University of Johannesburg

Academy of Computer Science & Software Engineering

IFM01B1: Introduction to Data Structures (VB)

Practical Assignment 01 (Due: 22 July 2022 @ 09h00)

Programming Instructions

Copy and paste the following text at the beginning of each class you create and fill in the relevant details:

```
'*******************************************************************************************
' Surname, Initials:
' Student Number:
' Practical: P01
'*******************************************************************************************
```

Question

GrillMeal is a new competitive cooking show and the producers have asked you to develop an application that can help with the managing of the scores from the judges. The most important aspect will be to determine the winner of the competition along with the chefs that score within a specific rating. You may assume that each chef will be evaluated by the same number of judges.

For each chef the following information is needed:

1. Name of the chef. **(i.e., "Jane Smith")**
2. Name of the dish. **(i.e., "Butter chicken")**
3. Score given by each of the judges out of 10. **(i.e., 5; 7; 8; 5; …)**
4. The average score of the chef. **(See question b)**
5. The rating of the dish. **(See question e)**
6. Should the chef be flagged? **(See question g)**

Your application will only need to be able to complete the following actions:

a) Read in all the necessary information for the application and display the details of each chef in the grid.
b) For each chef, determine, store **(in 4)** and display the average score for each chef. This is the total of all the scores given divided by the number of judges.
c) For each judge, determine, store, and display the average score for each of the judges. This is the total scores given by the judge divided by the number of chefs.

d) Create a function called **DetermineRating** that accepts a single double value and returns an integer. Use the table below to determine what value should be returned and make use of a **select case**.

Double value passed into function	**Value to be returned**
0 to 2.5	4
2.6 to 5	3
5.1 to 7.5	2
7.6 to 10	1

e) Using the function created in question d, determine, store **(in 5)** and display the rating for each of the chefs. You will pass the chef's average score into the function to get the rating which will be displayed in the grid.
f) Determine and display in a textbox the overall average score given by the judges. This is the sum of each chef's average score divided by the number of chefs.
g) For each chef, determine, store **(in 6)** and display if the chef should be flagged. All chefs with a rating of 2 and lower should be flagged. Also determine the number of chefs that are flagged and display that in a textbox.
h) Determine and display the name of the chef with the highest average score. The name must be displayed in a textbox.

Please note that no further marks will be awarded for Correct Execution from the point a program terminates unexpectedly – a solution that cannot be run will therefore be awarded 0 Correct Execution marks immediately whereas a program that is able to execute up to Question b) may qualify (subject to correctness of code) for Correct Execution marks up to Question b).

Section A: Design & Programming Practices		Mark Allocation
	Full Design	5
	Form Look & Feel	2
	Option Statements	1
	Variables & Record Structures	5
	Commenting	1
	Effective Use of Subroutines	2
Section A Total		**16**

Section B: Execution of Program		Code	Correct
		Mark Allocation	
Question A			
	Read in the information and display all the details for each of the chef		12
	Input the number of chefs and judges that are being monitored (this includes resizing the array and grid plus labelling the grid)	6	
	Input the details for each chef and display all the details to the grid	6	
Question B			
	Calculate, store and display the average per judge for the chef		5
	Calculate and store the average score given to the chef by each of the judges	4	
	Display in the grid	1	
Question C			
	Calculate, store and display the average score each judges gave		4
	Calculate and store the average score of each judge	3	
	Display in the grid	1	
Question D			
	Create a function called **DetermineRating**; Parameters, and return value	4	
Question E			
	Using the function create in Question D determine, store and display the rating of the chef based on the average score for the chef		3
	Determine and display the rating of each judge	2	
	Display in the grid	1	
Question F			
	Determine, store and display the overall average for the scores given by the judges for the chefs		4
	Determine and store the overall average.	3	
	Display in a textbox.	1	
Question G			
	Determine, store and display if a chef should be flagged. Also determine the number of chefs that have been flagged.		7
	Determine, store and display in the grid the chef should be flagged, display in the grid	3	
	Determine and display the number of chefs flagged display in a textbox	4	
Question H			
	Determine and display the name of the chef that has the highest average score and display in textbox.		5
	Determine the name of the chef with the highest average score.	4	
	Display in textbox	1	
Section B Totals		**44**	**40**