



Green University Of Bangladesh
Department Of Computer Science and Engineering (CSE)
Faculty of Sciences and Engineering
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LAB REPORT NO - 01 & 02
Course Title: Data Mining Lab
Course Code: CSE-436 **Section:** D2

Lab Experiment Name: Python Problem Solve

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Lab Report Status

Mark:.....	Signature:.....
Comments:.....	Date:.....

1 INTRODUCTION

In this lab report we are going to implement four basic Python program. Those three program are:

- i) To create two empty classes, Student and Marks. Now create some instances and check whether they are instances of the said classes or not. Also, check whether the said classes are sub classes of the built-in object class or not.
- ii) A Python class named Student with two attributes studentName, marks. Modify the attribute values of the said class and print the original and modified values of the said attributes.
- iii) A Python class named Student with two attributes studentId, studentName. Add a new attribute studentClass and display the entire attribute and their values of the said class. Now remove the student- Name attribute and display the entire attribute with values.
- (iv) A Python class named Student with two attributes studentId, studentName. Add a new attribute studentClass. Create a function to display the entire attribute and their values in Student class.

2 OBJECTIVE

The aim of this lab is to know the basic of Python. From this lab we will have a clear idea about the syntax of Python And python Variables, Data Types, Operators, Lists, Tuples, and Dictionaries Libraries and Modules and Object-Oriented Programming.

3 PROCEDURE

Algorithm 1 Checking the instances of the said classes and also sub-classes of the built-in object class

- 1: Define the Student class
 - 2: Define the Marks class
 - 3: Create some instances of the Student class
 - 4: Create some instances of the Marks class
 - 5: Check whether the instances are instances of the said classes
 - 6: Check whether the said classes are subclasses of the built-in object class
 - 7: END
-

Algorithm 2 A Python class named Student with two attributes studentName, marks. Modify the attribute values of the said class and print the original and modified values of the said attributes.

- 1: Import the array
 - 2: Define a class named Student
 - 3: Inside the class, create an `__init__` method to initialize the attributes studentName and marks
 - 4: Create a method named `modify_attributes` within the class to modify the attribute values and print them
 - 5: Create an instance of the Student class
 - 6: Call the `modify_attributes` method to modify the attributes and print the original and modified values
 - 7: END
-

Algorithm 3 A Python class named Student with two attributes studentId, studentName. Add a new attribute studentClass and display the entire attribute and their values of the said class. Now remove the studentName attribute and display the entire attribute with values

- 1: Create a class named Student.
 - 2: Initialize the class with two attributes: studentId and studentName
 - 3: Define a method to add a new attribute studentClass to the class
 - 4: Define a method to remove a specified attribute from the class.
 - 5: Instantiate the Student class with some values for studentId and studentName.
 - 6: Add the attribute studentClass using the method defined in step 3.
 - 7: Remove the attribute studentName using the method defined in step 4.
 - 8: Display all the attributes and their values again using the method
 - 9: END
-

Algorithm 4 A Python class named Student with two attributes studentId, studentName. Add a new attribute studentClass. Create a function to display the entire attribute and their values in Student class.

- 1: Define a class named Student with the following attributes: studentId, studentName
 - 2: Implement the `__init__` method to initialize the studentId and studentName attributes.
 - 3: Implement a method `add_student_class` to add a new attribute studentClass to the class.
 - 4: Implement a method `display_attributes` to display all attributes and their values in the Student class.
 - 5: Inside the `display_attributes` method, use the `vars()` function to get all attributes and their values
 - 6: Iterate through the attributes and print each attribute along with its value.
 - 7: END
-

4 IMPLEMENTATION

```
1 class Marks:
2     pass
3
4 class Student:
5     pass
6
7 st = Student()
8 m = Marks()
9
10 print(isinstance(st, Student))
11 print(isinstance(m, Marks))
12
13 print(issubclass(Student, object))
14 print(issubclass(Marks, object))
```

Listing 1: Checking the instances and sub-classes

```
1 class Student:
2     def __init__(self, name, marks):
3         self.name = name
4         self.marks = marks
5
6
7 s = Student("Shamim", 67)
8 print("Previous Value:", s.name, s.marks)
9 s.name = "Ahmed"
10 s.marks = 80
11 print("modified value:", s.name, s.marks)
```

Listing 2: Creating a class modify the attribute and print it

```
1 class Student:
2     def __init__(self, ID, Name):
3         self.ID = ID
4         self.Name = Name
5
6
7 s = Student("20190267", "Shamim")
8 print(s.ID, s.Name)
9 s.Marks = 82
10 print("New attribute=> Marks: ", s.Marks)
11 del s.Marks
12
13 print("\nAttribute 'Marks' deleted successfully.")
```

Listing 3: Adding new attribute and removing it

```
1 class Student:
2     def __init__(self, StudentID, StudentName):
3         self.StudentID = StudentID
```

```

4     self.StudentName = StudentName
5     self.studentClass = None
6
7     def dis_function(self):
8         print(f'Student name is {self.StudentName} ID is {self.StudentID}
9         and in {self.studentClass}')
10
11 student = Student("20190267", "Shamim")
12 student.studentClass = "Final year"
13
14 # Calling the display_attributes function
15 student.dis_function()

```

Listing 4: Adding new attribute and displaying using function

5 OUTPUT

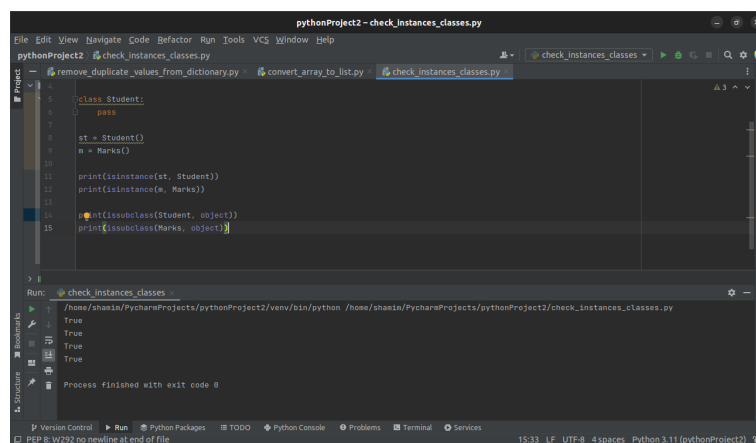


Figure 1: Checking the instances and sub-classes

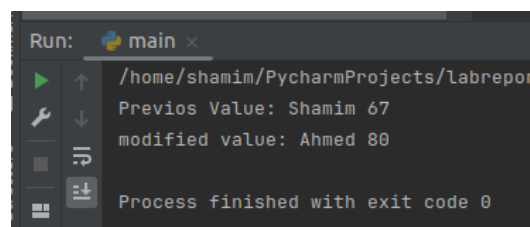
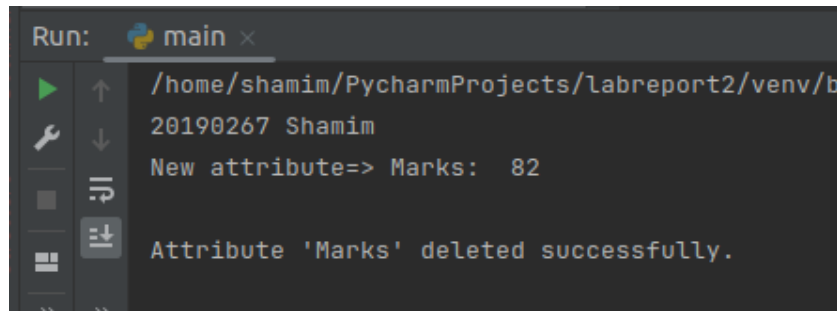
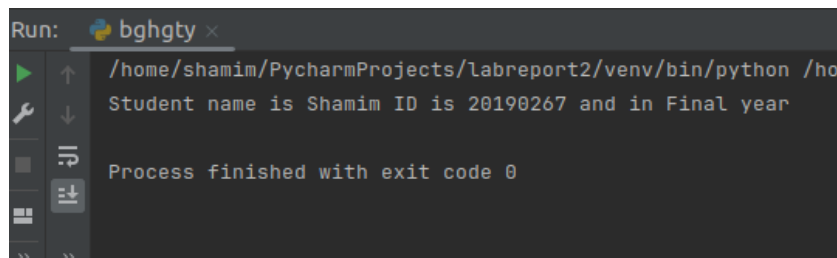


Figure 2: Creating a class modify the attribute and print it

A screenshot of the PyCharm Run console. The title bar says 'Run: main x'. The console output shows the following lines: a file path '/home/shamim/PycharmProjects/labreport2/venv/b', the student ID '20190267', the name 'Shamim', the text 'New attribute=> Marks: 82', and finally 'Attribute 'Marks' deleted successfully.'.

```
Run: main x
/home/shamim/PycharmProjects/labreport2/venv/b
20190267 Shamim
New attribute=> Marks: 82
Attribute 'Marks' deleted successfully.
```

Figure 3: Adding new attribute and removing it

A screenshot of the PyCharm Run console. The title bar says 'Run: bghgty x'. The console output shows the following lines: a file path '/home/shamim/PycharmProjects/labreport2/venv/bin/python /ho', the text 'Student name is Shamim ID is 20190267 and in Final year', and finally 'Process finished with exit code 0'.

```
Run: bghgty x
/home/shamim/PycharmProjects/labreport2/venv/bin/python /ho
Student name is Shamim ID is 20190267 and in Final year
Process finished with exit code 0
```

Figure 4: Adding new attribute and displaying using function

6 DISCUSSION & ANALYSIS

In this lab report, I successfully implemented all the four program was given which we can see in figure 1, figure 2 , figure 3 and figure 4. In this lab report for me the most difficult part was to was removing attribute but with the help of my course teacher I over come from that problem. Overall it was a grate experiment to completed.