ITAPA2-B12 Project 1

Section A:

Question 1:

```
#Make tkinter available to use for a GUI
from tkinter import*
#Use the messagebox function
from tkinter import messagebox
root = Tk()
#create a class for the program named shopping that will calculate the discounted cost
class Shopping:
    def _init_(self, Item1, Item2, Item3):
        self.Item1 = Item1
        self.Item2 = Item2
        self.Item3 = Item3
#Calculate the totalcost
TotalCost = Item1 + Item2 + Item3
#Calculate the discount
FinalPrice= TotalCost - Min(Item1, Item2, Item3)
#Calculate the lowest price
Min = Min(Item1, Item2, Item3)
        print("The TotalCost for You is" + TotalCost + "But you save" + Min + "So you only pay:" +
FinalPrice)
#Set the class values equal to the input values from the user
def EnterVal():
   Item1 = Cost1
   Item2 = Cost2
   Item3 = Cost3
#Prompts the user to enter the cost of the three products they selected
ItemCost = Label(root, text= "Welcome! Please enter your 3 Item costprices")
ItemCost.pack()
```

```
def CostConfirm1():
    messagebox.showinfo("Cost of Price", "The price is: " + Cost1.get())
#Get the first price from the user
Cost1 = Entry(root)
Cost1.pack()
#Display the first price
Enter1 = Button(root, text = "Enter the first price", command= CostConfirm1)
Enter1.pack()

def CostConfirm2():
    messagebox.showinfo("Cost of Price", "The price is: " + Cost2.get())
#Get the second price from the user
Cost2 = Entry(root)
Cost2.pack()
#Display the second price
Enter2 = Button(root, text = "Enter the second price", command= CostConfirm2 )
Enter2.pack()

def CostConfirm3():
    messagebox.showinfo("Cost of Price", "The price is: " + Cost3.get())
#Get the third price from the user
Cost3 = Entry(root)
Cost3.pack()
#Display the third price
Enter3 = Button(root, text = "Enter the third price", command= CostConfirm3)
Enter3.pack()
#Calling the class
Shopping()
EnterVal()

root.mainloop()
```

Question 2:

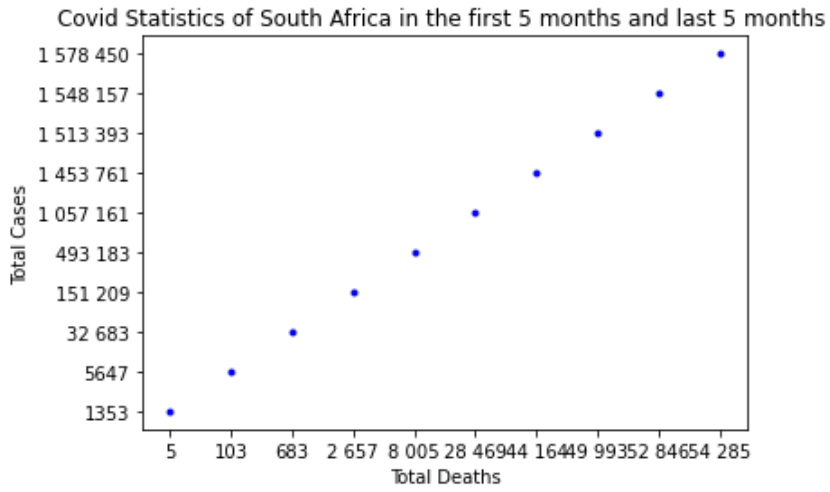
```
#Establish the connection between the Mysql Database and Python
from mysql.connector import Question2
#Get the info from the student
def InsertDetails(StudentID, Name, Surname, Age, Cellphone, Degree):
    studentdetails = "INSERT RegisterStudent(StudentID, Name, Surname, Age, Cellphone, Degree)"
    "Values(1,2,3,4,5,6)"
    values = (StudentID, Name, Surname, Age, Cellphone, Degree)
#Insert the studentdetails into the database
def Student():
    InsertDetails(ID,name,surname,age,cellphone,degree)
#Select everything from the database and display it to the user
def SelectDetails(StudentID, Name, Surname, Age, Cellphone, Degree):
    selectdetail = "Select * from RegisterStudent"
#Create the register function that will ask a student for their details
def register():
    ID = int(input("Please enter your student ID"))
    name = input("Please enter your Name")
    surname = input("Please enter your Surname")
    age = int(input("Please enter your Age"))
    cellphone = int(input("Please enter your cellphone"))
    degree = input("Please enter your degree")
    InsertDetails(StudentID, Name, Surname, Age, Cellphone, Degree)
    Student()
    print("Registration successful")
#Create the getallStudent function that will display all the students that have registered
def getallStudent():
    print("Here are all the students that have registered so far")
    print("StudentID     " + "Name    " + "Surname    "+"Age    "+"Cellphone    "+"Degree")
    selectdetail()
#Create the run function that will handle the option that the user choosed on the main menu
```

```
def Run():
    Option = int(input("1. Register, 2. Display Registered students, 3. Exit program "))
    if Option == 1:
        register()
    elif Option == 2:
        getallStudent()
    elif Option == 3:
        Exit()
#Create the Exit function that wll terminate the program when the user selects 3 from the option menu
def Exit():
    exit()
#Create the DisplayMainMenu that will Display the main menu of the program and also start the program
def DisplayMainMenu():
    print("Hello, Please Choose an option")
    Run()

#Call the DisplayMainMenu function
DisplayMainMenu()
```

Question 3:

3.1

```
import matplotlib.pyplot as CovidGraph


# The total Deaths in the first 5 months and last 5 months up until 28th of April 2021 in South Africa(x-axis)


x = ["5","103","683","2 657","8 005","28 469"," 44 164 "," 49 993 "," 52 846 "," 54 285 "]


# The total Cases in the first 5 months and last 5 months up until 28th of April 2021 in South Africa (y-axis)


y = ["1353","5647","32 683","151 209","493 183","1 057 161","1 453 761","1 513 393","1 548 157","1 578 450"]

#Plot the various points on the graph

CovidGraph.scatter(x, y, color = "b", marker = ".")


CovidGraph.xlabel("Total Deaths")

CovidGraph.ylabel("Total Cases")


CovidGraph.title("Covid Statistics of South Africa in the first 5 months and last 5 months ")

#Displays the Graph

CovidGraph.show()
```



3.2

Both Cases and deaths of covid-19 are still on an uprise in South Africa and with a third wave to arrive, it will only make these numbers rise even more and although certain Covid-19 vaccines have come out, it does not mean that all of them are successful in treating the virus or protecting everyone from getting the it. The best way to stay safe from the virus is still to remain in lockdown, because it will keep most people away from interacting with one another and spreading the virus to each other, but not everyone has the privilege to do so as most people can't work from home.

3.3

```
#Use the matplotlib program in python

import matplotlib.pyplot as CovidGlobal

#Enter the different x and y values for each of the 7 continents

x1 = ["1"]

y1 = ["44.381"]

#Give each line a Name of a continent

CovidGlobal.plot(x1, y1, label = "Europe")

x2 = ["2"]

y2 = ["33.503"]

CovidGlobal.plot(x2, y2, label = "North America")

x3 = ["3"]

y3 = ["28.611"]

CovidGlobal.plot(x3, y3, label = "Latin America")

x4 = ["4"]

y4 = ["25.166"]

CovidGlobal.plot(x4, y4, label = "Asia")

x5 = ["5"]

y5 = ["13.369"]

CovidGlobal.plot(x5, y5, label = "Middle East")

x6 = ["6"]

y6 = ["4.571"]

CovidGlobal.plot(x6, y6, label = "Africa")

x7 = ["7"]

y7 = ["0.062"]
```

```
CovidGlobal.plot(x7, y7, label = "Oceania")
#Give the X-axis the name Continents
CovidGlobal.xlabel("Continents")
#Give the Y-axis the name Total Cases (in millions)
CovidGlobal.ylabel("Total Cases (Millions)")
#Give the entire graph a name
CovidGlobal.title("Total Cases of Covid-19 Globally")
#Give the graph a legend to show what continent each line represents
CovidGlobal.legend()
#Display the Graph
CovidGlobal.show()
```

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