



**INFORMATICS
INSTITUTE OF
TECHNOLOGY**

Foundation Certificate in Higher Education

Module : DOC334 - Introduction to Programming in Python P2

Module Leader : Mr. Sudarshana Welihinda

Assessment Type : Individual Coursework

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Qualifying mark: 40%

Student Name : Ayyub Hameem

IIT NO: 20211374

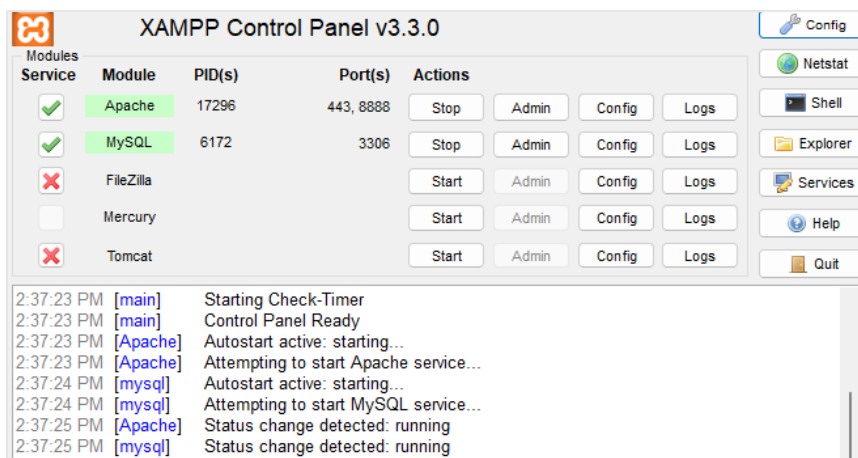
Introduction

The subject of this report is a student attendance system. I developed a Python console system that allows the user to access a SQL table using Python. The console system supports the following features:

1. View student information or attendance.
2. Search student information or attendance.
3. Enter new student information or attendance
4. Update student information or attendance
5. Delete student information or attendance

Steps taken create console system

1. First, we connect to the SQL server using XAMPP



2. Create a new SQL table using python

```
1 import mysql.connector
2
3 mydb = mysql.connector.connect(
4     host="localhost",
5     user="root",
6     password="",
7     database="icw")
8
9 mycursor = mydb.cursor()
10
11 mycursor.execute("CREATE TABLE Student_Information ( Student_ID INT NOT NULL,First_Name VARCHAR(15),\
12     Last_Name VARCHAR(15),Age INT,Gender ENUM('M','F'),PRIMARY KEY (Student_ID))")
13
14 mycursor.execute("CREATE TABLE Attendance( Student_ID INT NOT NULL, Date DATE, Attendance ENUM('1','ab'),\
15     Course_Level VARCHAR(15),FOREIGN KEY(Student_ID) REFERENCES Student_Information(Student_ID))")
16
17
```

Table	Action	Rows	Type	Collation	Size	Overhead
<input type="checkbox"/> attendance	★ Browse Structure Search Insert Empty Drop	0	InnoDB	utf8mb4_general_ci	32.0 KiB	-
<input type="checkbox"/> student_information	★ Browse Structure Search Insert Empty Drop	0	InnoDB	utf8mb4_general_ci	16.0 KiB	-

3. Create a main menu for the user to choose an option

```

1 def Menu():
2     print('-----')
3     print('Welcome to main menu')
4     print('1. View student information')
5     print('2. View student attendance')
6     print('3. Search student information')
7     print('4. Search student attendance')
8     print('5. Enter new student information')
9     print('6. Enter new attendance')
10    print('7. Update student information')
11    print('8. Update student attendance')
12    print('9. Delete student information')
13    print('10. Delete student attendance')
14    print('-----')

```

```

= RESTART: D:\IIT\IIT - Foundation\S
-----
Welcome to main menu
1. View student information
2. View student attendance
3. Search student information
4. Search student attendance
5. Enter new student information
6. Enter new attendance
7. Update student information
8. Update student attendance
9. Delete student information
10. Delete student attendance
-----
Select an option :

```

4. Then create a module for each option

a) View Student Information:

- I first inserted data manually through phpMyAdmin.

←T→	Student_ID	First_Name	Last_Name	Age	Gender
<input type="checkbox"/> Edit Copy Delete	20211374	Ayyub	Hameem	16	M
<input type="checkbox"/> Edit Copy Delete	20211375	Shamil	Farook	15	M

- Then I created a module in a Sub folder to view available student information.

```

1 import mysql.connector
2
3 mydb = mysql.connector.connect(host="localhost",
4                               user="root",
5                               password="",
6                               database="icw")
7 mycursor = mydb.cursor()
8
9 def View():
10    mycursor.execute("SELECT * FROM Student_Information")
11    result = mycursor.fetchall()
12    for x in result:
13        print(x)
14        print("\n")
15    print('<<<<<<Returning back to main menu>>>>>>')
16    print('')
17    return

```

```

===== RESTART: D:\IIT\IIT - Foundation\Semester 2\
(20211374, 'Ayyub', 'Hameem', 16, 'M')

(20211375, 'Shamil', 'Farook', 15, 'M')

<<<<<<Returning back to main menu>>>>>>

```

b) View Student Attendance:

- I first inserted data manually through phpMyAdmin.

Student_ID	Date	Attendance	Course_Level
20211374	2022-08-20	1	Foundation
20211375	2022-08-20	ab	A Level

- Then I created a module in a Sub folder to view student attendance.

```

1 import mysql.connector
2
3 mydb = mysql.connector.connect(host="localhost",
4                               user="root",
5                               password="",
6                               database="icw")
7 mycursor = mydb.cursor()
8
9 def View():
10     mycursor.execute("SELECT * FROM Attendance")
11     result = mycursor.fetchall()
12     for x in result:
13         print(x)
14         print("\n")
15         print('<<<<<<Returning back to main menu>>>>>>')
16         print('')
17     return

```

```

===== RESTART: D:\IIT\IIT - Foundation\Semester 2\DC
(20211374, datetime.date(2022, 8, 20), '1', 'Foundation')

<<<<<<Returning back to main menu>>>>>>

(20211375, datetime.date(2022, 8, 20), 'ab', 'A Level')

<<<<<<Returning back to main menu>>>>>>

```

c) Search Student Information

- I created a module in a Sub folder to search student information by entering the student id.

```
1 import mysql.connector
2
3 mydb = mysql.connector.connect(
4     host="localhost",
5     user="root",
6     password="",
7     database="icw")
8
9 mycursor = mydb.cursor()
10
11 def StudentInfo():
12     decision = True
13     while decision == True:
14         id = input("Enter Student ID : ")
15         mycursor.execute("SELECT* FROM Student_Information WHERE Student_ID = {}".format(id))
16         row = mycursor.fetchone()
17         if(row):
18             print("First Name:",row[1])
19             print("Last Name:", row[2])
20             print("Age:", row[3])
21             print("Gender:", row[4])
22         else:
23             print("Record Not Found...")
24         Choice = input('Would you like to search again(y/n)? : ')
25         if Choice == 'y':
26             decision = True
27         else:
28             decision = False
29             print('<<<<<<Returning back to main menu>>>>>>')
30             print('')
```

```
===== RESTART: D:\IIT\IIT - Foundation\Semester 2\
Enter Student ID : 20211374
First Name: Ayyub
Last Name: Hameem
Age: 16
Gender: M

Would you like to search again(y/n)? : y

Enter Student ID : 20211375
First Name: Shamil
Last Name: Farook
Age: 15
Gender: M

Would you like to search again(y/n)? : n

<<<<<<Returning back to main menu>>>>>>
```

d) Search for student attendance

- I created a module in a Sub folder to search student attendance by entering the student id.

```
1 import mysql.connector
2
3 mydb = mysql.connector.connect(
4     host="localhost",
5     user="root",
6     password="",
7     database="icw")
8
9 mycursor = mydb.cursor()
10
11 def Attendance():
12     decision = True
13     while decision == True:
14         id = input("Enter Student ID : ")
15         mycursor.execute("SELECT* FROM Attendance WHERE Student_ID = {}".format(id))
16         row = mycursor.fetchone()
17         if(row):
18             print("Date:",row[1])
19             print("Attendance(1/0):", row[2])
20             print("Course Level:", row[3])
21         else:
22             print("Record Not Found....")
23             print('<<<<<<Returning back to main menu>>>>>>')
24             print('')
25         Choice = input('Would you like to search another attendance(y/n)? : ')
26         if Choice == 'y':
27             decision = True
28         else:
29             decision = False
30             print('<<<<<<Returning back to main menu>>>>>>')
31             print('')
```

```
===== RESTART: D:\IIT\IIT - Foundation\Semester 2\
Enter Student ID : 20211374
Date: 2022-08-20
Attendance(1/0): 1
Course Level: Foundation

Would you like to search another attendance(y/n)? : y

Enter Student ID : 20211375
Date: 2022-08-20
Attendance(1/0): ab
Course Level: A Level

Would you like to search another attendance(y/n)? : n
<<<<<<Returning back to main menu>>>>>>
```

e) Enter new student information

- I created a module in a Sub folder to enter new student information.













```
1 import mysql.connector
2
3 mydb = mysql.connector.connect(host="localhost",
4                               user="root",
5                               password="",
6                               database="icw")
7 mycursor = mydb.cursor()
8
9 def NewStudent():
10     decision = True
11     while decision == True:
12         ID = int(input("Enter Student ID : "))
13         FirstName = input("Enter FirstName : ")
14         LastName = input("Enter LastName : ")
15         Age = input("Enter Age : ")
16         Gender = input("Enter Gender(M/F) : ")
17         mycursor.execute("INSERT INTO student_information(Student_ID,First_Name,Last_Name,Age,Gender)\
18                           VALUES(%s,%s,%s,%s,%s)", (ID,FirstName,LastName,Age,Gender))
19         mydb.commit()
20         Choice = input('Would you like to enter a new student(y/n)? : ')
21         if Choice == 'y':
22             decision = True
23         else:
24             decision = False
25             print('<<<<<<Returning back to main menu>>>>>>')
26             print('')
```

```
===== RESTART: D:\IIT\IIT - Foundation\Semester 2\
Enter Student ID : 20211376
Enter First Name : Eden
Enter Last Name : Hazard
Enter Age : 20
Enter Gender(M/F) : M

Would you like to enter a new student(y/n)? : y

Enter Student ID : 20211377
Enter First Name : Selena
Enter Last Name : Gomez
Enter Age : 22
Enter Gender(M/F) : F

Would you like to enter a new student(y/n)? : n
<<<<<<Returning back to main menu>>>>>>
```

← T →			Student_ID	First_Name	Last_Name	Age	Gender
<input type="checkbox"/>		Edit		Copy		Delete	20211374 Ayyub Hameem 16 M
<input type="checkbox"/>		Edit		Copy		Delete	20211375 Shamil Farook 15 M
<input type="checkbox"/>		Edit		Copy		Delete	20211376 Eden Hazard 20 M
<input type="checkbox"/>		Edit		Copy		Delete	20211377 Selena Gomez 22 F

f) Enter new student attendance

- I created a module in a Sub folder to enter student attendance.

```
1 import datetime
2 import mysql.connector
3 mydb = mysql.connector.connect(host="localhost",
4                               user="root",
5                               password="",
6                               database="icw")
7 mycursor = mydb.cursor()
8
9 def NewAttendance():
10     decision = True
11     while decision == True:
12         ID = int(input("Enter Student ID : "))
13         Date = str(input("Enter Date(yyyy-mm-dd) : "))
14         Attendance = int(input("Enter Attendance(l/ab) : "))
15         CourseLevel = input("Enter Course Level : ")
16         insert = "INSERT INTO Attendance(Student_ID,Date,Attendance,Course_Level) VALUES(%s,%s,%s,%s)"
17         value = (ID,Date,Attendance,CourseLevel)
18         mycursor.execute(insert,value)
19         mydb.commit()
20         print('')
21         Choice = input('Would you like to enter another attendance(y/n)? : ')
22         if Choice == 'y':
23             decision = True
24             print('')
25         else:
26             decision = False
27             print('<<<<<<Returning back to main menu>>>>>>')
28             print('')
```

```
===== RESTART: D:\IIT\IIT - Foundation\Semester 2\
Enter Student ID : 20211376
Enter Date(yyyy-mm-dd) : 2022-08-21
Enter Attendance(l/ab) : 1
Enter Course Level : 4th Year Degree

Would you like to enter another attendance(y/n)? : y

Enter Student ID : 20211376
Enter Date(yyyy-mm-dd) : 2022-08-21
Enter Attendance(l/ab) : ab
Enter Course Level : 4th Year Degree

Would you like to enter another attendance(y/n)? : n
<<<<<<Returning back to main menu>>>>>>
```

Student_ID	Date	Attendance	Course_Level
20211374	2022-08-20	1	Foundation
20211375	2022-08-20	ab	A Level
20211376	2022-08-21	1	4th Year Degree
20211376	2022-08-21	ab	4th Year Degree

g) Update student information

- I created a module in a Sub folder to update student information.

```
1 import mysql.connector
2
3 mydb = mysql.connector.connect(host="localhost",
4                               user="root",
5                               password="",
6                               database="icw")
7 mycursor = mydb.cursor()
8
9 def Update():
10     def UpdateMenu():
11         print('1. Update First Name')
12         print('2. Update Last Name')
13         print('3. Update Age')
14         print('4. Update Gender')
15         return
16     decision = True
17     while decision == True:
18         ID = int(input("Enter Student ID : "))
19         UpdateMenu()
20         option = int(input("Select an option : "))
21         if option == 1:
22             FirstName = input ("Enter First Name : ")
23             update = "UPDATE Student_Information SET First_Name= %s WHERE Student_ID = %s"
24             value = (FirstName, ID)
25             mycursor.execute(update,value)
26             mydb.commit()
27             Choice = input('Would you like to go back to update menu(y/n) : ')
28             if Choice == 'y':
29                 decision = True
30             else:
31                 decision = False
32                 print('<<<<<<Returning back to main menu>>>>>>')
33                 print('')
34
35         elif option == 2:
36             LastName = input ("Enter Last Name : ")
37             update = "UPDATE Student_Information SET Last_Name= %s WHERE Student_ID = %s"
38             value = (LastName, ID)
39             mycursor.execute(update,value)
40             mydb.commit()
41             Choice = input('Would you like to go back to update menu(y/n) : ')
42             if Choice == 'y':
43                 decision = True
44             else:
45                 decision = False
46                 print('<<<<<<Returning back to main menu>>>>>>')
47                 print('')
48
49         elif option == 3:
50             Age = input ("Enter Age : ")
51             update = "UPDATE Student_Information SET Age= %s WHERE Student_ID = %s"
52             value = (Age, ID)
53             mycursor.execute(update,value)
54             mydb.commit()
55             Choice = input('Would you like to go back to update menu(y/n) : ')
56             if Choice == 'y':
57                 decision = True
58             else:
59                 decision = False
60                 print('<<<<<<Returning back to main menu>>>>>>')
61                 print('')
62
63         elif option == 4:
64             Gender = input ("Enter Gender : ")
65             update = "UPDATE Student_Information SET Gender= %s WHERE Student_ID = %s"
66             value = (Gender, ID)
67             mycursor.execute(update,value)
68             mydb.commit()
69             Choice = input('Would you like to go back to update menu(y/n) : ')
70             if Choice == 'y':
71                 decision = True
72             else:
73                 decision = False
74                 print('<<<<<<Returning back to main menu>>>>>>')
75                 print('')
```

```

===== RESTART: D:\IIT\IIT - Foundation\Semester 2\
Enter Student ID : 20211376
1. Update First Name
2. Update Last Name
3. Update Age
4. Update Gender
Select an option : 1
Enter First Name : Thierry




Would you like to go back to update menu(y/n) : y

Enter Student ID : 2
1. Update First Name
2. Update Last Name
3. Update Age
4. Update Gender
Select an option : 2
Enter Last Name : Henry



Would you like to go back to update menu(y/n) : n
<<<<<Returning back to main menu>>>>>

```

- Before

<input type="checkbox"/>	 Edit	 Copy	 Delete	20211376 Eden	Hazard	20 M
--------------------------	--	--	--	---------------	--------	------

- After

<input type="checkbox"/>	 Edit	 Copy	 Delete	20211376 Thierry	Henry	20 M
--------------------------	--	--	--	------------------	-------	------

h) Update student information

- I created a module in a Sub folder to update student attendance.

```
1 import mysql.connector
2 mydb = mysql.connector.connect(host="localhost",
3                               user="root",
4                               password="",
5                               database="icw")
6 mycursor = mydb.cursor()
7
8 def Update():
9     def UpdateMenu():
10         print('1. Update Attendance')
11         print('2. Update Course Level')
12         return
13     decision = True
14     while decision == True:
15         ID = int(input("Enter Student ID : "))
16         Date = str(input("Enter Date(yyyy-mm-dd) : "))
17         UpdateMenu()
18         option = int(input("Select an option : "))
19         if option == 1:
20             Attendance = input("Enter Attendance(l/ab) : ")
21             update = "UPDATE Attendance SET Attendance= %s WHERE Student_ID = %s and Date = %s"
22             value = (Attendance, ID, Date)
23             mycursor.execute(update,value)
24             mydb.commit()
25             Choice = input('Would you like to go back to update menu(y/n) : ')
26             if Choice == 'y':
27                 decision = True
28             else:
29                 decision = False
30                 print('<<<<<<Returning back to main menu>>>>>>')
31                 print('')
32
33         elif option == 2:
34             CourseLevel = input("Enter Course Level : ")
35             update = "UPDATE Attendance SET Course_Level = %s WHERE Student_ID = %s and Date = %s"
36             value = (CourseLevel, ID, Date)
37             mycursor.execute(update,value)
38             mydb.commit()
39             Choice = input('Would you like to go back to update menu(y/n) : ')
40             if Choice == 'y':
41                 decision = True
42             else:
43                 decision = False
44                 print('<<<<<<Returning back to main menu>>>>>>')
45                 print('')
```

```
===== RESTART: D:\IIT\IIT - Foundation\Semester 2\
Enter Student ID : 20211375
Enter Date(yyyy-mm-dd) : 2022-08-20
1. Update Attendance
2. Update Course Level
Select an option : 1
Enter Attendance(l/ab) : l

Would you like to go back to update menu(y/n) : y

Enter Student ID : 20211375
Enter Date(yyyy-mm-dd) : 2022-08-20
1. Update Attendance
2. Update Course Level
Select an option : 2
Enter Course Level : Foundation

Would you like to go back to update menu(y/n) : n
<<<<<<Returning back to main menu>>>>>>
```

- Before

20211375	2022-08-20	ab	A Level
----------	------------	----	---------

- After

20211375	2022-08-20	1	Foundation
----------	------------	---	------------

i) Delete student information

- I created a module in a Sub folder to delete student information.

```

1 import mysql.connector
2
3 mydb = mysql.connector.connect(
4     host="localhost",
5     user="root",
6     password="",
7     database="icw")
8
9 mycursor = mydb.cursor()
10 def Delete():
11     decision = True
12     while decision == True:
13         id = (input("Enter Student ID : "))
14         mycursor.execute("DELETE FROM Attendance WHERE Student_ID = "+id+"")
15         mycursor.execute("DELETE FROM Student_Information WHERE Student_ID = "+id+"")
16         mydb.commit()
17         print('')
18         Choice = input('Would you like to enter a new student(y/n)? : ')
19         if Choice == 'y':
20             decision = True
21             print('')
22
23         else:
24             decision = False
25             print('<<<<<<Returning back to main menu>>>>>>')
26             print('')

```

```
Enter Student ID : 20211377
```

```
Would you like to enter a new student(y/n)? : n
<<<<<<Returning back to main menu>>>>>>
```

- Before

				Student_ID	First_Name	Last_Name	Age	Gender
<input type="checkbox"/>		Edit		Copy	20211374	Ayyub	Hameem	16 M
<input type="checkbox"/>		Edit		Copy	20211375	Shamil	Farook	15 M
<input type="checkbox"/>		Edit		Copy	20211376	Thierry	Henry	20 M
<input type="checkbox"/>		Edit		Copy	20211377	Selena	Gomez	22 F

- After

				Student_ID	First_Name	Last_Name	Age	Gender
<input type="checkbox"/>		Edit		Copy	20211374	Ayyub	Hameem	16 M
<input type="checkbox"/>		Edit		Copy	20211375	Shamil	Farook	15 M
<input type="checkbox"/>		Edit		Copy	20211376	Thierry	Henry	20 M

j) Delete student attendance

- I created a module in a Sub folder to delete student attendance.

```

1 import mysql.connector
2
3 mydb = mysql.connector.connect(
4     host="localhost",
5     user="root",
6     password="",
7     database="icw")
8
9 mycursor = mydb.cursor()
10 def Delete():
11     decision = True
12     while decision == True:
13         id = (input("Enter Student ID : "))
14         mycursor.execute("DELETE FROM Attendance WHERE Student_ID = "+id+"")
15         mydb.commit()
16         print('')
17         Choice = input('Would you like to delete another student information(y/n)? : ')
18         if Choice == 'y':
19             decision = True
20             print('')
21         else:
22             decision = False
23         print('<<<<<<Returning back to main menu>>>>>>')
24         print('')

```

```

===== RESTART: D:\IIT\IIT - Foundation\Semester 2\
Enter Student ID : 20211377

Would you like to delete another student information(y/n)? : n
<<<<<Returning back to main menu>>>>>

```

- Before

Student_ID	Date	Attendance	Course_Level
20211374	2022-08-20	1	Foundation
20211375	2022-08-20	1	Foundation
20211376	2022-08-21	1	4th Year Degree
20211376	2022-08-21	ab	4th Year Degree

- After
-

Student_ID	Date	Attendance	Course_Level
20211374	2022-08-20	1	Foundation
20211375	2022-08-20	1	Foundation