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| **Student Konnect Template Deliverable** |
| ***Student Konnect project*** |
| ***Customer: Manager :*** |

|  |
| --- |
| **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 student but also have it run online where teachers are able to post lessons plan, store marks and interact with other teachers. This gives all students and teachers access to a pool of information containing 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 and students for updating 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. The web application will interact with the database where all information is stored. With the use of a database (Curriculum Implementers) will also have the advantage of being able to quickly process teachers and student results when checking up on all schools that will have the system in place.

### 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

The system will host study material for each grade, students can find all guides for subjects including additional posted information by other students. Host some quiz that students will need to answer.

### 1.2.2 STUDENT AND TEACHER ACCESS

It must be mandatory for all grade 10 students to be registered on the system based on the subjects selected by them, managing the displayed content for the student based on selections and allowing teachers to keep track how often the students access the system and how many of the quizzes have been done. Teachers will also be able to update their annual assessment yearly planning, continuous assessments and recordings.

### PARENTAL/GUARDIAN ACCESS

Parents or guardians will also have access to the system receiving latest updates from the school and see the progress of their student.

### 1.2.3 RANK GRADES

An advantage for all students to have access to their grades anytime and be able to check their progress, manage how they can improve on their results

### 1.2.4 CHANGE QUESTIONS AND FORMULATE TESTS

Teacher will be able to add and make changes to questions based on their studies; in turn these posts will also be accessible to all other teachers. These questions can be used to test students and give them a wider understanding of the subject.

### 1.2.7 PULL REPORT

Built with simplicity in mind the system will also pull reports allowing more focus on subjects that students are doing poor on, continuous assessment(work from jan to dec) recodings(mark for activities) lesson planning(how far is the work progress) annual assessment year plan(dates of all the work done)????

## 1.3 SYSTEM RULES (BR)

### 1.3.1 TEACHER RULES

Teachers can only access the subjects that they teach; changes to students regarding the subjects can only be made by the specific teacher, unless access is given to another teacher when the main teacher is unavailable for specific reasons. Changes can be made to the subject contents on specific pages which are additional to the original contents.

### 1.3.2 STUDENT RULES

Students only have access to the subjects selected, students only view their marks and progress, no student can make changes to subject content. Students

### 1.3.3 PARENTAL / GAURDIAN RULES

Have only access to view the student’s progress marks and reports, show any update from the school.

## 1.4 SYSTEM REQUIREMENTS (B)

### 1.4.1 TO HAVE A SYSTEMATIC QUICK ACCESS EDUCATION SYSTEM

The main objective is to a new system efficiently automated, to guide all students, teachers and curriculum invigilators quicker and errorless with their work and objectives.

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

With progress updates, classes, subjects and schools doing poorly can be checked and monitored, proper measures to up skill or update can be taken based on findings for the cause.

### 1.4.4 SAVE PAPER WORK AND BOOKS

Paper work often goes missing, but if there is a backup on a system copies can be made. There is a even bigger limit towards paperwork if teachers are able to work directly on the system. Saving costs on paper work

### 1.4.5 UP SKILL STUDENTS AND TEACHER MEMBERS

This approach will require teachers to be trained for computer skills and how to use the program. Guided by teachers students can learn how the system works and how to see all work.

### 1.4.6 SPEED UP SERVICES

The system is to speed up services like calculations for student markings, access to study material for students, access to yearly planning, progress information and being able to analyse and monitor.

# 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

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**

**STUDENT-KONNECT 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

Personal Computers

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.

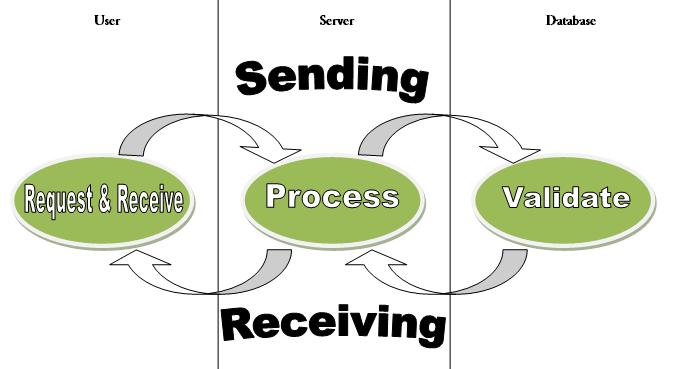


Figure 4 : Simple Data Flow Diagram

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.