

QsARC:  
An accreditation Software for UTB

Software Design Document

Version 1.0

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## Revision History

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# 1. Introduction

## 1.1 Purpose

The purpose of this Software Design Document is to describe the implementation for the QsARC, an accreditation Software for UTB. The QsARC software will generate reports based on user queries. The reports will encompass complete information on the University including colleges, departments, programs and courses. This system will be designed to automate the process of accreditation, which will otherwise take longer and require a more complex process.

## 1.2 Scope

This document describes the implementation details of the QsARC software system. This system will be designed to automate the process of accreditation.

More specifically, the software will consist of three parts; the first one will be a user interface to allow for data entry (Insert Data), a second one will provide a simple GUI interface to allow the user to navigate all the way from the University level to the program level (View Data) and third it will allow the generation of the accreditation report (Generate Reports). This document will not include testing details yet as it is not a complete product at the moment. More information will be added to this document as it becomes available.

## 1.3 Definitions, Acronyms, and Abbreviations

Term	Definition
SDD	Software Design Document
QsARC	Academic Repository for Curriculum Accreditation
GUI	graphical user interface
X-Ref tables	A cross reference table is a database table that links records together

## 1.4 References

*sdd\_template.pdf*. Based upon the IEEE Recommended Practice for Software Design Descriptions. (IEEE Std. 1016-1998).

## 1.5 Overview

The SDD contains the details of the implementation for the QsARC application. It provides all the detailed functionality and characteristics of the software.

# 2. System Overview

The customer has requested the development of a software application that will allow them to create reports for accreditation purposes. This system should be capable of querying the database with user specific parameters. Furthermore, it should be capable of entering all the information required to populate such database.

## **2.2 Class Structure**

The QsARC application is designed to be as simple as possible. There are several classes to accomplish this:

**2.2.1 College-** A class that holds all data required for a single college

**2.2.2 Department-** A class that holds all data required for a single department

**2.2.3 Programs-** A class that holds all data required for a single program

**2.2.4 Course-** A class that holds all data required for a single course

## **3. System Architecture**

### **3.1 Architectural Design**

#### **3.1.1 Software Interfaces**

QsARC database:

- The database shall contain all the tables about the University's Colleges, departments and courses as well as all necessary X-Ref tables.
- The software will have access to the database to:
  - Read
  - Insert
  - Update
  - Delete

#### **3.1.2 Communications Interfaces**

E-mail provider to send reports.

### **3.2 Decomposition Description**

#### **3.2.1 Data Entry**

##### **3.2.1.1 Introduction**

Every department shall be able to enter their own information under their corresponding College.

A TreeView will be displayed for users to be able to navigate through the hierarchy.

A form/s will be provided to input all information. Users will be able to add new items under their department as well as updating the existing ones.

##### **3.2.1.2 Inputs**

- Enter the mission and the vision of the College
- Enter the mission and the vision of the department
- Enter the Department faculty information
  - Number of faculty
  - Personal/academic Information of each faculty
  - CV file for each faculty
- Enter the number of programs offered by the department
- For each Program
  - Program information

- Name of the program
- Degree offered
- Labs
- Equipment
- Student statistics
  - Number of students in the program
  - Rank of the students
  - Gender of the students
  - Ethnic make-up
  - Ages
  - Etc.
- Student learning outcomes
- POS- Program of study
  - Administrator of Program
  - Course-to-learning outcomes map
  - Courses required for the program
  - For each course:
    - Syllabus for each course
    - Course learning outcomes
    - Collected artifact for each outcome

#### 3.2.1.3 Processing

A save button will be available to save to the database.

#### 3.2.1.4 Outputs

The TreeView will be refreshed to reflect the changes.

#### 3.2.1.5 Error Handling

No duplicates will be allowed for Departments or Programs

### 3.2.2 Generate Report

#### 3.2.2.1 Introduction

Users will be able to generate, view and e-mail reports. They will use the same TreeView to navigate through the hierarchy to obtain the desired report.

#### 3.2.2.2 Inputs

ID of the selected TreeView node as well as the node Type.

#### 3.2.2.3 Processing

Program will then communicate with the database to pass both parameters to a “select” query/stored procedure.

#### 3.2.2.4 Outputs

The result of the query/stored procedure. All information regarding the selected TreeView node.

#### 3.2.2.5 Error Handling

Make sure that the query/stored procedure does not time out.

### 3.3 Design Rationale

- College
- Department

- Program
- Course

## **4. Data Design**

### **4.1 Data Description**

### **4.2 Data Dictionary**

## **5. Component Design**

## **6. Human Interface Design**

### **6.1 Overview of User Interface**

### **6.2 Screen Images**

### **6.3 Screen Objects and Actions**

## **7. Project Timeline**