**SYSTEM DESIGN DOCUMENT**

For

**Electronic Examination Marking (E-Marker)**

Prepared By

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* 1. **Introduction**

The System Design Document describes the system requirements, operating environment, system and subsystem architecture, files, input formats, output layouts, human-machine interfaces, detailed design, processing logic, and external interfaces. This document will be produced with a brief description of the Electronic Examination Marking system.

* 1. **System Design Overview**

Electronic Examination Marking (E-marker) is an application which allows user to scan exam result sheet and student answer sheets. The application will process the comparison between result sheet and student answer sheets and calculates total mark of the students. The following displays show the structure of E-marker application.

**3.3 Application Design Detail**

**3.3.1 Table Structure**

i. Table Name: Student

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Field Name** | **Data Type** | **Field Size** | **Constraints** | **Description** |
| Student\_ID | Varchar2 | 8 | Contain 1 letter | Primary Key |
| Student\_Name | Character | 30 | Not Null |  |
| Section | Number | 2 | Not Null |  |
| Total\_mark | Number | 3 |  |  |
| Student\_ Sheet | Image | 100 |  |  |
| Exam\_ID | Number | 4 | Not Null | Foreign Key |
| Teacher\_ID | Number | 4 | Not Null | Foreign Key |

ii. Table Name: Teacher

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Field Name** | **Data Type** | **Field Size** | **Constraints** | **Description** |
| Teacher\_ID | Number | 4 | Not Null | Primary Key |
| Username | Character | 30 | Not Null |  |
| Password | Number | 10 | Not Null |  |

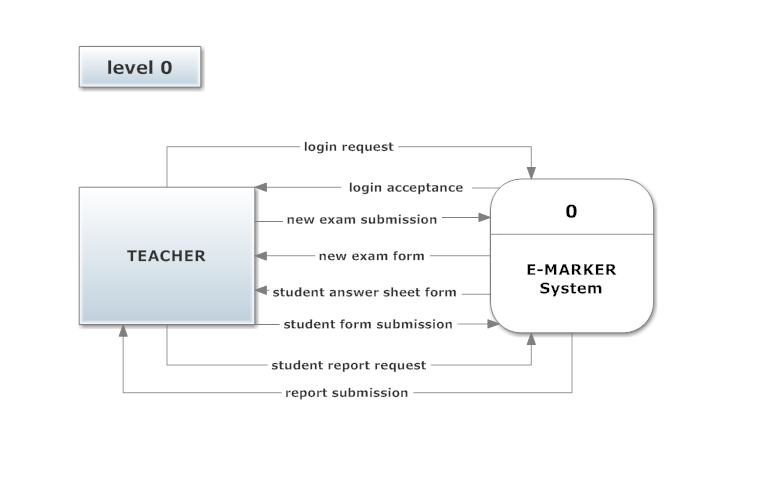
iii. Table Name: Exam

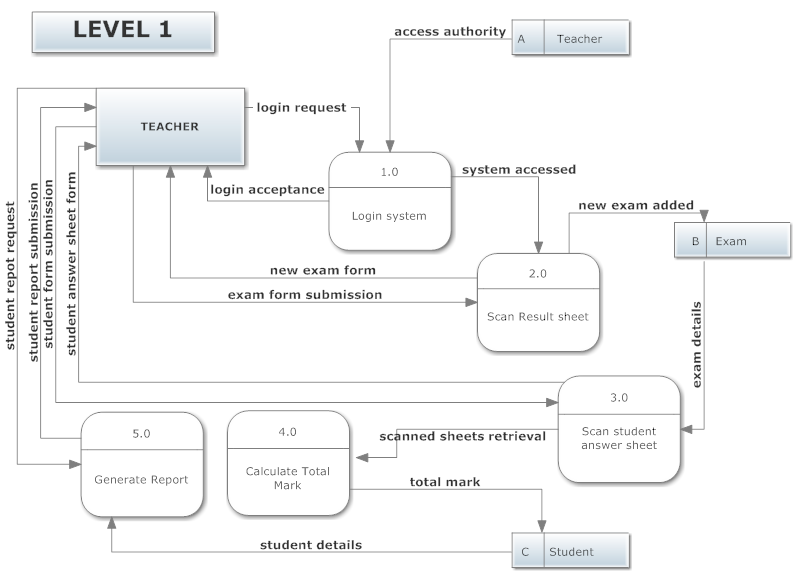
|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Field Name** | **Data Type** | **Field Size** | **Constraints** | **Description** |
| Exam\_ID | Number | 4 | Not null | Primary Key |
| Exam\_name | Varchar2 | 10 |  |  |
| Exam\_Date | Date | 10 | dd-mm-yyyy |  |
| Subject\_name | Varchar2 | 20 |  |  |
| Result\_Sheet | Image |  |  |  |
| Teacher\_ID | Number | 4 | Not Null | Foreign Key |

|  |  |  |
| --- | --- | --- |
| **0NF** | **1NF** | **2NF** |
| Student\_ID @  Student\_Name  Section  Total\_mark  Student\_Sheet  ( Exam\_ID  Exam\_name  Exam\_Date  Subject\_name  Result\_Sheet  Teacher\_ID  Username  Password )\* | **Student** | **Student** |
| Student\_ID @  Student\_Name  Section  Total\_mark  Student\_Sheet  Exam\_ID ! | Student ID @  Student Name  Section  Total Result  Student Answer Sheet  Exam ID !  Teacher\_ID ! |
| **Teacher** |
| Teacher\_ID@  Username  password |
|
|
| **Exam** | **Exam** |
| Exam\_ID @  Exam\_name  Exam\_Date  Subject\_name  Result\_Sheet  Teacher\_ID  Username  password | Exam\_ID @  Exam\_name  Exam\_Date  Subject\_name  Result\_Sheet  Teacher\_ID ! |

**3.3.2 Normalized Table Layouts**

**3.3.3 Data Flow Diagrams**





**3.3.4 Entity – Relationships**

