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1.   PURPOSE & SCOPE

To develop a Student Report defining the Department Dimension Table, Student Dimension Table, Marks Fact Table, Subject Average Aggregate Table, Subject Pass Percentage Aggregate Table.

The purpose of this report is to systematically capture the requirements for the 'Student Report' project and the same system to be developed. Functional requirements of this system are captured in this document. It also serves as the input for the project scoping.
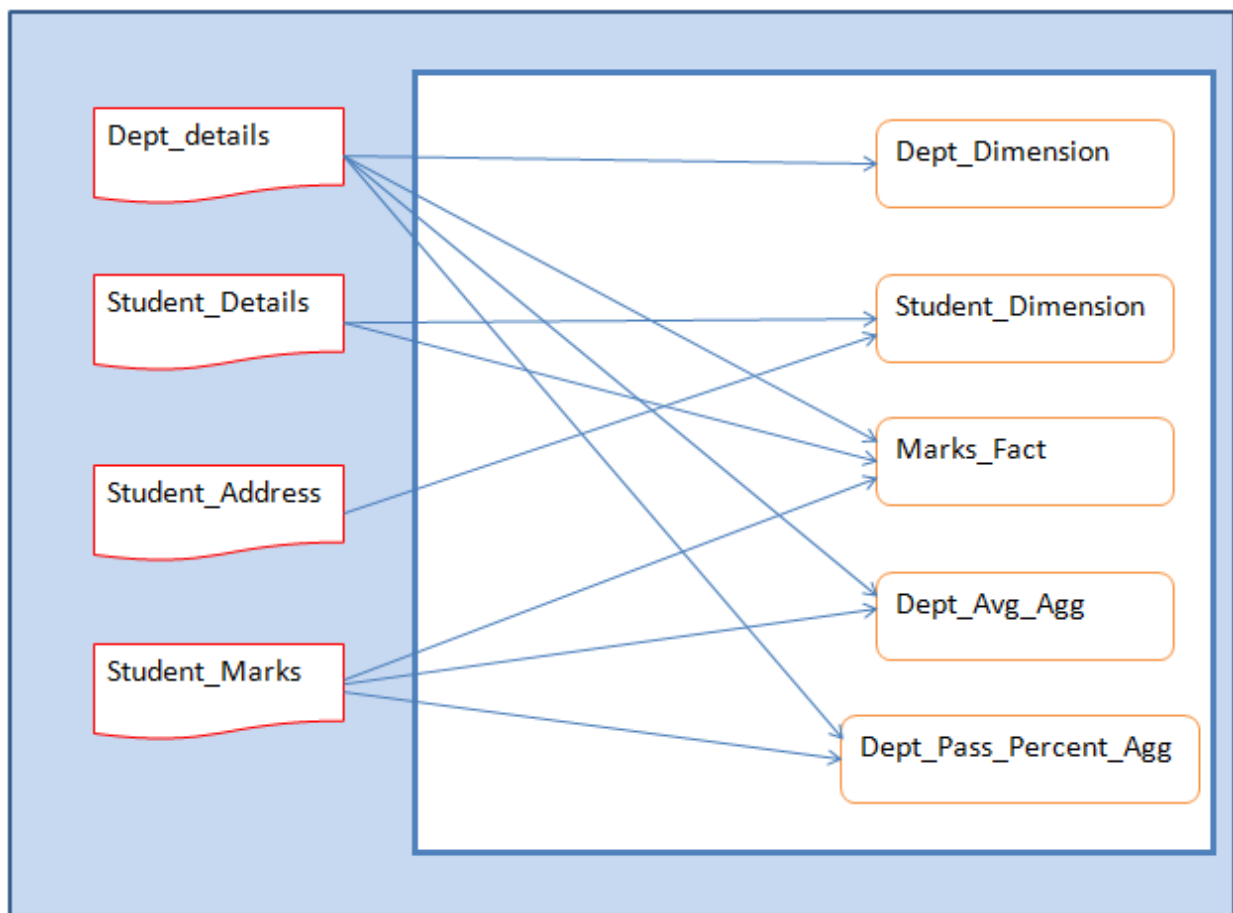
The motivation behind the undertaking is to assemble an information stockroom according to the necessities of the organisation utilizing Informatica Power Center ETL instrument. In the Student Report System, we are intending to assemble a Data warehouse to help the organisation to have better choices.

 The scope of this document is limited to addressing the requirements from a user, quality, and non-functional perspective. It is recommended that design aspects are not added in this document
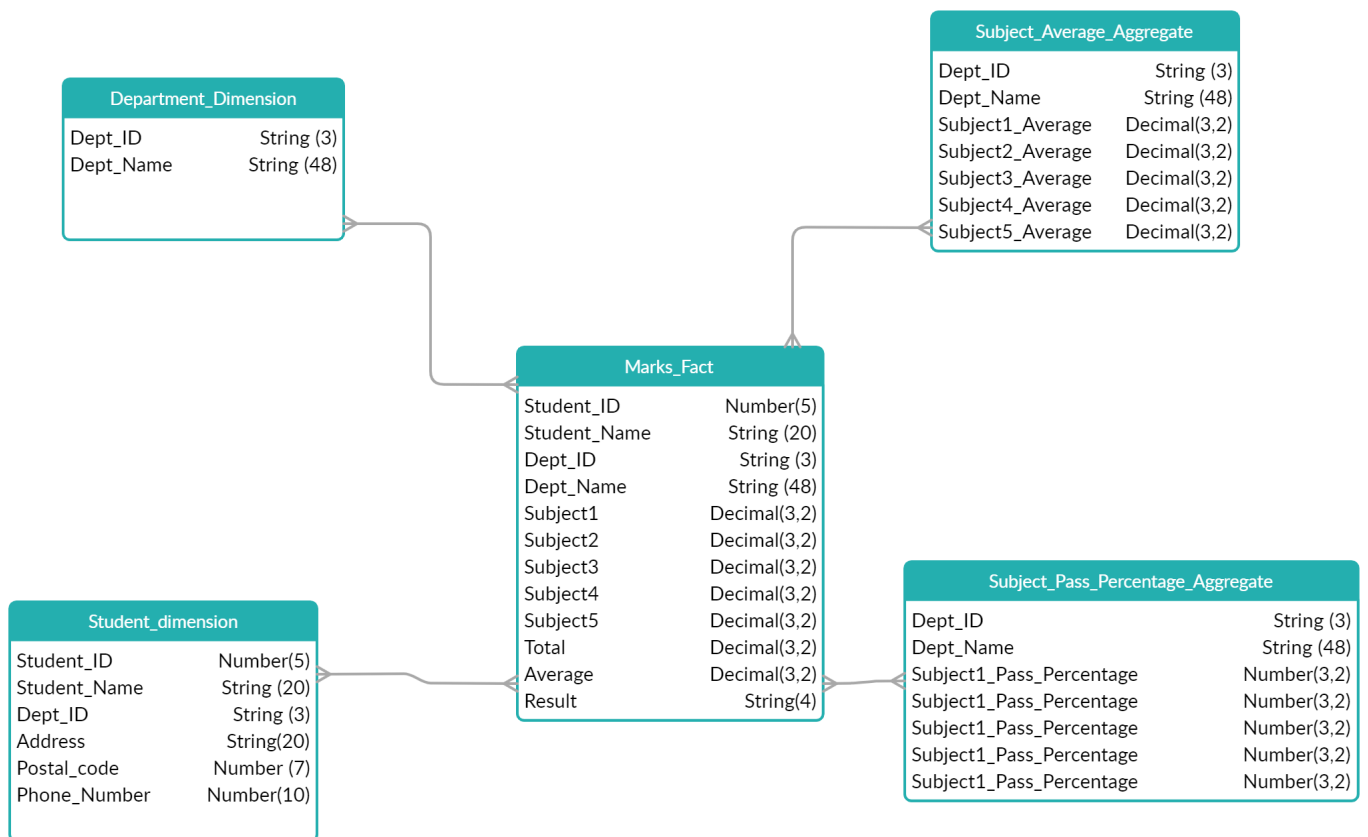
2. **ASSUMPTIONS :**

- All source files will be available in specified format
- Target database will be available to create Data Warehouse tables
- Informatica server will be able to connect to Data Warehouse database
- The system will not be available if there are any outages to Data Warehouse Database

3. FLOW DIAGRAM

4. ENTITY RELATIONSHIP DIAGRAM

Subject_Average_Aggregate

Dept_ID	String (3)
Dept_Name	String (48)
Subject1_Average	Decimal(3,2)
Subject2_Average	Decimal(3,2)
Subject3_Average	Decimal(3,2)
Subject4_Average	Decimal(3,2)
Subject5_Average	Decimal(3,2)

Department_Dimension

Dept_ID	String (3)
Dept_Name	String (48)

Marks_Fact

Student_ID	Number(5)
Student_Name	String (20)
Dept_ID	String (3)
Dept_Name	String (48)
Subject1	Decimal(3,2)
Subject2	Decimal(3,2)
Subject3	Decimal(3,2)
Subject4	Decimal(3,2)
Subject5	Decimal(3,2)
Total	Decimal(3,2)
Average	Decimal(3,2)
Result	String(4)

Subject_Pass_Percentage_Aggregate

Dept_ID	String (3)
Dept_Name	String (48)
Subject1_Pass_Percentage	Number(3,2)
Subject1_Pass_Percentage	Number(3,2)
Subject1_Pass_Percentage	Number(3,2)
Subject1_Pass_Percentage	Number(3,2)
Subject1_Pass_Percentage	Number(3,2)

Student_dimension

Student_ID	Number(5)
Student_Name	String (20)
Dept_ID	String (3)
Address	String(20)
Postal_code	Number (7)
Phone_Number	Number(10)

5. **DATA SOURCES**

1. **Student_Details**

Field Names	Datatype
Student_ID	Number(5)
Student_name	String (20)
Dept_code	String(3)

2. **Student_Marks**

Field Names	Datatype
Student_ID	Number(5)
ROLL	Number(6)
Mark1	Number(3)
Mark2	Number(3)
Mark3	Number(3)
Mark4	Number(3)
Mark5	Number(3)

3. **Student_Address**

Field Names	Datatype
Student_ID	Number(5)
Address	String (20)
Postal_code	String(7)
Phone_Number	String(10)

4. Dept_Details

Field Names	Datatype
Dept_code	String (3)
Dept_Name	String (48)

6. TARGET TABLES

1.Department Dimension Table

Field Names	Datatype
Dept_code	String (3)
Dept_Name	String (48)

2. Student Dimension Table

Field Names	Datatype
Student_ID	Number(5)
Student_Name	String (20)
Dept_ID	String (3)

Address	String(20)
Postal_code	String(7)
Phone_Number	String(10)

3. Marks Fact Table

Field Names	Datatype
Student_ID	Number(5)
Student_Name	String (20)
Dept_ID	String (3)
Dept_Name	String (48)
Subject1	Decimal(3,2)
Subject2	Decimal(3,2)
Subject3	Decimal(3,2)
Subject4	Decimal(3,2)
Subject5	Decimal(3,2)
Total	Decimal(3,2)
Average	Decimal(3,2)
Result	String(4)

4. Subject Average Aggregate Table

Field Names	Datatype
Dept_ID	Number(3)

Dept_Name	String(48)
Subject1_Average	Decimal(3,2)
Subject2_Average	Decimal(3,2)
Subject3_Average	Decimal(3,2)
Subject4_Average	Decimal(3,2)
Subject5_Average	Decimal(3,2)

5. Subject_Pass_Percentage Table

Field Names	Datatype
Dept_ID	String (3)
Dept_Name	String (48)
Subject1_Pass_Percentage	Number(3,2)
Subject2_Pass_Percentage	Number(3,2)
Subject3_Pass_Percentage	Number(3,2)
Subject4_Pass_Percentage	Number(3,2)
Subject5_Pass_Percentage	Number(3,2)

7. SOURCE TARGET MAPPING AND MAPPING LOGICS

1. Department Dimension

Source- Department_details.txt

Source Column Names	Mapping Logic	Target Column Names
Dept_Code	Directly moved to the target.	Dept_ID
Dept_Name	Directly moved to the target.	Dept_Name

2. Student Dimension

 Source- Student_details.txt, Student_address.txt (JOINER TRANSFORMATION ON student_id)

Source Column Names	Mapping Logic	Target Column Names
Student_ID	Directly moved to the target.	Student_ID
Student_Name	Directly moved to the target.(JNR)	Student_Name
Dept_Code	Directly moved to the target.	Dept_ID
Address	All the characters are converted to uppercase.(JNR+EXP)	Address
Postal_Code	All the extra spaces and special characters are removed.(JNR+EXP)	Postal_Code

Phone_Number	Validated for valid 10 digit phone number. Returned NULL for invalid else Phone_Number.(JNR+ EXP)	Phone_Number

3 .Marks Fact Table

Source- Student_marks.txt,

Student_Dimension table(lookup1),Department_Dimension table(lookup2)

Source Column Names	Mapping Logic	Target Column Names
Student_id	Directly moved to the target.	Student_id
Student_Name	Directly moved to the target.(LOOKUP TRANSFORMATION1)	Student_Name
Dept_Code	Directly moved to the target.(LOOKUP TRANSFORMATION2)	Dept_id
Dept_Name	Directly moved to the target.(LOOKUP TRANSFORMATION2)	Dept_Name
Subject1	Directly moved to the target.	Subject1
Subject2	Directly moved to the target.	Subject2
Subject3	Directly moved to the target.	Subject3

Subject4	Directly moved to the target.	Subject4
Subject5	Directly moved to the target.	Subject5
Total	Sum of Subject1, Subject2, Subject3, Subject4 and Subject5 (EXPRESSION TRANSFORMATION)	Total
Average	Average column has to be calculated as average of all marks(EXPRESSION TRANSFORMATION)	Average
Result	If Average>= 50 ,termed as Pass, else fail(EXPRESSION TRANSFORMATION)	Result

4. Subject Average Aggregate Tab1

Source-Marks_Fact Table

Source Column Names	Mapping Logic	Target Column Names
Dept_ID	Directly moved to the target.(SORTER TRANSFORMATION)	Dept_ID
Dept_Name	Directly moved to the target.	Dept_Name
Subject1_Average	Need to average the total Marks of the students scored in Subject1 group by department using respective function(AGGREGATOR TRANSFORMATION)	Subject1_Average
Subject2_Average	Need to average the total Marks of the students scored in Subject2 group by department using respective function(AGGREGATOR	Subject2_Average

	TRANSFORM ATION)	
Subject3_Averag e	Need to average the total Marks of the students scored in Subject3 group by department using respective function(AGG REGATOR TRANSFORM ATION)	Subject3_Average
Subject4_Averag e	Need to average the total Marks of the students scored in Subject4 group by department using respective function(AGG REGATOR TRANSFORM ATION)	Subject4_Average
Subject5_Averag e	Need to average the total Marks of the students scored in Subject5 group	Subject5_Average

	by department using respective function(AGGREGATOR TRANSFORMATION)	

5. Subject Pass Percentage Aggregate Table

Source-Marks_Fact Table

Source Column Names	Mapping Logic	Target Column Names
Dept_Code	Directly moved to the target.	Dept_ID
Dept_Name	Directly moved to the target.	Dept_Name
Subject1_Pass_Percentage	Need to check whether the Subject1_Pass_Percentage is greater than 50% or less group by Dept_ID If greater than 50% then '1' Else '0' (EXPRESSION+AGGREGATOR TRANSFORMATION)	Subject1_Pass_Percentage

Subject2_Pass_Percentage	Need to check whether the Subject2_Pass_Percentage is greater than 50% or less group by Dept_ID If greater than 50% then '1' Else '0' (EXPRESSION+AGGREGATOR TRANSFORMATION)	Subject2_Pass_Percentage
Subject3_Pass_Percentage	Need to check whether the Subject3_Pass_Percentage is greater than 50% or less group by Dept_ID If greater than 50% then '1' Else '0' (EXPRESSION+AGGREGATOR TRANSFORMATION)	Subject3_Pass_Percentage
Subject4_Pass_Percentage	Need to check whether the Subject4_Pass_Percentage is greater than 50% or less group by Dept_ID If greater than 50% then '1' Else '0' (EXPRESSION+AGGREGATOR TRANSFORMATION)	Subject4_Pass_Percentage

Subject5_Pass_Percentage	Need to check whether the Subject5_Pass_Percentage is greater than 50% or less group by Dept_ID If greater than 50% then '1' Else '0' (EXPRESSION+AGGREGATOR TRANSFORMATION)	Subject5_Pass_Percentage

8.WORKFLOW TEMPLATE

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                                                    s_Subject_Pass_Percent_Aggregate

            s_department_dimension

Start                                    s_marks_fact

            s_student_dimension

                                                    s_Subject_Average_Aggregate
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