

Lab Exercise 5: Class Relationship

Question 1

The output given in Figure 1 is developed using two classes name `Student` and `Course`. It calculates and displays the student GPA based on the information given by a user.

```
Please Enter Student Name:
Ali
Please Enter Student Metric Number:
CD09100
Please Enter Student Programme Name:
BCG
Please Enter Student Year of Study:
2

Please enter course name:
OOP
Please enter course credit:
3
Please enter course grade:
A

Please enter course name:
HCI
Please enter course credit:
3
Please enter course grade:
B

Please enter course name:
DBS
Please enter course credit:
3
Please enter course grade:
C

Name:Ali      Metric No:CD09100      Year:2      Programme:BCG

Course:      Course Credit:      Grade:      Point:
  OOP          3          A          4
  HCI          3          B          3
  DBS          3          C          2

GPA:3.00
```

Figure 1

- Design and draw UML diagram for `Student` class and `Course` class that can produce output as in Figure 1. Use your own data members/attributes and methods/behaviors for

Student and Course. The equation for calculating GPA is given in Figure 2. The points that correspond to the course grade is given in Figure 3

$$gpa = \frac{totalPoint}{totalCredit}$$

Here the *totalPoint* is given:

$$totalPoint = totalPoint + (Course\ Point\ based\ on\ Course\ Grade \times Course\ Credit)$$

Figure 2

A = 4.0
B = 3.0
C = 2.0

Figure 3

Question 2

Figure 4 shows receipt for BLUE WAVE LAUNDRY Company

Based on the Figure 4, design the UML class diagram. Your design must consist of Company class, Customer class and Receipt class.

BLUE WAVE LAUNDRY		SNS IXORA ENTERPRISE			
		B11Q,Ground Floor, Jalan Bukit Sekilau, 25200, Kuantan, Pahang.			
		Tel:09-5556666, Fax:09-5556661			
		Receipt No: _____			
Name: _____		Date Receive: _____			
No. Tel: _____		Date Ready For Collection: _____			
Services	Quantity (KG)	Price (RM)		Amount (RM)	
DRY CLEANING:					
Baju Kurung					
Baju Melayu					
Coat/Blazzer/Jacket					
Trousers					
Shirt					
Others:					
i.					
ii.					
WASH & DRY:					
Normal Clothing					
Comforter					
Bed Sheet					
OTHERS:					
i.					
ii.					
iii.					
				TOTAL	

Figure 4

Source:

Final Year Question Object Oriented Programming for Session 2011/2012 Semester 1