

UNIVERSITY OF COLOMBO SCHOOL OF COMPUTING

IS2104 - Rapid Application Development 2020

Tutorial 09



Instructions:

- For each step in the assignment given below, include screen shots of your terminal in a pdf document created with step number with relevant screenshot. Upload a zipped folder (named with your “<index_06>.zip”) including your **Report**, “.java” and “.javac” files.
- Report name should be <Index Number>. pdf
E.g.18000000.pdf
- Use appropriate text editor (E.g. – Notepad , Notepad ++).
- You are not allowed to use IDEs.
- Any form of plagiarism or collusion is not allowed.

In this tutorial, we are going to learn about the Abstraction with java.

Objective

- Learn how to implement abstract class
- Learn how to implement abstract methods

The given video tutorial explains how to create an abstract class using the example discussed in the lecture 12.

Assignment 09

1. Complete the discussed example by implementing the Shape abstract class with Circle, Rectangle and Triangle sub classes.
 - a. Shape abstract class and Circle class was explained in the video tutorial 09. All you have to do is implement two more subclasses (Rectangle ,Triangle) which are extend Shape class.
 - b. Implement the “calArea” and “toString” abstract methods accordingly and print the values as shown in video tutorial 09.

2. Create a “BankAccount” abstract class with following attributes and methods.

- a. Attributes:
 - i. accNumber(int)
 - ii. accountType(String)
 - iii. accHoldersName(String)
 - iv. branch(String)
 - v. isActiveAccount(boolean),
 - vi. currentBalance.

* (please note that all the accounts are in Kandy branch and the isActiveAccount is true.)

- b. Methods:
 - i. getBalance(double) → which is concrete method prints currentBalance.
 - ii. cashDeposit(double) → which is concrete method updates current balance.
 - iii. *calInterest(double)* → abstract method add interest to currentBalance.
 - iv. *toString(String)* → abstract method returns accountTtype, interestRate and currentBalance.

3. Create 03 classes “Savings”, “Current”, “FD” ,which are extends BankAccount with the relevant attributes and Methods.

Class	accountType	interestRate(perYear)
Savings	"S"	3%
Current	"C"	1.2%
Fixed Deposit	"FD"	8%

4. The ***callInterest*** method Calculate the interest for one year and update the current balance. Implement abstract methods accordingly.
5. Create 03 different instances from all 03 sub classes with a currentBalance of 100,000.00.
6. Get the balance.
7. Deposit 2000 for each account.
8. Print the details using toString method.
9. Calculate the interest and repeat step 07.