# Lab – 1b Object and Class

Tasks:

1. (a) Create a class **Student** that has:

Student

\_\_id : int

\_\_name : str

score : float

set\_id (self, id)

set\_name (self, name)

set\_score (self, score)

display\_student (self)

Attributes:

\_\_**id** – to store the student id

\_\_**name** – to store the name of the student

**score** – to store the score of student

Methods:

set\_id – assign the id attribute in student object

set\_name – assign the name attribute in student object

set\_score – assign the score attribute in student object

display\_student - display student id, name and score

the sample output given

Answer:

A screen shot of a computer code

Description automatically generated

(b) Write the supplier class and client / driver program that will do the following:

1. Create three student objects (stud1, stud2 and stud3)
2. Set the id, name and score of stud1 to 310567, “Cheung Siu Ming” and 87.1
3. Set the id, name and score of stud2 to 451267, “Ng Wai Man” and 77.5
4. Set the id, name and score of stud3 to 789014, “Wong Sui Kai” and 83.4
5. Call student’s display\_student() method to display the student information
6. Find and print the average score of the three students

Sample Output:

Student id=310567, name=Cheung Siu Ming, score=87.1

Student id=451267, name=Ng Wai Man, score=77.5

Student id=789014, name=Wong Sui Kai, score=83.4

Average Score=82.67

Answer:

A screen shot of a computer program

Description automatically generated

(c) Improve the above program by enforcing data encapsulation of the attribute **score**.

Answer:

A screen shot of a computer program

Description automatically generated

1. Write a supplier class and client / driver program in the following parts below:

Employee

\_\_name : str

\_\_salary : float

set\_name (self, name)

set\_salary (self, salary)

raise\_salary (self, percentage)

display (self)

1. Create a class **Employee** that has:

Attributes:

\_\_**name** – to store the name of the employee

**\_\_salary** – to store the salary of the employee

Methods:

set\_name – to initialize the name attribute of employee object

set\_salary – to initialize the salary attribute of employee object

raise\_salary – to raise the salary of the employee by percentage given

display – to print the output with the sample given

Answer:

A computer screen shot of text

Description automatically generated

1. Complete the following client / driver program

|  |
| --- |
| class Employee:  #your answers in part(a)  if \_\_name\_\_=="\_\_main\_\_"  # 1 Create two employee objects – emp1 and emp2  # 2 Set the name and salary of emp1 to "Chan Tai Man" and 12000  # 3 Set the name and salary of emp2 to "Tam Ping Shing" and 13500  print ("Before:")  # 4 Print the employees information before their salary increased  # 5 Increase the salary of “Chan Tai Man” by 10%  # and the salary of “Tam ping Shing” by 5%  print ("After:")  # 6 Print the employees information after their salary increased |

Sample Output:

Before:

Employee name=Chan Tai Man, salary=12000

Employee name=Tam Ping Shing, salary=13500

After:

Employee name=Chan Tai Man, salary=13200

Employee name=Tam Ping Shing, salary=14175

Answer:

A screen shot of a computer program

Description automatically generated