
Exercise 3

Aggregation, Composition & Inheritance

Question

Faculty of Engineering will be organizing a competition that is open to all UTM students. The competition is meant to provide a platform to the students to exhibit their idea. Some important notes regarding the competition:

- It is an individual participation.
- Each student must have a project.
- Each student has to find an advisor which can be any of UTM staff regardless of their position. That means, the adviser can a lecturer, technician, research officer. However, only one advisor is allowed for each student.
- Also, a staff can only advice one student.

You are hired by the faculty to develop a program to manage the records of the participants. Suppose the class design has been done by other parties as shown in Figure 1. Write a complete C++ program. The program should produce output like shown in Figure 2.

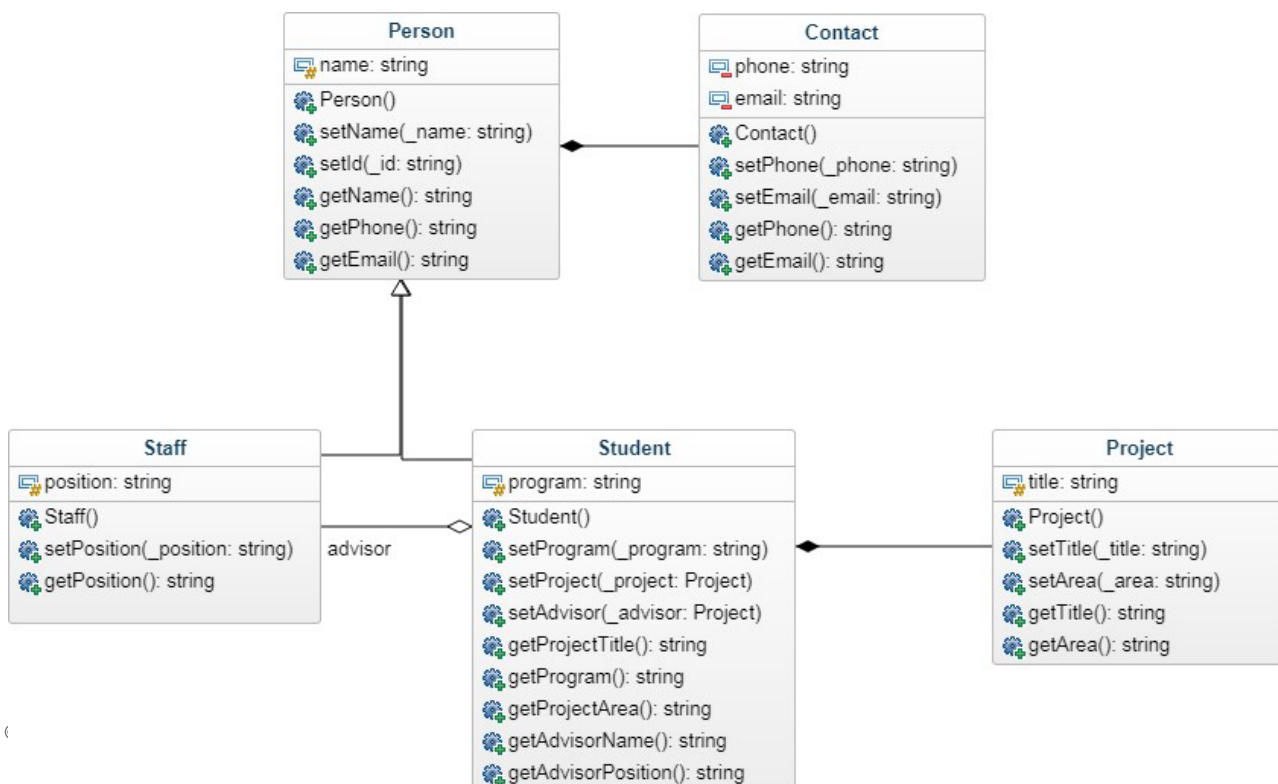


Figure 1: The class diagram

----- First Printing -----

Student # 1

Name : Lim Sew Ying
Phone : 010-897634045
Email : lsying1212@live.utm.my
Project Title : Smart Dustbin
Advisor's Name :
Advisor's Position :

Student # 2

Name : Abu Bakar Razali
Phone : 011-1210000
Email : abraz78@live.utm.my
Project Title : Money Recognition for Blind People
Advisor's Name :
Advisor's Position :

Student # 3

Name : Nur Amalina Muhammad
Phone : 012-9000123
Email : nama978@live.utm.my
Project Title : Dengue Testing Kit
Advisor's Name :
Advisor's Position :

----- Second Printing -----

Student # 1

Name : Lim Sew Ying
Phone : 010-897634045
Email : lsying1212@live.utm.my
Project Title : Smart Dustbin
Advisor's Name : Dr. Siti Zubaidah Rosli
Advisor's Position : Research Officer

Student # 2

Name : Abu Bakar Razali
Phone : 011-1210000
Email : abraz78@live.utm.my
Project Title : Money Recognition for Blind People
Advisor's Name : Mr. Qamarool Zaman
Advisor's Position : Senior Technician

Student # 3

Name : Nur Amalina Muhammad
Phone : 012-9000123
Email : nama978@live.utm.my
Project Title : Dengue Testing Kit
Advisor's Name : Prof. Dr. Muhammad Roslan Abdullah
Advisor's Position : Lecturer

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----- Third Printing -----  
  
Student # 1  
Name           : Lim Sew Ying  
Phone          : 010-897634045  
Email          : lsying1212@live.utm.my  
Project Title  : Smart Dustbin  
Advisor's Name : Mr. Qamarool Zaman  
Advisor's Position : Senior Technician  
  
Student # 2  
Name           : Abu Bakar Razali  
Phone          : 011-1210000  
Email          : abraz78@live.utm.my  
Project Title  : Money Recognition for Blind People  
Advisor's Name : Dr. Siti Zubaidah Rosli  
Advisor's Position : Research Officer  
  
Student # 3  
Name           : Nur Amalina Muhammad  
Phone          : 012-9000123  
Email          : nama978@live.utm.my  
Project Title  : Dengue Testing Kit  
Advisor's Name :  
Advisor's Position :
```

Figure 2: Expected output

Submission

- Only one member from each pair needs to do the submission.
- Submission must be done on elearning. Any other means such as email, telegram, google drive will not be accepted at all.