

CENG 111 – Computer Programming I
FALL 2022 – 2023

Homework # 2

Due Date: 7 January 2023 until midnight

- Imagine you simulate selling tickets to a concert. There are 4 categories each having 40 seats. (Level A, B, C, D)
- You need a menu based program for managing the ticket sales.
- You should do the following operations:
 - Check current available and sold seats at each level
 - Update available seats
 - Update ticket prices
 - Sell a ticket from the requested level (by checking available seat control)
 - Check current cash information
- **Notes :**
 - **Initial available seat :**
 - Level A : 40
 - Level B : 40
 - Level C : 40
 - Level D : 40
 - **Initial ticket prices :**
 - Level A : 100
 - Level B : 80
 - Level C : 60
 - Level D : 40
- Program will continuously get user's request and perform the required operation until the user chooses to Quit.

Use the following functions :

- **printMainMenu():** Prints main menu (as seen in the sample run), inputs user's request and returns it to the calling function.
- **printSeatInformation():** Receives and prints current seat information (as seen in the sample run)
- **printTicketPrices():** Receives and prints current ticket prices (as seen in the sample run)
- **printCashInfo():** Receives and prints current cash information (as seen in the sample run)
- **seatControl():** Receives two parameters "seatInfo" and "numberOfSold" if stock is enough returns 1, if not returns 0.
- **updatePrices():** Changes seat prices. It receives current ticket price and inputs the new price from user and updates and returns it to the calling function.
- **sell():** It receives the required number of tickets and available seat for the required ticket level as a parameter. It updates and returns the updated available seat to the calling function if there are enough seats and outputs the bill. It outputs a message if the seats cannot be sold.
- **CalculateBill():** Receives "ticketPrice" and "numberOfSold" as parameters, returns ticketPrice x numberOfSold and outputs the bill as given in the sample run.

SAMPLE RUN : (inputs is marked as bold)

```
-----
OPERATIONS:
-----
1. Seat Info
2. Update Prices
3. Sell a ticket
4. Current cash info
5. Quit

Select your operation : 3

*****
Current Seat Information :
      Level A : 40
      Level B : 40
      Level C : 40
      Level D : 40

Current Price Information :
      Level A : 100
      Level B : 80
      Level C : 60
      Level D : 40

Select level : A
Enter number of tickets for Level A seat : 2
2 Seats from Level A is sold
Your bill is 2*100=200 TL

*****
Current Seat Information :
      Level A : 38
      Level B : 40
      Level C : 40
      Level D : 40
*****

-----
OPERATIONS :
-----
1. Continue to sell a ticket
2. Return to main menu

Select your operation : 2

-----
OPERATIONS :
-----
1. Seat Info
2. Update Prices
3. Sell a ticket
4. Current cash info
5. Quit

Select your operation : 2
*****
Current Price Information :
      Level A : 100
      Level B : 80
      Level C : 60
      Level D : 40

*****
Select level to update : B
Enter new price for Level B : 85
Level B ticket price is updated to 85

*****
Current Price Information :
      Level A : 100
      Level B : 85
      Level C : 60
      Level D : 40
*****
```

OPERATIONS :

1. Continue to update price
2. Return main menu

Select your operation : 2

OPERATIONS :

1. Seat Info
2. Update Prices
3. Sell a ticket
4. Current cash info
5. Quit

Select your operation : 4

Current cash information : 250 TL

OPERATIONS :

1. Seat Info
2. Update Prices
3. Sell a ticket
4. Current cash info
5. Quit

Select your operation : 3

Current Seat Information :

Level A : 38
Level B : 40
Level C : 40
Level D : 40

Current Price Information :

Level A : 100
Level B : 85
Level C : 60
Level D : 40

Select level : A

Enter number of tickets for Level A seat : 2

2 Seats from Level A is sold

Your bill is 2*100=200 TL

Current Seat Information :

Level A : 36
Level B : 40
Level C : 40
Level D : 40

OPERATIONS :

1. Continue to sell a ticket
2. Return to main menu

Select your operation : 2

OPERATIONS :

1. Seat Info
2. Update Prices
3. Sell a ticket
4. Current cash info
5. Quit

Select your operation : 3

Current Seat Information :

Level A : 36

Level B : 40

Level C : 40

Level D : 40

Current Price Information :

Level A : 100

Level B : 85

Level C : 60

Level D : 40

Select level : A

Enter number of tickets for Level A seat : 40

SORRY... Level A tickets are out of stock.

OPERATIONS :

1. Continue to sell a ticket
2. Return main menu

Select your operation : 2

OPERATIONS :

1. Seat Info
2. Update Prices
3. Sell a ticket
4. Current cash info
5. Quit

Select your operation : 5

Current cash information : 2500TL

Bye!

NOTES:

- Provide your solution as a .c file named as **id_name_surname.cpp**.
- Your program should;
 - include comments to explain your program.
 - be easy to follow.
 - work for all possible inputs.
 - include proper input and output messages as given in the sample run.
 - **be your own work!!!! Programs that do not run properly according to the sample run WILL NOT BE GRADED!!**
 - **Late homeworks submitted by email will NOT BE ACCEPTED!**