

SOFTWARE ENGINEERING

Lab 2 Activity

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3. Documentation (CO-3)

Module Specification

The Student Result Processing System is divided into independent modules to achieve low coupling and high cohesion. Each module performs a specific task and can be compiled separately.

Module 1: Main Module (main.c)

Input:

Input file name (studentdata)

Student details

Pre-condition:

Input file must exist and follow specified format

Logic:

Opens input file

Reads student details

Calls validation and calculation modules

Stores processed data

Calls output module

Output:

Processed student data

Module 2: Validation Module (validation.c)

Input:

Student ID, Name, Marks

Pre-condition:

Data read from file

Logic:

Validates ID, name and marks range

Output:

Valid or invalid status

Module 3: Calculation Module (calculation.c)

Input:

Subject-wise marks

Pre-condition:

Marks validated

Logic:

Calculates total, percentage, CGPA

Assigns grade

Output:

Computed academic results

Module 4: Output Module (output.c)

Input:

Student records

Pre-condition:

Results calculated

Logic:

Writes result table

Computes class statistics

Output:

output.txt file

Logic Representation (Algorithm)

1. Start
2. Open input file
3. Read student data
4. Validate inputs
5. Calculate results
6. Store records
7. Write output file
8. End

2. Flowchart

The overall system flowchart is drawn using diagram.io showing input, processing, decision and output flow.

