# Green University of Bangladesh
# Department of Computer Science and Engineering (CSE)
**Faculty of Sciences and Engineering**
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**LAB REPORT NO: 02**
**Course Title: Data Mining Lab**
**Course Code: CSE-436**
**Section: D6(201)**

**Lab Experiment Name:** Python Programming (Loop, Functions, Class and Object)

**Student Details**

| | Name | ID |
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**Lab Date** : **29/09/2023**
**Submission Date** : **12/10/2023**
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**Lab Report Status**

**Marks: ……** **Signature: .....**
**Comments: .....** **Date: .....**

## 1. TITLE

Python Programming (Loop, Functions, Class and Object)

## 2. OBJECTIVES

The goal of this lab report is to improve your Python programming skills, specifically loops, functions, classes, and objects. This understanding will allow for practical Python application, with a focus on fundamental programming ideas.

## 3. PROCEDURE / ANALYSIS

We were given four tasks to solve in this report. The problems are focused on loop, function, class and object. So, it will be better to know about these topics before diving into solving the problems.

**Loop**: A Python construct used to repeat a block of code, with "for" and "while" loops for iteration.

**Function**: A function is a reusable piece of code that performs a certain task by accepting input and perhaps producing results.

**Class**: A class is a blueprint for constructing objects with properties and methods, making object-oriented programming easier.

To solve problem-01, we had to create instances of a class and had to check whether they are instances of the said classes or not by using **isinstance()** inbuild python method.

In problem-02 we just had to modify attributes values of a class by assigning new value to the attribute.

To solve problem-03 we called **del** method to delete attribute of the given class.

In problem-04 we used a function inside the class to display the attributes and their values.

## 4. IMPLEMENTATION

### First Problem:

```
class Student1:
    pass

class Marks:
    pass

zahid = Student1()
passed = Marks()
check_student = isinstance(zahid, Student1)
print("Zahid is a instance of class Student--", check_student)
check_marks = isinstance(zahid, Marks)
print("Zahid is a instance of class Marks--", check_marks)
check_student = isinstance(passed, Student1)
print("passed is a instance of class Student--", check_student)
check_marks = isinstance(passed, Marks)
print("passed is a instance of class Marks--", check_marks)
check_student_subclass = isinstance(Student1, object)
print("Student class is a subclass of object--", check_student_subclass)
```

```
check_marks_subclass = isinstance(Marks, object)
print("Marks class is a subclass of object--", check_marks_subclass)
student_subclass = isinstance(Student, object)
print("Student class is a subclass of object--", student_subclass)
marks_subclass = isinstance(Marks, object)
print("Marks class is a subclass of object--", marks_subclass)
```

**Second Problem:**

```
class Student:
    def __init__(self, name, marks):
        self.name = name
        self.marks = marks


e1 = Student("Zahid", 60)
print("Previos Value:", e1.name, e1.marks)
e1.name = "Hasan"
e1.marks = 80
print("modified value:", e1.name, e1.marks)
```

**Third Problem:**

```
class Student3:
    def __init__(self, ID, Name):
        self.ID = ID
        self.Name = Name


e1 = Student3("201902060", "Zahid")
print(e1.ID, e1.Name)
# adding new attribute to this class
e1.Marks = 82
print("New attribute=> Marks: ", e1.Marks)
# deleting attribute
del e1.Marks
print("Deleted attribute=> Marks: ", e1.Marks)
```

**Fourth Problem:**

```
class Student4:
    def __init__(self, StudentID, StudentName):
        self.StudentID = StudentID
        self.StudentName = StudentName

    def function(self):
        print(f'Student name is {self.StudentName} & ID is {self.StudentID}')


e1 = Student4("201902060", "Zahid")
e1.function()
```

## 5. OUTPUT

**Output for the first problem**

```
Zahid is a instance of class Student-- True
Zahid is a instance of class Marks-- False
passed is a instance of class Student-- False
passed is a instance of class Marks-- True
Student class is a subclass of object-- True
Marks class is a subclass of object-- True
```

Figure: 5.1

**Output for the second problem**

```
Previos Value: Zahid 60
modified value: Hasan 80
```

Figure: 5.2

**Output for the third problem**

```
201902060 Zahid
New attribute=> Marks:  82
Traceback (most recent call last):
  File "E:\Semester 232\Data Mining Lab\Lab_Manual_02\Lab_02_Report.py", line 55, in <module>
    print("Deleted attribute=> Marks: ", e1.Marks)
AttributeError: 'Student3' object has no attribute 'Marks'
```

Figure: 5.3

Here we can see an error as we are trying to print an attribute that is already deleted. So the console showing us an error massage.

**Output for the fourth problem**

```
Student name is Zahid & ID is 201902060
```

Figure: 5.4

## 6. DISCUSSION

In this report I tried to solve some basic given problems in python which are related to class and objects. Though the problems were easy but they were tricky so I had to took some help from online. Rather than that I had not face any trouble to complete this lab report.