CODE / COURSE	**DFN40323 PROGRAMMING ESSENTIALS IN PYTHON**	**PROBLEM BASED TASK**	**1**
PROGRAM / CLASS	**DDT4**	**DURATION (NF2F)**	**10 HOURS 30 MINUTES**
STUDENT'S NAME	**1) GABRIEL BOY A/L DASARATHEN** **2) TAMARAISELVI** **3) MUHAMMAD AFIQ MUHAIMIN BIN MOHD ZAINI** **4) TAUFIQ ADHA BIN ZULNAFRI**	**CLO**	**CLO2, P4, PLO6**
REG. NO.	**1) 32DDT20F2008** **2) 32DDT20F2024** **3) 32DDT20F2029** **4) 32DDT20F2035**	**TOTAL MARKS**	**/50**
LECTURER'S NAME	**SHARIZAN BINTI ABDUL JAMIL**		

Learning Outcome:

By the end of this task, student will able to:

Display a strong digital skill in delivering software application solutions (CLO2, P4, PLO6).

Instructions for Problem Based Task:

Answer all the questions given. Students need to discuss in groups of four (4) person and upload the findings of the discussion in report (students require to screenshot the output and copy paste the python codes) and submit the source code in .py file through CIDOS. Students will be accessed according to the Rubric given.

Questions:

As a junior Python programmer from IT Tech Sdn Bhd has been assign **to construct a simple system to store customer car wash record at Clean Car Wash.** IT Tech Sdn Bhd is a leading IT company located in Pulau Pinang. The prospect of the company is designing web application, android system management and ICT consultant and training. The Clean Car Wash company is one of the IT Tech Sdn Bhd client.

After discussion with the client, the requirements that you required to fulfill as descriptions below.

- The basic requirements given by Clean Car Wash company for the system to be developed as follows:
- The system should be able to insert new car record and owner information. If the record successfully inserts, prompt a message to show the status of record either successful or failed. Then, go back to main menu.
- Display all the records of car register in the system.
- Update car wash information by choosing the car wash service either inner wash, outer wash or both. Update car wash information based on car plate number.

Table 1: Car Wash Information

Type of Car	Wash (RM)	Vacuum (RM)	Wash and Vacuum (RM)
Sedan	8	4	12
MPV	12	5	17
SUV	13	5	18

- Delete car wash record when needed by the system.
- The system should be able to repeat the previous requirement until when the owner of the system demands so.
- The system should be able to count the total income from the system.

Using your knowledge on Python Programming, develop the system based on the basic requirements stated above. Your system application should use function, database, modules or package and also need to use at least one Exception Handling.

The main menu of the system should accept input from user on which the user key in the choice they would like to do based on the Figure 1. Complete the Clean Car Wash system by referring the features stated earlier. At least four (4) rows of data insert into the database.

An example of system to be developed is as given below:

```
================================================  Welcome
                to Clean Car Wash System
================================================
    Menu Selection:

    1. Register Owner Car Record
    2. View Car Record Slot
    3. Update Booking Car Record
    4. Delete Owner Car Record
    5. Calculate Total Gross Income

    To exit the system, press Q.
    Your choice [  ]:

================================================  Welcome
            to Clean Car Wash System
================================================
                        Register Module:

    Car Type [MPV/SUV/SEDAN]:
    Car Plate Number:   Car Model:

    Owner Name:
    Owner Handphone Number:
    Owner Email:

            ~~~The car record has been registered.  ~~~
```

Figure 1: Example Menu Clean Car Wash

(50 marks)

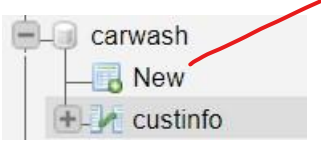
Connection test to database

```
import mysql.connector

carwashdb = mysql.connector.connect(host="localhost",
user="root", password="")
print(carwashdb)
```

```
<mysql.connector.connection_cext.CMySQLConnection object at 0x000001F8A5ADC250>
```

1. Create the Database

```
#Import mysql connector
import mysql.connector

#Declare login info for db
carwashdb = mysql.connector.connect(host="localhost", user="root", password="")
executor = carwashdb.cursor()
#Create database for carwash
executor.execute("CREATE DATABASE carwash")
```



2. Create the table

```
#Import mysql connector
import mysql.connector

#connect to 'carwash' db
carwashdb = mysql.connector.connect(host="localhost",
                                    user="root",
                                    password="",
                                    database="carwash")

#Declare cursor() to executor
executor = carwashdb.cursor()
#Create tabe carRecord
carRecord = """CREATE TABLE custInfo(
    CARTYPE VARCHAR (6) NOT NULL,
    PLATE_NUMBER VARCHAR (10) NOT NULL,
    MODEL VARCHAR (100),
    OWN_NAME VARCHAR (255),
    OWN_PHN VARCHAR (12),
    OWN_EMAIL VARCHAR (60),
    WASH_TYPE VARCHAR (20),
    WASH_PRICE INT,
    PRIMARY KEY (PLATE_NUMBER)
)"""
#Execute the sql statement
executor.execute(carRecord)
#Close db connection
carwashdb.close()
```

CARTYPE	PLATE_NUMBER	MODEL	OWN_NAME	OWN_PHN	OWN_EMAIL	WASH_TYPE	PRICE

3. Main body

```
#Import mysql connector and sys
import mysql.connector
import sys


#Define function named menu()
def menu():
    print("***********************************")
    print("    Welcome to Clean Car Wash System")
    print("***********************************")
    print(" Menu Selection: ")
    print("   1. Register Owner Car Record")
    print("   2. View Car Record Slot")
    print("   3. Update Booking Car Record")
    print("   4. Delete Owner Car Record")
    print("   5. Calculate Total Gross Income")

    print("To exit the system, press Q.")


#Call the function
menu()
#Ask user for input
opt = str(input("Enter Your Option:"))
#While loop for option
while opt != '0':
    if opt == '1':
        #Import module from modules folder
        from modules import regcust
    elif opt == '2':
        #Import module from modules folder
        from modules import listcust
    elif opt == '3':
        #Import module from modules folder
        from modules import updatedata
    elif opt == '4':
        #Import module from modules folder
        from modules import deletecust
    elif opt == '5':
        #Import module from modules folder
        from modules import grossincome
    elif opt == 'Q':
        print("Thank you for using Clean Car Wash")
        sys.exit()
    menu()
    opt = str(input("Enter Your Option:"))
```

4. Option 1 Insert data.

```
#Import mysql connector
import mysql.connector
#connect to 'carwash' db
carwashdb = mysql.connector.connect(host="localhost",
                                    user="root",
                                    password="",
                                    database="carwash")

#Ask input for db
cartype = input("Car Type [MPV/SUV/SEDAN]:")
plate_number = input("Car Plate Number:")
model = input("Car Model:")
own_name = input("Owner's Name:")
own_phn = input("Owner's Phone Number:")
own_email = input("Owner's Email:")

#Declare cursor() to executor
executor = carwashdb.cursor()
#Insert all data from user input to db
executor.execute(
    "INSERT INTO custInfo(CARTYPE,PLATE_NUMBER,MODEL,OWN_NAME,OWN_PHN,OWN_EMAIL) VALUES (%s,%s,%s,%s,%s,%s)",
    (cartype, plate_number, model, own_name, own_phn, own_email))

#Confirm the changes
carwashdb.commit()
print("Customer Record Inserted into the system")
```

5. Option 2 view car record.

```
#Import mysql connector
import mysql.connector
#connect to 'carwash' db
carwashdb = mysql.connector.connect(host="localhost",
                                    user="root",
                                    password="",
                                    database="carwash")
#Declare cursor() to executor
executor = carwashdb.cursor()

print("")
#Output all data from custinfo
executor.execute("SELECT  * FROM custinfo")
result = executor.fetchall()

#Print the result
for x in result:
    print(x)
```

6. Option 3 Update data.

```
#Import mysql connector
import mysql.connector
#Connect to carwash db
carwashdb = mysql.connector.connect(host="localhost",
                                    user="root",
                                    password="",
                                    database="carwash")
#Declare cursor() to executor
executor = carwashdb.cursor()
#Ask user for plate number
plate = input("Enter the plate number that you want to update:")
print("+-------------+------+--------+-----------------+")
print("  | Type of Car | Wash | Vacuum | Wash and Vacuum |")
print("+-------------+------+--------+-----------------+")
print("1.| Sedan       |    8 |      4 |              12 |")
print("2.| MPV         |   12 |      5 |              17 |")
print("3.| SUV         |   13 |      5 |              18 |")
print("+-------------+------+--------+-----------------+")
#Ask user for car type
cartype = int(input("Enter the type of car that you want to update (1/2/3):"))
#Ask user for service type
service = str(
    input(
        "Enter the service that you want to update (Wash/Vacuum/WashVacuum):"))
#If statement for sedan
if cartype == 1:
    if service == "Wash":
        executor.execute(
            "UPDATE custinfo SET WASH_TYPE='WASH',WASH_PRICE=8 WHERE CARTYPE='SEDAN' AND PLATE_NUMBER='%s'"
            % (plate))
        carwashdb.commit()
        print("--------------------RECORD UPDATED---------------------")
    elif service == "Vacuum":
        executor.execute(
            "UPDATE custinfo SET WASH_TYPE='VACUUM',WASH_PRICE=4 WHERE CARTYPE='SEDAN' AND PLATE_NUMBER='%s'"
            % (plate))
        carwashdb.commit()
        print("--------------------RECORD UPDATED---------------------")
    elif service == "WashVacuum":
        executor.execute(
            "UPDATE custinfo SET WASH_TYPE='WASH AND VACUUM',WASH_PRICE=12 WHERE CARTYPE='SEDAN' AND PLATE_NUMBER='%s'"
            % (plate))
        carwashdb.commit()
        print("--------------------RECORD UPDATED---------------------")
```

```
#If statement for MPV
if cartype == 2:
    if service == "Wash":
        executor.execute(
            "UPDATE custinfo SET WASH_TYPE='WASH',WASH_PRICE=12 WHERE CARTYPE='MPV' AND PLATE_NUMBER='%s'"
            % (plate))
        carwashdb.commit()
        print("--------------------RECORD UPDATED--------------------")
    elif service == "Vacuum":
        executor.execute(
            "UPDATE custinfo SET WASH_TYPE='VACUUM',WASH_PRICE=5 WHERE CARTYPE='MPV' AND PLATE_NUMBER='%s'"
            % (plate))
        carwashdb.commit()
        print("--------------------RECORD UPDATED--------------------")
    elif service == "WashVacuum":
        executor.execute(
            "UPDATE custinfo SET WASH_TYPE='WASH AND VACUUM',WASH_PRICE=17 WHERE CARTYPE='MPV' AND PLATE_NUMBER='%s'"
            % (plate))
        carwashdb.commit()
        print("--------------------RECORD UPDATED--------------------")
#If statement for SUV
if cartype == 3:
    if service == "Wash":
        executor.execute(
            "UPDATE custinfo SET WASH_TYPE='WASH',WASH_PRICE=13 WHERE CARTYPE='SUV' AND PLATE_NUMBER='%s'"
            % (plate))
        carwashdb.commit()
        print("--------------------RECORD UPDATED--------------------")
    elif service == "Vacuum":
        executor.execute(
            "UPDATE custinfo SET WASH_TYPE='WASH',WASH_PRICE=5 WHERE CARTYPE='SUV' AND PLATE_NUMBER='%s'"
            % (plate))
        carwashdb.commit()
        print("--------------------RECORD UPDATED--------------------")
    elif service == "WashVacuum":
        executor.execute(
            "UPDATE custinfo SET WASH_TYPE='WASH',WASH_PRICE=18 WHERE CARTYPE='SUV' AND PLATE_NUMBER='%s'"
            % (plate), )
        carwashdb.commit()
        print("--------------------RECORD UPDATED--------------------")
```

7. Option 4 Delete car record.

```
#Import mysql
import mysql.connector

carwashdb = mysql.connector.connect(host="localhost",
                                    user="root",
                                    password="",
                                    database="carwash")
plate_number = input("Enter plate number to delete:")
executor = carwashdb.cursor()

delinf = ("DELETE FROM custinfo WHERE PLATE_NUMBER  ='%s'" % (plate_number))

executor.execute(delinf)
carwashdb.commit()
print(executor.rowcount, "record(s) delete")
```

8. Option 5 gross income.

```
#Import mysql connector
import mysql.connector
#connect to 'carwash' db

carwashdb = mysql.connector.connect(host="localhost",
                                    user="root",
                                    password="",
                                    database="carwash")
#Declare cursor() to executor
executor = carwashdb.cursor()

#Sum wash_price for gross income
executor.execute("SELECT SUM(WASH_PRICE) FROM custinfo")

#Output the total
print("Gross income for today is RM", executor.fetchall()[0][0])
```

9. Output Option 1.

```
************************************
      Welcome to Clean Car Wash System
************************************
    Menu Selection:
      1. Register Owner Car Record
      2. View Car Record Slot
      3. Update Booking Car Record
      4. Delete Owner Car Record
      5. Calculate Total Gross Income
To exit the system, press Q.
Enter Your Option:1
Car Type [MPV/SUV/SEDAN]:MPV
Car Plate Number:WKD 5210
Car Model:Kerani
Owner's Name:Bob
Owner's Phone Number:0175917901
Owner's Email:bobramen@gmail.com
Customer Record Inserted into the system
```

	CARTYPE	PLATE_NUMBER	MODEL	OWN_NAME	OWN_PHN	OWN_EMAIL	WASH_TYPE	WASH_PRICE
Edit Copy Delete	MPV	AFC 5678	TESLA	aniq arfan	0123456789	aniqarfan@gmail.com	*NULL*	*NULL*
Edit Copy Delete	MPV	PSP 1234	TOYOTA SUPRA	TAUFIQ	0175917901	topikadha46@gmail.com	WASH AND VACUUM	17
Edit Copy Delete	MPV	WKD 5210	Kerani	Bob	0175917901	bobramen@gmail.com	*NULL*	*NULL*

10. Output Option 2.

```
************************************
      Welcome to Clean Car Wash System
************************************
    Menu Selection:
      1. Register Owner Car Record
      2. View Car Record Slot
      3. Update Booking Car Record
      4. Delete Owner Car Record
      5. Calculate Total Gross Income
To exit the system, press Q.
Enter Your Option:2

('MPV', 'AFC 5678', 'TESLA', 'aniq arfan', '0123456789', 'aniqarfan@gmail.com ', None, None)
('MPV', 'PSP 1234', 'TOYOTA SUPRA', 'TAUFIQ', '0175917901', 'topikadha46@gmail.com', 'WASH AND VACUUM', 17)
('MPV', 'WKD 5210', 'Kerani', 'Bob', '0175917901', 'bobramen@gmail.com', None, None)
```

11. Output Option 3.

```
************************************
      Welcome to Clean Car Wash System
************************************
    Menu Selection:
      1. Register Owner Car Record
      2. View Car Record Slot
      3. Update Booking Car Record
      4. Delete Owner Car Record
      5. Calculate Total Gross Income
To exit the system, press Q.
Enter Your Option:3
Enter the plate number that you want to update:WKD 5210
+-------------+------+--------+-----------------+
  | Type of Car | Wash | Vacuum | Wash and Vacuum |
+-------------+------+--------+-----------------+
1.| Sedan       |    8 |      4 |              12 |
2.| MPV         |   12 |      5 |              17 |
3.| SUV         |   13 |      5 |              18 |
+-------------+------+--------+-----------------+
Enter the type of car that you want to update (1/2/3):2
Enter the service that you want to update (Wash/Vacuum/WashVacuum):Wash
---------------------RECORD UPDATED---------------------
```

	CARTYPE	PLATE_NUMBER	MODEL	OWN_NAME	OWN_PHN	OWN_EMAIL	WASH_TYPE	WASH_PRICE
Edit Copy Delete	MPV	AFC 5678	TESLA	aniq arfan	0123456789	aniqarfan@gmail.com	*NULL*	*NULL*
Edit Copy Delete	MPV	PSP 1234	TOYOTA SUPRA	TAUFIQ	0175917901	topikadha46@gmail.com	WASH AND VACUUM	17
Edit Copy Delete	MPV	WKD 5210	Kerani	Bob	0175917901	bobramen@gmail.com	WASH	12

12. Output Option 4.

```
************************************
       Welcome to Clean Car Wash System
************************************
    Menu Selection:
      1. Register Owner Car Record
      2. View Car Record Slot
      3. Update Booking Car Record
      4. Delete Owner Car Record
      5. Calculate Total Gross Income
To exit the system, press Q.
Enter Your Option:4
Enter plate number to delete:WKD 5210
1 record(s) delete
```

	CARTYPE	PLATE_NUMBER	MODEL	OWN_NAME	OWN_PHN	OWN_EMAIL	WASH_TYPE	WASH_PRICE
Edit Copy Delete	MPV	AFC 5678	TESLA	aniq arfan	0123456789	aniqarfan@gmail.com	*NULL*	*NULL*
Edit Copy Delete	MPV	PSP 1234	TOYOTA SUPRA	TAUFIQ	0175917901	topikadha46@gmail.com	WASH AND VACUUM	17

13. Output Option 5.

```
************************************
       Welcome to Clean Car Wash System
************************************
    Menu Selection:
      1. Register Owner Car Record
      2. View Car Record Slot
      3. Update Booking Car Record
      4. Delete Owner Car Record
      5. Calculate Total Gross Income
To exit the system, press Q.
Enter Your Option:5
Gross income for today is RM 17
```

14. Output exit system.

```
************************************
       Welcome to Clean Car Wash System
************************************
    Menu Selection:
      1. Register Owner Car Record
      2. View Car Record Slot
      3. Update Booking Car Record
      4. Delete Owner Car Record
      5. Calculate Total Gross Income
To exit the system, press Q.
Enter Your Option:Q
Thank you for using Clean Car Wash

***Repl Closed***
```