

Programming Fundamentals
Mid Term - Spring 2022

Time: 90 minutes

Total Marks [45]

INSTRUCTIONS

1. This is a **CLOSED BOOK** and **CLOSED NOTES** exam; Cheat sheet is **NOT ALLOWED**.
2. Attach this question paper with your answer sheet.
3. There are a total of 3 questions and each question carry equal marks.

Question 1: **15**

Create a function that receives a CString of size 50, containing only upper case and lower case alphabets. The function will sort the array such that all the lower case alphabets appear before all the upper case alphabets in the CString. (Note: ASCII Code of 'a' is 97 and 'A' is 65)

Sample Input:

Input String: cXdaHkIM

output: cdaklXHM

Question 2: **15**

The manager of a football stadium wants you to write a program that calculates the total ticket sales after each game. There are four categories of tickets – box, sideline, premium and general admission. After each game data is stored in a file in the following format.

Data.txt

categories	ticketPrice	numberOfTicketsSold
box	250	750
sideline	100	2800
premium	50	35750
general	25	1875

The first line contains columns heading.

The second line indicates the type of the ticket is box, its price is \$250 and 750 tickets were sold at that price.

Design a menu based program to implement the following options. Perform the given tasks using functions (make as many functions as possible).

1. Search the category with the maximum number of tickets sold.

2. Display only those categories whose total sales exceeds 10,000
3. Calculate total number of tickets sold

Sample Input 1:

Please Select One of the following options from the menu given below:

1. Search the category with maximum number of tickets sold
2. Display categories/y along with their total sales , whose total sales exceeds 100000
3. Calculate total Number of tickets sold

Input your desired option: 1

Category with Maximum Tickets Sold: premium

Do you want to continue (y/n): y

Input your desired option: 2

sideline has total sales 280000

premium has total sales 1787500

Do you want to continue (y/n): y

Input your desired option: 3

Total tickets sold: 41175

Do you want to continue (y/n): n

Question 3:

15

- a. Write only the prototype of a function that receives an int-value, an int-reference as parameters and return a float value.
- b. Write down a function code only that swaps two values passed by reference.
- c. Write down the output of the following code:

<pre>void fun(int &a, int &b, int &c) { a= a * 2; b= b * a--; c= c * ++b; }</pre>	<pre>int main() { int x=1 , y=3 , z=7; fun(x,y,z); cout<<"x="<<x<<" ,y="<<y<<" ,z="<<z; return 0; }</pre>
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