CAPABILITIES

### 1.2.1 ACT AS A STUDY GUIDE

Allow the staff to interact with the system and make a reservation for a room, at this time the personal details of that particular person will be entered on the system. Information about the period of stay, booking and grading type must be entered with after the details.

### 1.2.2 HOLD STUDENT ACCESS RECORDS ON THE SYSTEM

The system must calculate the end costs of the client this includes the number of times they used room service, telephone calls, meal bookings and damages. Combinations and packages for longer stays, group booking and clients who book most often must receive discounts.

### 1.2.3 RANK GRADES FOR TERTIARY APPLICATIONS

Statistical information on room usage, customer type, booking type, and staff pattern should be stored and maintained.

### 1.2.4 ADD AND AMEND QUESTIONS

The system must use statistical information to produce a timetable for staff members as to know when additional staff members are needed.

### 1.2.5 FORMULATE TEST AND EXAMS

### 1.2.6 SHOW ACTIVE USERS

### 1.2.7 REGISTER STUDENTS

### 1.2.8 PULL REPORT FOR CI’s

## 1.3 SYSTEM RULES (BR)

### 1.3.1 TEACHER RULES

A 10% non-refundable deposit for single bookings and 20% amount for group bookings must be paid when making a booking.

### 1.3.2 STUDENT RULES

### 1.3.3

## 1.4 SYSTEM REQUIREMENTS (B)

### 1.4.1 TO HAVE AN AUTOMATED QUICK ACCESS EDUCATION SYSTEM

The business objective is to replace their paper base system to an efficient automated, less prone for errors system. The system must automate costs, adverts, staff levels, meal booking, and reservations.

### 1.4.2 MONITOR SCHOOL GRADE, STUDENTS AND TEACHER PERFORMANCE

Monitoring the cash in and out of the business as to be able to analyse expenses and find efficient ways to reduce cost and maintain quality.

### 1.4.3 BETTER STUDENT AND TEACHER MANAGEMENT

Level of staff required must correspond to the level of reservation, these levels must be done by the system and a time table which must automatically be updated must be produced at the end of each day.

### 1.4.4 SAVE PAPER WORK AND BOOKS

The paper based system required space to save all yearly information, minimize the space in order to have better utilisation of it.

### 1.4.5 UP SKILL STUDENTS AND TEACHER MEMBERS

This approach will require the staff members to be trained for computer skills, up skilling staff members operating the system for bookings.

### 1.4.6 SPEED UP SERVICES

The paper based system that was in use was insufficient as orders and bookings within the hotel had long lead times between them. The new system must decrease this time by sequentially managing meal orders and bookings.

### 1.4.7 IMPROVE BUSINESS REPUTATION

Improve the business’s image by having a well designed system that will keep every customer happy and not to have any reservation complains.

# 2. SCOPE MANAGEMENT APPROACH

## 2.1 Scope Definition

## 2.2 PROJECT SCOPE STATEMENT

### 

### 2.2.1 Deliverables of this project are:

### 

### 2.2.2. Exclusions from this project include:

### 2.2.3. Constraints for this project include:

### 

### 2.2.4. Assumptions for this project are:

# 

# 3. SCOPE CONTROL

# 4. CHANGE MANAGEMENT PROCESS

# 

# 5. QUALITY MANAGEMENT PLAN

## 

## 5.1 QUALITY BASELINE

# 6. PROJECT PLAN

## 6.1 MEETING SCHEDULE



|  |  |  |  |
| --- | --- | --- | --- |
| Team Meeting | Sponsor Meeting | PM & Director Meeting | Public Holiday |

Table 1: Meeting Schedule

## 6.2 WORK BREAKDOWN STRUCTURE

GUI design

Class Diagram

Activity diagram

Use case

Mapping

Normalization

Approve Charter

Project Charter

Requirements specification

Information gathering

**Initiation Phase**

**Planning Phase**

**Execution Phase**

**Control Phase**

**Closing**

**MOON STAR HOTEL SYSTEM**

ERD design

Risk management plan

Cost management plan

Communication Plan

Scheduling

Project Scope

Transfer plan

Performance Report

Risk Management

Monitoring Project

Cost Control

User training

System presentation

Documentation

System prototyping

Integration testing

Application coding

Database coding

Scope Verification

Contracts closed

Release project team

Archive Documents

Project debriefing

Approve Deliverables

Support

Figure 1: Top-Down Model

## 6.3 GANTT CHART

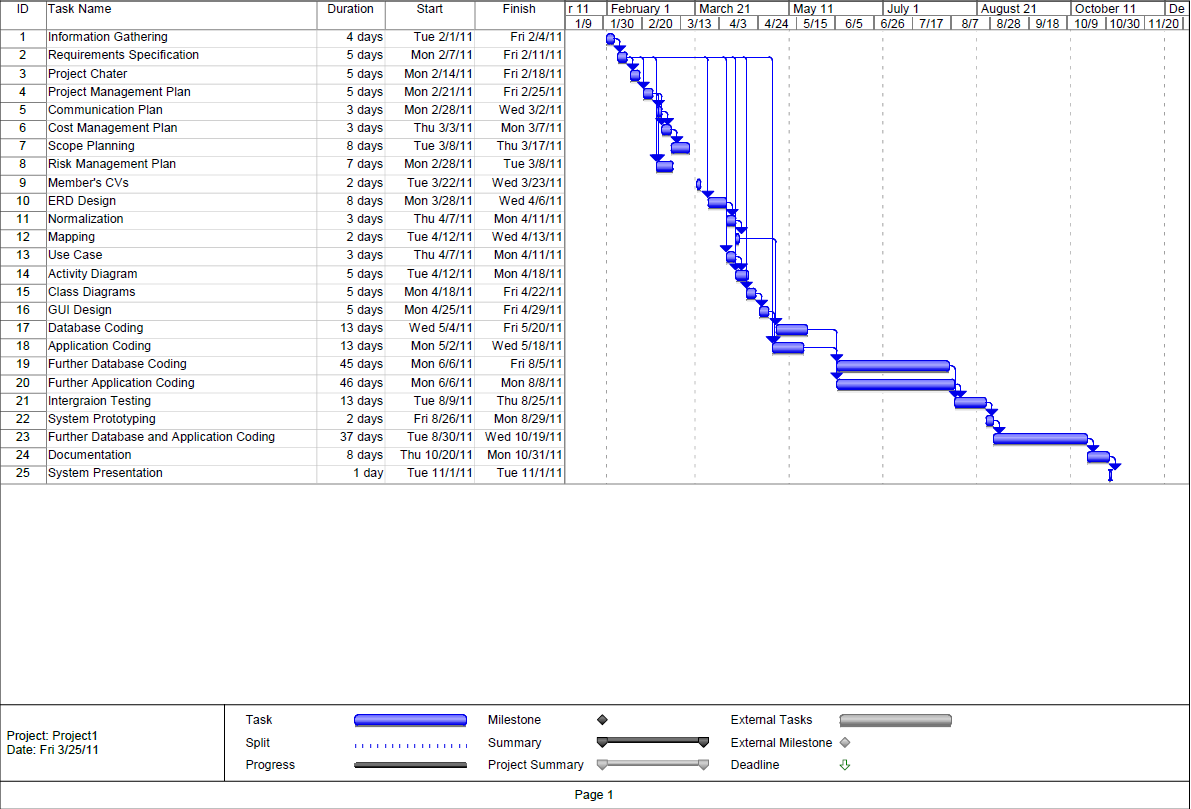


Figure 2: Gantt chart

## 6.4 COMMUNICATION PLAN

The following table defines the various roles and their responsibilities throughout the entire project.

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Table 2: Define the Responsibilities

### 

### 6.4.1 PROJECT TEAM DIRECTORY

|  |  |  |  |
| --- | --- | --- | --- |
| **ROLE** | **NAME** | **EMAIL** | **PHONE** |
| Project sponsor |  |  |  |
| Project manager |  |  |  |
| Project director |  |  |  |
| Project leader |  |  |  |
| Customer |  |  |  |
| Project team |  |  |  |
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Table 3 : Team directory

### 

### 6.4.2 COMMUNICATION VEHICLES AND OBJECTIVES

The following will be used for the driving of the project e-mails, Meetings, Reports, Formal or informal meetings. This communication must ensure timely communication to individuals; ensure effective communication between the groups and Ensure timely notices for requirements/meetings

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Communication type** | **Objective of communication** | **Medium** | **Frequency** | **Audience** |
| Kick off meeting | Introduce the project team and the project | Face to face | Once | Project team  Project sponsor |
| Project team meeting | Outline the requirement specification | Face to face | Once | Project team |
| Project team meeting | Meeting the customer to discuss the requirements | Meeting | Once  In 3 Weeks | Project team  Project sponsor |
| Project team meeting | Assigning each member a task to do in the project plan | Meeting | Weekly  Daily | Project Team |
| Project status | Inform about the progress of every member's task | Face to face  email | Daily | Project team |
| Project status | Inform the project manager about the progress of the project | Meeting | weekly | Project team project manger |

Table 4: Communication plan list within this document

### 6.4.3 Communication channels

# 7. PROJECT COSTS

The cost of the Moon star project had been monitored monthly, where necessary the project team were asked by the project manager to provide any progress that the Moon Star project has been in at that time. Report formats of the moon Star project has been presented to the Project Sponsor to over see if the proposed things in the report format were feasible in way that money can be taken from the total budget offered by project sponsor.

## 7.1 COSTING

### 7.1.1 Emergency Money

These are the costs that have been reserved for an unexpected problem that might require money immediately.

### 7.1.2 Personal

This was the reserved money for beverages when needed by the team for any team building.

### 7.1.3 Equipment

All costs which has been used to buy equipment. This included equipment such as Hardware and software, operating system, cables and any other familiar tools.

### 7.1.4 Hidden Costs

Costs such as water and electricity (Rent), which are not included with the making of the project

### 7.1.5 Maintenance

Damage to equipment within the project and maintenance of the system

### 7.1.6 Communication and Research

These are the costs for phone connection and internet which had been useful in helping the group members to communicate through calls and emails and internet connection.

## 7.2 COST BREAK-DOWN STRUCTURE

Figure 3 shows categories of the costs from the project showings exactly which items will require financing.

**Costing**

**Emergency Money**

**Equipment**

**Hidden Costs**

**Personal**

**Maintenance**

**Communication and Research**

Rent (water + Electricity)

Documentation Papers

Software

Lab Preparation

Equipment Damages

Beverage

Training

Internet Rental

Research

Calls

Software Downloads

Figure 3: Cost Break-Down Structure

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Table 5 : Cost Assumptions

# 8. RISK MANAGEMENT PLAN

# 8.1 PURPOSE

The purpose of the risk management plan was to help minimise the negative impact which negative factors can have on the project with special focus on prioritising particular situations and mitigating them as soon as possible or avoiding them from materialising. The plan also serves as a template to help guide the project team in difficult situations and provide a basic understanding of the risks involved in the project and how to react when they arise.

## 8.2 TOP THREE RISKS

### 8.2.1 RISK ASSESSMENT AND MANAGEMENT TABLE

This table will identify a Risk type, and then give a short description of the risk. After a risk has been identified the risk will receive a Chance of occurrence, the Risks impact on the project, the risk priority to be dealt with and the person responsible for mitigating or managing the risk based on one of three levels:

* Medium – There is a 50/50 Chance for materialising and will most likely occur.
* High – Will most probably occur without doubt.

## 

### 8.2.2 RISK IDENTIFICATION

The following table identified risks and what impact they had on the project and who was responsible for them.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Risk & Risk ID** | **Description** | **Risk chance** | **Risk Impact On project** | **Risk Priority** | **Risk Owner** |
| 1 -Software development Risk | Project team members not trained well enough | High | High | High | Project Manager |
| 2 - Communication Risk | Facilities not available for meetings | Medium | High | Medium | Team Leader |
| 3 - Attendance and workload Risk | Team members that gets sick or injured | Medium | High | High | Team Leader |
| 4 -Scope Risk | Scope creep due to requirement changes | Medium | High | Medium | Team Leader & Project Manager |
| 5 - Schedule Risk | Milestones not reached | High | High | High | Team Leader |
| 6 - Internet Availability Risk | Not all team members has Internet at their disposal | High | Medium | Low | Project Manager |
| 7 - Budget risk | Project that runs over budget because of poor planning | Medium | High | Medium | Team Leader |
| 8 - Marketing Risk | Improper marketing strategy | Low | High | Medium | Project Team |
| 9 - Lack of team work risk | With holidays team members might contribute to scope creep | High | High | Medium | Team Leader |
| 10 - Load Shedding | Strategic power cuts to save power | Low | Medium | Low | Project Manager |
| 11 - Requirements Risk | Requirements not fully understood | Medium | High | High | Team Leader |
| 12 - Standard Risk | The project does not conform to industry standards for hotels | Low | High | Medium | Team Leader |
| 13 - Progress risk | No Plan B in action when a problem occurs | Medium | Medium | Medium | Team Leader |
| 14 - Quality | Not meeting quality due to other workloads (Exams and assignments in other courses) | High | High | High | Project Manager |

Table 6 : Risk Identification

### 8.2.3 RISK TYPE AND EFFECTS

**The following table will identify the risk types and effect each risk has on the project.**

|  |  |  |
| --- | --- | --- |
| **Risk ID** | **Risk Type** | **Affects** |
| 1 | People | Project |
| 2 | Organisational | Project |
| 3 | People | Project |
| 4 | Requirements | Product |
| 5 | Estimation | Project |
| 6 | Technology | Project |
| 7 | Estimation | Project |
| 8 | Tools | Product and Business |
| 9 | People | Project |
| 10 | Technology | Project |
| 11 | Requirements | Product |
| 12 | Tools | Product |
| 13 | Tools | Project |
| 14 | Requirements | Product |

Table 7 : Risk effect

### 8.2.4 RISK PLANNING

|  |  |
| --- | --- |
| **Risk ID** | **Strategy** |
| 1 | Hold additional workshops and put in more time for up skilling. |
| 2 | Book facilities in advance to make sure that there is room for the project team. |
| 3 | Spread the workload between the team. |
| 4 | Include the client more with development. |
| 5 | Brief every member about progress in weekly meetings. |
| 6 | Try to book the resource lab in advance to utilise internet. |
| 7 | Get expert advice when planning to ensure estimations are accurate. |
| 8 | Do research and surveys with the marketing to see how clients react to it. |
| 9 | Organise a few meetings in holidays to make sure all the work are meeting the requirements. |
| 10 | Try to utilise internet cafes even if there will be extra costs. |
| 11 | Get expert advice and help when breaking down requirements. |
| 12 | Visit real hotels to see how standards are being met. |
| 13 | Develop additional plans for risks |
| 14 | Plan ahead and make sure that time is being utilised efficiently as this will help to get the project done on schedule with good quality and still have time for our course duties. |

Table 8 : Risk Planning

### 8.2.5 CONTINGENCY PLAN

The following table will highlight what will be done in the case of risks materialising.

|  |  |
| --- | --- |
| **Risk ID** | **Action to be Taken** |
| 1 | Work in extra hours for necessary up skilling. |
| 2 | Look why facilities were not available and plan to avoid the situation in the future and try to locate an outside facility for emergencies. |
| 3 | Spread the work load and also give the affected member additional work when he/she recovers. |
| 4 | Meet with the client and experts to make sure that requirements are fully understood. |
| 5 | Plan the remaining schedule of tasks more efficiently and place extra focus on the schedule in weekly meetings. |
| 6 | Ask team members that have got internet access to facilitate those who don’t. |
| 7 | Make budget cuts which might affect quality or remove any unnecessary features. |
| 8 | Brain storm with new marketing ideas and get expert opinion and also implement rapid marketing strategies. |
| 9 | Organise additional meetings to discuss and piece together work. |
| 10 | Do paper work |
| 11 | Organise meetings with the client to make sure that the project scope is well defined. |
| 12 | Re evaluates industry standards and draw up policies to meet these standards. |
| 13 | Draw up additional plans after a risk has materialised. |
| 14 | Put in additional work hours on the project to focus on quality. |

Table 9 : Contingency Plan

# 9. SYSTEM DESIGN

## 9.1 DATA FLOW

The simple diagram below shows how information flows within the system, there are two applications the user’s application and server’s application. From the simple diagram we can see that only the server application can access the information in the database and for the user application to work the server must be running in order for the user communicate with the database which is done using the server.

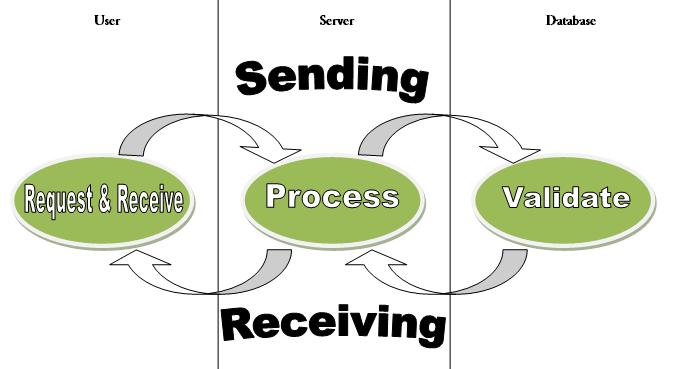


Figure 4 : Simple Data Flow Diagram

Figure 5 in page 23 conceptualize the data model representing the business information requirements that the system database server will be using. The ERD will be tested using a normalization technique which will determine how each of the entities relate to one another and how they access information through using these relationship identities (foreign keys). From Normalization the output of this technique is a 3RD Normal ERD figure shown on page 28 which will be the most accurate diagram to use.