

Optional Assignment 01

Q1. (Credit Limit Calculator)

Develop a Java application that determines whether any of several department-store customers has exceeded the credit limit on a charge account.

For each customer, the following facts are available:

- a) account number
- b) pending balance at the beginning of the month
- c) total of all items charged by the customer this month
- d) total of all credits applied to the customer's account this month
- e) allowed credit limit.

The program should input all these facts as integers, calculate the new balance (= beginning balance + charges – credits), display the new balance and determine whether the new balance exceeds the customer's credit limit. For those customers whose credit limit is exceeded, the program should display the message "Credit limit exceeded".

For eg -

Allowed Credit = 50000

total items charged = 25000

total all credit applied in this month = 10000

pending balance at the beginning of the month = 5000

new balance for next month = $5000 + 25000 - 10000 \Rightarrow 20000 < \text{Allowed Limit}$

Q2. A small airline has just purchased a computer for its new automated reservations system.

You've been asked to develop the new system. You're to write an application to assign seats on each flight of the airline's only plane (capacity: 10 seats).

Your application should display the following alternatives:

Please type 1 for First Class and Please type 2 for Economy.

If the user types 1, your application should assign a seat in the firstclass section (seats 1–5). If the

user types 2, your application should assign a seat in the economy section (seats 6–10). Your

application should then display a boarding pass indicating the person's seat number and whether it's in the first-class or economy section of the plane.

Use a one-dimensional array of primitive type boolean to represent the seating chart of the plane.

Initialize all the elements of the array to false to indicate that all the seats are empty. As each seat is assigned, set the corresponding element of the array to true to indicate that the seat is no longer available.

Your application should never assign a seat that has already been assigned. When the economy section is full, your application should ask the person if it's acceptable to be placed in the first-class section (and vice versa). If yes, make the appropriate seat assignment. If no, display the message "Next flight leaves in 3 hours."