

CSE201 Advanced Programming

Lab Assignment 06

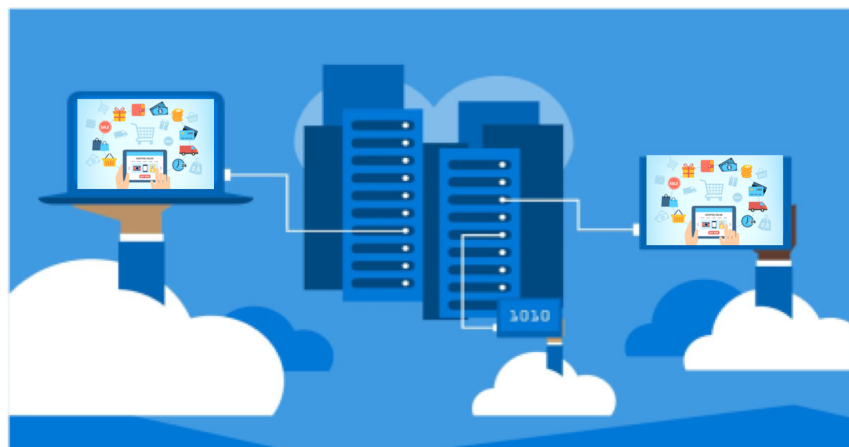
IIIT-Delhi. 27th Sept 2018. Due by 11:59 pm on 29th Sep 2018

This is a take-home lab assignment. No extensions whatsoever will be provided. Any submission after the deadline will not be evaluated. If you see any ambiguity or inconsistency in a question, please seek a clarification from the teaching staff. Please read the entire text below very carefully before starting your implementation.

Plagiarism: All submitted lab assignments are expected to be the result of your individual effort. You should never misrepresent someone else's work as your own. In case any plagiarism case is detected, it will be dealt as per IIITD plagiarism policy and without any relaxations: <https://www.iiitd.ac.in/sites/default/files/docs/education/AcademicDishonesty.pdf>

Please note that you are **not** allowed to discuss the design/solution of the lab assignment (e.g., backpack discussions, etc.). Anyone who is found doing this will be treated as plagiarism case.

I/O Streams, Serialization, Deserialization and JUnit Testing



Amacon.com (Version 2.0)

Congratulations! Amacon.com is very pleased with your software Version 1.0 (Lab5) and now they have decided to give you another contract to implement the Version 2.0 of the Amacon software. Note that you must use the Amacon.com software you developed in Lab5 to implement this Version 2.0. Just in case if you did not submit Lab5, you can still attempt this Lab6 but you will have to first implement Lab5 before you start Lab6 implementation (using someone else's code is plagiarism). However, we will only evaluate the code specific to Lab6 but not Lab5.

In this Version 2.0, you have to extend the Amacon.com platform to make it more user-friendly and to ensure that the system is also foolproof. These new set of requirements from Amacon.com are as following:

1. Version 2.0 platform should welcome recurring customers. It should be able to identify each customer by a unique username (case sensitive) and save the customer's cart state after each session. Platform should allow the returning customer to recall their cart the next time they log in Amacon.com.
2. Version 1.0 platform is extremely impractical for the admins as they have to re-initialise the database before every admin sessions. Version 2.0 platform should maintain the last modified state of its database across all admin and customer sessions.
3. Version 2.0 platform should be robust to corner cases and should never crash. JUnit based unit testing is a good way of testing your platform effectively and comprehensively. You have to design a **JUnit Test Suite** for the Amacon system that contains different JUnit test cases for testing different functionality of Amacon.com Version 2.0 as mentioned below:
 - a. Test Cases to validate user defined Exceptions mentioned in Version 1.0:
 - i. Inserting the same product at the same path.
 - ii. Deleting a product which does not exist.
 - iii. Searching for a product which does not exist.
 - iv. Adding a product to the cart which is out of stock
 - v. Checking out the cart when the customer is out of funds
 - b. Test Cases related to database modifications in Version 2.0:
 - i. Test the serialization of database
 - ii. Test the serialization of customer cart