

1. The program provided (Q1.c) is supposed to count the frequency of each element of an array. However, the codes can be more readable if a function is being written. Try to run the program and understand the codes. Write a function WITHOUT return value which have THREE parameters:

void occurrence (const int a[], int frequency[], int size);

The result should be printed in the main() rather than in the function itself.

Requirement:

- i. You are **NOT** allowed to declare more than **THREE** local variables in the function.
 - ii. You are **NOT** allowed to make **EXTENSIVE** changes in the original code. [10 marks]
2. Write a program that simulates an online train ticketing system. Suppose that there are TWO seat layouts for Coach A - 17 Business class seats and Coach B - 38 Gold class seats. The program should display a menu to perform the following operations:
 - i. Buy a ticket. The program should let the passenger to select how many tickets to purchase, the ticket type (B for business and G for gold) and whether the preferred seat would be aisle or window. All seats are to be assigned RANDOMLY (srand())based on their choice (aisle or window). The price of the ticket would be:
Business class – RM 100
Economy class – RM 50

All purchased tickets are subjected to 6% sales service tax with an additional departure tax of RM 10 each. Example, a nett price for 1 Business class ticket would be RM 116.
 - ii. Ticket cancellation. The program should read seat number (e.g. 5A, 4B, etc) and cancel the reservation. Only half of the full fare ticket shall be refunded which does not include taxes which are not refundable.
 - iii. Display a diagram to demonstrate the reserved and free seats with the total income.
 - iv. Program termination.

Requirement:

Compulsory functions:

TWO functions WITH return value:

return type **buy**(two dimensional array type, char type, integer type - seats); //
return the total amount of the ticket

return type **refund**(two dimensional array type, char type, integer type - seats); // return the amount of total refund

ONE function WITHOUT return value:
void **display**(two dimensional array type);

You may have a few **USEFUL** additional functions to make the program looks neat.

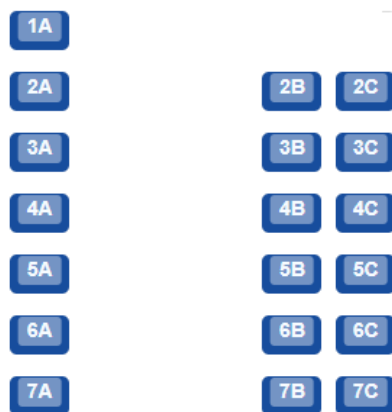
[40 marks]

**You are not allowed to declare any global variables except constant value.
Not allow to use pointer.**

Evaluation will be based on:

**Correctness/structure of your program
Comments -including your name
Input/Output**

DURATION:1 Hour 30 Minutes



Business Class Seat Map Coach A



Gold Class Seat Map Coach B