Create Task Name:

Sample FRQ 1

Refer to your Personalized Project Reference when answering these questions.

1. Consider the procedure identified in part (i) of the Procedure section of your Personalized Project Reference. Describe two calls to the procedure. Each call must pass a different argument(s) that causes a different segment in the algorithm to execute:

First Call:

One call to the procedure is when the value of students is given by [(“Mike”, 1.9), (“Sarah”, 3.1), (“Timmy”, 2.5)] and the argument query is “low”.

Second Call:

Another call to the procedure is when the value of students is given by [(“Mike”, 1.9), (“Sarah”, 3.1), (“Timmy”, 2.5)] and the argument query is “high”.

1. Describe what conditions(s) is being tested by each call to the procedure.

Conditions(s) tested by the first call:

Since the value of query is “low”, it will execute the first if block, traversing through the list of students and append to the list result only names of students whose gpa is less than or equal to 2.0.

Condition(s) tested by the second call:

Since the value of query is “high”, it will execute the second elif block, traversing through the list of students and append to the list result only names of students whose gpa is greater than 2.0.

1. Identify the result of each call:

Result of first call:

This procedure call returns the list of students whose gpa is less than or equal to 2.0. The call returns the list containing only “Mike”: [“Mike”].

Result of second call:

This procedure call returns the list of students whose gpa is greater to 2.0. The call returns the list containing “Sarah” and “Timmy”: [“Sarah”, “Timmy”].

1. Consider the list identified in the List section of your Personalized Project Reference.
2. Identify the name of the list being used in the program.

The name of the list is students.

1. Describe what the data contained in the list represent in your program.

The list students contains the name and gpa information for each student.

1. Explain how the selected list manages the complexity in your program code by explaining why your program code could not be written, or how it could be written differently, if you did not use the list.

Without a list, it would be impossible to store the records of all the students from the text file. For example, if we were to create one variable for each student, then we could potentially have hundreds of variables. It would not be possible to traverse all these variables and filter out the subset of students required by the program. In addition, the number of students from the text file may vary and is an unknown. Using this method, we cannot determine the number of variables to create.