DOCUMENTATION

1. The assignment consists of 2 tasks:
2. Read Student ID and print out his/her name, ID, number of questions missed, Lists of miss questions, percentage, and grade.
3. Generate a report on a output file which contain all students’ name, ID, percentage and grade.

Task 1

1. A screenshot of a computer

   Description automatically generatedFunctions involved:
2. Flow:
3. A screenshot of a computer

   Description automatically generatedMain function:

* The program will get the ID from user.
* The ID will be the input of readFile() function.

1. readFile():

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* The function will open the StudentAnswers.dat file, read the data in the file until the end of file is reached. First, the function will get Student name store in “name” variable, Student ID store in “matrikno” variable, and his/her Answers store in “Answers” variable.
* To find the student’s name and the Answers corresponding to the input ID, the comparison between the input ID and “matrikno” variable is needed (code line 45 – 54).
* 2 outcomes:

1. “matrikno” variable not equal to input ID:

“wrong” variable will +1 if the comparing character between the two variables is not the same.

If wrong variable not equal to 0, the program will proceed to read next student’s name, matrikno and Answers.

1. “matrikno” variable is equal to input ID:

“wrong” variable = 0, thus the if statement (line 49 – 53) will be executed. The “name” and “matrikno” will be the input of identity() function, and Answers will be the input of compareAnswers() function.

1. identity():

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* This function will print The name and student ID on screen.

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   Description automatically generatedcompareAnswers():

* This function will get the Correct Answers from Answers.txt file (The correct answers stored in “AnswerScheme” variable.
* Then, the function will compare the input “data” array with “AnswerScheme” array element by element (question by question) in a “for” loop.
* 2 outcomes:

1. nth question is correct – The loop will proceed to compare with the next question.
2. nth question is incorrect – The ‘if’ statement (line 80 – 86) will be executed. The following things will be stored in according variable:

* Incorrect question list -> “number” array
* Incorrect answer list -> “wrongAns” array
* Correct answer of the incorrect answer list -> “correctAns” array

(Example: if the student gets question 2, 6, 11, 18, 20 incorrect: number = {2,6,11,18,20})

* The total number of missed questions will be stored in “error” variable and print on screen.
* Then, the three array mentioned in “b” will be passed to printMissQuestion() function, and “error” variable will be passed to Percentage\_and\_Grade() function.

1. printMissQuestion():

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* This function will print out the list of the question missed.

1. Percentage\_and\_Grade():

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* This function will calculate the percentage, assign the grade based on percentage, and print both value on screen.

Task 2

1. Functions involved:

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1. Flow:
2. printreport():

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* This function will open StudentAnswers.dat file and OUTPUT.out file.
* Name, ID and Answers will get from the input file. Answers will be passed to compareAnswers() function (mentioned before), to get the percentage and grade.
* Name, ID, percentage and grade of all students will be written in OUTPUT.out file.