

American International University-Bangladesh

Object Oriented Programming 1 (JAVA)

Guidelines:

***** Read the guidelines carefully*****

1. You must upload your assignment to portal within **21 Nov 2020 (Saturday) 11:30 PM**.
2. You should upload pdf document (**.pdf**).
3. Rename your (.pdf) file with your student id. For example: if your student id is 17-20023-1 then your file name should be like this **“17-20023-1.pdf”**.
4. **Do not upload multiple files**. There will be only one pdf file per student.
5. Any kind of **dishonesty** will not be tolerated. If found, you will get straight **0**.

Questions:

1. a) What do you understand by platform independence?
b) Briefly describe how java achieves platform independence?
2. a) What is type casting? Explain with example.
b) Why we need to provide the alphabet **“f”** after every float value (for example **3.5f**)?
3. How **this** keyword prevents member variable and local variable name conflict issue? Explain with example.
4. a) What is a constructor in class?
b) Describe with example:
 - a. Local Variable
 - b. Instance Variable
 - c. Class Variable
5. a) What are the ways to create string in java? Explain with example.
b) What is string pool? Explain with example.
c) Why string is immutable in java? Explain with example.
6. What are jagged arrays in java? Explain with example.
7. a) What is inheritance?
b) Describe different categories of inheritance with real and valid example.
8. What is the difference between inheritance and encapsulation?
9. Write a Java program to store blood donor information and count how many donors have registered through the donation process. (You must use **class variable** concept)

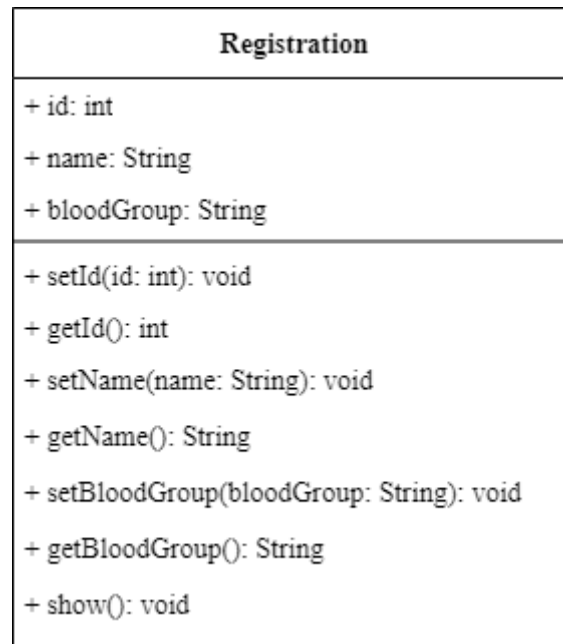


Fig 1: Class Diagram



Fig 2: Objects (Sample)

N.B: You **cannot modify** the definition (class name, variable name, method name) of class and you **can add at most one variable** to the registration class.

Sample Output: Based on the given example above, your output can be something similar like this.

id: 1, name: ABC, bloodGroup: B+

id: 2, name: DEF, bloodGroup: A+

id: 3, name: GHI, bloodGroup: O+

Number of donors registered is 3.

10. Write a Java program to store employee information and calculate the following things:
- Max Salary
 - Min Salary
 - Average Salary

(Hints: Use **Array of objects**)

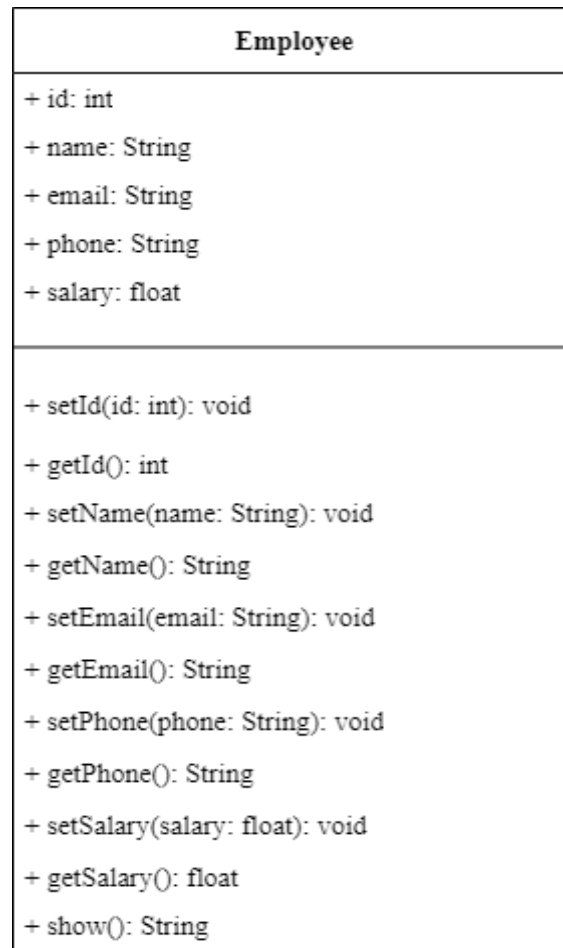


Fig 1: Class Diagram

N.B: You **cannot modify** the definition (class name, variable name, method name) of class. But you can add **constructors** if you want. You need to store at least **5** employee information. You must follow the **encapsulation** principal.