

Inspiring Excellence

Course Code:	CSE111	
Course Title:	Programming Language II	
Classwork No:	03	
Topic:	OOP(Classes and objects)	
Number of tasks:	5	

You are the proud owner of a **mangoficent** mango orchard where you have different varieties of mango trees such as Fazlee, Langda, Harivanga, Himsagar, etc. But this year, demand for Gopalbhog and Amrapali is too high. To cater to this unsatisfied demand in the future, you have decided to plant these two varieties in your orchard.

(i) Now, based on the given driver code, you need to design a **MangoTree class**. Initially, when you plant a tree, it will have a height of 1 meter and the number of mangoes will be 0.

Driver code

Output:

- (ii) Suppose 5 years have passed and these small trees have grown larger and started to bear fruit.
 - A mango tree roughly grows 3 meters in one year.
 - Amrapali bears 15 mangoes per meter and Gopalbhog bears 10 mangoes per meter.

Now, create an instance method named **growthUpdate()** to match all the above conditions and generate the output below.

Driver code

Output:

Design the **Customer** class with the necessary properties so that the following output is produced.

[Hint:

- If the visitor's age is greater than 10, then the ticket price is 100 taka. Otherwise, 50 taka.
- A customer can't buy more than 3 tickets.]

Driver Code	Output		
<pre>print('1') customer1 = Customer() print('2') customer1.buyTicket('Bob', 23) customer1.buyTicket('Henry', 7) customer1.buyTicket('Alexa', 30) customer1.buyTicket('Jonas', 43) print('3') customer1.showDetails() print('4') customer2 = Customer() print('5') customer2.buyTicket('Harry', 60) customer2.buyTicket('Harry', 60) customer2.buyTicket('Tomas', 28) print('6') customer2.showDetails()</pre>	Welcome to ABC Memorial Park 2		

Suppose you are the CEO of "Green Phone". After a meeting with the R&D department and sales department, you decided to launch 3 smartphone series, 'A', 'M' and 'U' series. These series will get 2 years, 3 years and 4 years of software update respectively. Now, design a **GreenPhone** class with necessary properties so that it generates the output below for the given driver code.

[Hint: updatePhone() method will upgrade the android version of the phone.]

	Output
p1 = GreenPhone('A1', 12, 3) p2 = GreenPhone('M11', 12, 4) p3 = GreenPhone('U20', 12, 5) p1.showSpecification() print('2====================================	Company: GreenPhone Name: A1 d Version: 12 of Cameras: 3

TASK 4

1	<pre>class Student:</pre>	Output
2	<pre>definit(self):</pre>	
3	self.name = None	
4	self.cgpa = 0.0	
5	s1 = Student()	
6	s2 = Student()	
7	s3 = None	
8	s1.name = "Student One"	
9	s1.cgpa = 2.3	
10	s3 = s1	
11	s2.name = "Student Two"	
12	s2.cgpa = s3.cgpa + 1	
13	s3.name = "New Student"	
14	<pre>print(s1.name)</pre>	
15	<pre>print(s2.name)</pre>	
16	<pre>print(s3.name)</pre>	
17	<pre>print(s1.cgpa)</pre>	
18	<pre>print(s2.cgpa)</pre>	
19	<pre>print(s3.cgpa)</pre>	
20	s3 = s2	
21	s1.name = "old student"	
22	s2.name = "older student"	
23	s3.name = "oldest student"	
24	s2.cgpa = s1.cgpa - s3.cgpa + 4.5	
25	<pre>print(s1.name)</pre>	
26	<pre>print(s2.name)</pre>	
27	<pre>print(s3.name)</pre>	
28	<pre>print(s1.cgpa)</pre>	
29	<pre>print(s2.cgpa)</pre>	
30	<pre>print(s3.cgpa)</pre>	

1	class Test3:
2	<pre>definit(self):</pre>
3	self.sum, self.y = 0, 0
4	<pre>def methodA(self):</pre>
5	x, y = 2, 3
6	msg = [0]
7	msg[0] = 3
8	y = self.y + msg[0]
9	<pre>self.methodB(msg, msg[0])</pre>
10	x = self.y + msg[0]
11	self.sum = x + y + msg[0]
12	<pre>print(x, y, self.sum)</pre>
13	<pre>def methodB(self, mg2, mg1):</pre>
14	$\mathbf{x} = 0$
15	self.y = self.y + mg2[0]
16	x = x + 33 + mg1
17	self.sum = self.sum + x + self.y
18	mg2[0] = self.y + mg1
19	mg1 = mg1 + x + 2
20	<pre>print(x, self.y, self.sum)</pre>

Write the output of the	x	у	sum
following code:		-	
t3 = Test3()			
t3.methodA()			