Web Technologies

Lab 03 **Marks 100**

Instructions
Work on this quiz/lab individually.

You are **NOT** allowed to use internet, mobile phone.

You are **NOT** allowed to borrow anything from your peer student.

What you have to do
Program the following tasks. The name of your files will be according to the task given in this lab.

Task [100]

You are required to write a program for banking applications to store customer records. The program should have the following classes:

Write a **Customer** class with the following attributes:

- `name` - a string representing the name of the customer.
- `id` - a string representing the ID of the customer.
- `age` - an integer value indicating the age of the customer.
- `balance` - a double value indicating the amount saved by the customer.

Provide a parameterized constructor function to initialize the instance variables.

Write a class **Bank** to contain a collection of Customer objects (either using a simple array or an ArrayList). The bank class must provide the following functions:

addCustomer(): It will allow the user to add a new customer to the bank by providing the customer's name, ID, age, and balance. If a customer with the same ID already exists, throw a custom exception **duplicateCustomerException**.
You must need to validate the customer's age. It shall be between 18 and 65 (inclusive), throw a custom exception **invalidAgeException** otherwise.
Additionally, the initial balance shall be greater than 0, throw a custom exception **lowBalanceException** otherwise.

searchCustomer(): It will allow the user to search customer by providing the customer ID. If the customer ID does not exist, throw a custom exception called **invalidCustomerIDException**, display the customer's details otherwise.

Write a **main()** to show the execution of your code.

Instructions:

- Override toString() in each of the custom exception classes.
- Morning Section: Please implement the lab using ArrayList.
- Morning Section: Please implement the lab using a simple array.

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