IFM01A1 | IFM1A10

INFORMATICS 1A

Practical Assignment P2022A-09

Due: 29 April 2022, 13:50

Competence Checklist (Your Practical Should Demonstrate the Following)	
# Subroutines	#UJGrid Control
# Functions	#Records

INSTRUCTIONS/WARNINGS

- No complete accompanying design (on paper), no mark
- No upload on Eve, no mark
- Plagiarism, no mark
- All classes must begin with the following comment (completed with relevant information)
- Name this project **S{StudentNumber}_P2022A_09**

```
' ****************************************************************
' Surname, Initials:
' Student Number:
' Practical: P2022A-09
' Class name: (this is the name of the form you are working on)
' ****************************************************************
```

PROBLEM

Semester Test Question

You have been approached to help develop a Visual Basic application (Visual Basic app (.net Framework)), that will monitor the number of Covid vaccines that have been disturbed to different regions for a number of months. The name of the application is "Medical Vector". The main purpose of the application is to determine which region needs help in the distribution of the Covid vaccine. This would be the region that has the lowest percentage of the vaccine distributed. You may assume that each region will be monitored for the same number of months.

For each **region**, the following information will be needed:

1. Name of the region. (**e.g.,** "Jamaica")
2. The population of the region. (**e.g.,** 2 726 667)
3. Vaccines distributed per month. (**e.g.,** 500; 1200; 6000; 750 …)
4. The total number of people vaccinated. **(see question b)**
5. The average number of people vaccinated per month. **(see question b)**
6. Percentage of the region vaccinated. **(see question c)**
7. Rating of the region. **(see question e)**
8. Is there fraud occurring in the region? **(see question f)**

Your application must be able to complete the following additional instructions:

a) Read in all the required information per region and display the following to the grid, the name, the population and the number of vaccines distributed each month.

b) Determine, store (in 4 & 5) and display the total for the region. Use the total to calculate the average for the region. Total divided by the number of months to get the average for the region.

c) Determine, store **(in 6)** and display the percentage of people in the region that have received the vaccine. This is the total number of people divided by the population multiplied by 100.

*(Total amount of people/ population per region) * 100*

d) Create a function called ***DetermineRating,*** which returns a string after accepting a single parameter as type double. Make use of a nest if statement to return the correct value based on the following conditions:

Value given as double	***Value to be returned***
0 to 25 (including 0 and 25)	"D"
25 to 56 (excluding 25 and excluding 56)	"C"
56 to 75 (including 56 and including 75)	"B"
75 to 100 (excluding 75 and including 100)	"A"

e) Using the function created in question d, determine, store **(in 7)** and display the rating per region. The rating is based on the percentage of people vaccinated.

f) Determine, store **(in 8)** and display if a region is giving potentially fraudulent values. This can be seen if the percentage is over 100% for the respective region. If the region is committing fraud, store **(in 8)** and display in the grid "Y" or "N" respectively. Also determine the number of regions that are potentially committing fraud and display it in a textbox.

g) Determine and display the name of the region that needs assistance with the distribution of the vaccine. This is the region with the lowest percentage.

h) Determine and display the number of regions that may need help these are regions with a percentage of 50% and less for the vaccine distribution.

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 region		12
	Input the number of regions and months that are being monitored (this includes resizing the array and grid plus labelling the grid)	6	
	Input the details for each region and display all the details to the grid	6	
Question B			
	Calculate, store and display the total per region and average vaccination per month		5
	Calculate, store and display the total per region and average vaccination per month	4	
	Display in the grid	1	
Question C			
	Calculate, store and display the percentage of vaccination disturbed for the region		3
	Calculate and store the percentage of vaccination disturbed for the region	2	
	Display in the grid	1	
Question D			
	Create a function called **DetermineRating**; Parameters, and return value	4	
Question D			
	Using the function create in Question D determine, store and display the rating of each region based on the percentage of the vaccine distributed		3
	Determine and store the rating per region	2	
	Display in the grid	1	
Question F			
	Determine, store and display the regions that may be committing fraud, these are regions where the percentage of vaccines disturbed is greater than 100%		6
	Determine, store and display in the grid if a region maybe committing fruad	3	
	Calculate the number of region that may be committing fraud and display it in the a textbox	3	
Question G			
	Determine and display the name of the region that needs assistance this is the region with the lowest percentge distrubted		6
	Determine the name of the region that need the most help.	5	
	Display in textbox	1	
Question H			
	Determine and display the number of regions that may need help in the future these are regions where the percentage is 50% and lower		5
	Determine the number of region that may need help.	4	
	Display in textbox	1	
Section B Totals		**44**	**40**