

LOVELY PROFESSIONAL UNIVERSITY

Academic Task No. 1

School: SCA

Faculty of: LFTS

Course Title: PROGRAMMING IN JAVA-LAB

Course Code: CAP680

Max. Marks: 30[10 Marks each]

Date of Allotment: 17th Feb. 2022

Last Date of Submission: 25th Feb. 2022

Important Guidelines:

1. All questions in this Academic Task are compulsory.
2. It is mandatory to attempt all questions of the assignment in your own handwriting on A4 size sheets/pages with a blue color ink pen. Any other mode of attempt (typed or printed codes or table) except hand written/drawn will not be accepted/considered as valid submission(s) under any circumstances.
3. Every attempted sheet/page should carry clear details of student such as Name, Registration number, Roll number, Question number and Page number. The page numbers should be written clearly on the bottom of every attempted sheet in a prescribed format as: for page 1; **Page 1 of 4**, for page 2; **Page 2 of 4**, for page 3; **Page 3 of 4** and for page 4; **Page 4 of 4**, in case your assignment/document is of 4 pages.
4. After attempting the answer(s), student needs to take photograph of each of these answer sheets/pages and needs to convert the jpeg format images into a sequential single pdf format document (can be done with many free online available converters).
5. This PDF file should be uploaded onto the UMS interface on or before the last date of the submission.
6. Refrain from indulging into plagiarism as copy cases will be marked zero
7. For every program it is mandatory to give proper documentation.

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SET-1

Q1: Given that an EMPLOYEE class contains the following members: **Date Members:** EmployeeID, EmployeeName, BasicSalary, DA, IncomeTax, NetSalary **Member Functions:** to read data, to calculate NetSalary and to print data members; Write a program to read data of 5 employees and compute the NetSalary of each employee (DA = 52% of Basic and Income Tax = 30% of the gross salary).

Q2: Write a program of sorting an array. Declare single dimensional array and accept 5 decimal values from the user. Then sort the input in descending order and display output.

Q3: Write a program to calculate the row-wise and column wise sum of an array. The size of the array and values of the array are to be taken at run time.

SET-2

Q1: Write a program to perform following operations on a given number and check whether the resulted value is prime or not?

- a. Sum of given number
- b. Product of given number

For e.g: Given number is: 1231

Sum of number is:(1+2+3+1) 7 is a prime no.

Product of number is:(1*2*3*1) 6 is not a prime no.

Q2: Write a program to display a color name depending on color value using switch case. Ask color value from user.

For e.g: Color Value: #1111

Color Name: White

Color Value: #0000

Color Name: Black

Q3: Write a program to create two multidimensional arrays of same size. Accept value from user and store them in first array. Now copy all the elements of first array to second array and print output.

SET-3

Q1: Suppose there is the string "Lovely Professional University" define some methods which will be use to perform

- a. finds the total no. of characters
- b. finds the position of string University
- c. extracts the string Lovely
- d. replaces Lovely with lovely (first letter 'l' in small case)
- e. changes all characters in the string in Upper case.

Q2: Create a class named 'Time' with data members (hours, mins, secs). Define methods in this class named 'hourConvertor', 'minConvertor' and 'secConvertor'. Calculate total hours, mins and secs for any integer value (in days).

For eg:

Input : 2 (days)

output: total_hours:48

total_mins:2880

total_secs:172800

Q3: Write a Java program that checks whether a given string is a palindrome or not.

Ex: MADAM is a palindrome?

SET-4

Q1: Declare an array of 5 STUDENT objects. Using appropriate functions, find the average of the two better marks for each student.

Q2: The Fast Freight Shipping Company charges the following rates:

Weight of Package (in Kilograms) Rate per 500 Miles shipped

2 KG or less: \$1.10

Over 2 Kg but not more than 6 Kg: \$2.20

Over 6 KG but not more than 10 Kg: \$3.70

Over 10 KG but not more than 20 KG: \$4.80

Write a program that asks for the weight of the package and the distance it is to be shipped, and then displays the charges.

Input validation:

- Do not accept values of 0 or less for the weight of the package.
- Do not accept weights of more than 20 Kg (this is the maximum weight the company will ship).
- Do not accept distances of less than 10 miles or more than 3,000 miles.

Q3: Write a Java program to multiply two given matrices?

SET-5

Q1: Suppose you are planning to go to park so you are going to check tickets criteria online. The ticket rates details have been given

*If children below 10 are not allowed to swing

*If age is between 10 to 15 allowed to swing and getting 10 % discount

*If age is between 15 to 20 allowed to swing and getting 5 % discount

*If age is more than 20 not then not eligible for swing and discount

The age of person will run until you enter the age of last family member and then calculate the total charge amount after entering each person's age. Assume price of ticket is 100 Rs. each person.

Q2: Write a program in Java, define a STUDENT class with RegNo, Name and Marks in 3 CA of a subject. Define one function to find the best two CA marks for student.

Q3: You have to generate electricity bill for a customer with the details as give below:

Customer ID, Customer Name, Customer Address, Contact No, Units Consumed, Total payable amount. Following are the norms to calculate the unit amount:

- a) for initial 100 units it will cost 6 rupees per unit
- b) for next 100 units it will cost 8 rupees per unit
- c) for next all units it will cost 10 rupees per unit

SET-6

Q1: Write a program that computes the tax and tip on a restaurant bill for a person with a Rs. 45 meal charge. The tax should be 6.75% of the meal cost. The tip should be 15% of the total after adding the tax. Display the meal cost, tax amount, tip amount, and total bill on the screen.

Q2: A Booksellers has a book club that awards points to its customers based on the number of books purchased each month. The points are awarded as follows:

- If a customer purchases 0 books, 0 points are earned.
- If a customer purchases 1 book, 5 points are earned.
- If a customer purchases 2 books, 15 points are earned.
- If a customer purchases 3 books, 30 points are earned.
- If a customer purchases 4 or more books, 60 points are earned.

Write a program that asks the user to enter the number of books that he or she has purchased this month and then display the number of points awarded.

Q3: Swati bought 600 shares of stock at a price of Rs 20 per share. She must pay her stock broker a 2% commission for the transaction. Write a program that the display the following:

- The amount paid for the stock alone (without the commission)
- The amount of the commission
- The total amount paid

SET-7

Q1: Create an app in which user enter his NTS and F.Sc marks and your program will help student in selection of university. Based on these marks Student will be allocated a seat at different department of different university

University Name	Departments	Criteria
Oxford University	IT	Above 70% in Fsc. and 70 % in NTS
Oxford University	Engg	Above 70% in Fsc. and 60 % in NTS
Oxford University	Telecommunication	Above 70% in Fsc. and 50 % in NTS
MIT	IT	70% -60 % in Fsc. and 50 % in NTS
MIT	Engg	59% – 50 % in Fsc. and 50 % in NTS
MIT	Computer	Above 40% and below 50 % in Fsc. and NTS

Q2: Create a class named 'Time' with data members (hours, mins, secs). Define methods in this class named 'hourConvertor', 'minConvertor' and 'secConvertor'. Calculate total hours, mins and secs for any integer value (in days).

For eg:

Input : 2 (days)

output: total_hours:48

total_mins:2880

total_secs:172800

Q3: Suppose there is XYZ Company and there are different departments like production, marketing, finance, sales etc. Manager of the company want to know about the detail of the employees who are highly paid. Write a program using the concept of classes to implement the same.

SET-8

Q1: Write a program to calculate the row-wise and column wise sum of an array. The size of the array and values of the array are to be taken at run time.

Q2: Write a program to display a color name depending on color value using switch case. Ask color value from user.

For e.g: Color Value: #1111

Color Name: White

Color Value: #0000

Color Name: Black

Q3: Declare an array of 10 STUDENT objects. Using appropriate functions, find the average of the two better marks for each student.

SET-9

Q1: The Fast Freight Shipping Company charges the following rates:

Weight of Package (in Kilograms) Rate per 500 Miles shipped

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Over 2 Kg but not more than 6 Kg: Rs 2.20

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Write a program that asks for the weight of the package and the distance it is to be shipped, and then displays the charges.

Input validation:

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Q2: Swati bought 600 shares of stock at a price of Rs 20 per share. She must pay her stock broker a 2% commission for the transaction. Write a program that the display the following:

-The amount paid for the stock alone (without the commission)

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Q3: Suppose there is the string "Lovely Professional University" define some methods which will be use to perform

- finds the total no. of characters
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- extracts the string Lovely
- replaces Lovely with lovely (first letter 'l' in small case)
- changes all characters in the string in Upper case.

SET- Allocation

Sno	Reg. no	Name	RollNumber	SET
1	12111861	Srishti Saini	RD2112A01	1
2	12111670	Jayshri Lal Pandit	RD2112A03	2
3	12112590	Sarthak Verma	RD2112A04	3
4	12112598	Anwasha Singh	RD2112A05	4
5	12113019	Md Aftab Quraishi	RD2112A06	5
6	12113027	Anjali Prasad	RD2112A07	6
7	12108999	Deepak Kumar Prajapati	RD2112A08	7
8	12108986	Bharti	RD2112A09	8
9	12109070	Nikita Kumari	RD2112A10	9
10	12106969	Chorge Nishant bhagwan	RD2112A11	1
11	12107058	Manash Ranjan Purohita	RD2112A12	2
12	12107037	Shobhit Pandey	RD2112A13	3
13	12107039	Pradeep Chauhan	RD2112A14	4
14	12107030	Vivek Kumar	RD2112A15	5
15	12107075	Garnipudi Siva Sai Kiran	RD2112A16	6
16	12107106	Utkarsh Singh Chouhan	RD2112A17	7
17	12107108	Shashi Kumar	RD2112A18	8
18	12107069	Tannu Priya	RD2112A19	9
19	12107168	Aman Kumar	RD2112A20	1
20	12107142	Tapas Dey	RD2112A21	2
21	12107144	Rijuan Mallick	RD2112A22	3
22	12107372	Chandra Sekhar Baksi	RD2112A23	4
23	12107343	Yash Tandan	RD2112A24	5
24	12107352	Sahil	RD2112A25	6
25	12107389	Aklesh Kumar	RD2112A26	7
26	12107390	Sujal Kumar Gupta	RD2112A27	8
27	12107386	Manish Kumar Choudhary	RD2112A28	9
28	12107402	Komal Singh	RD2112A29	1
29	12107418	Madhav Jha	RD2112A30	2
30	12107304	Raghuvansh Mani Tiwari	RD2112A31	3
31	12107216	Paras Sen	RD2112A32	4
32	12107218	Mukesh Patra	RD2112A33	5

33	12107241	Subhash Chandra	RD2112A34	6
34	12107248	Rahul Kumar	RD2112A35	7
35	12107249	Ankit Raj	RD2112A36	8
36	12106812	Abhishek Kumar	RD2112A37	9
37	12106759	Akash Mondal	RD2112A38	1
38	12106780	Akash Kumar Mall	RD2112A39	2
39	12106860	Prabhav Vaishnav	RD2112A40	3
40	12106871	Raman Kumar	RD2112A41	4
41	12106877	Anil Kumar	RD2112A42	5
42	12106882	Bhaskarayini Bhargava	RD2112A43	6
43	12106562	Aviral Shukla	RD2112A44	7
44	12106128	Harshit Khodani	RD2112A45	8
45	12106133	Aprajita Kumari	RD2112A46	9
46	12102666	Arunbakam Nagaraju Abhinay	RD2112A47	1
47	12104517	Arun Pratap Singh	RD2112A48	2
48	12105488	Amresh Kumar	RD2112B49	3
49	12106006	Astuti	RD2112B50	4
50	12103717	Apurwa	RD2112B51	5
51	12107507	Jasmeen	RD2112B52	6
52	12107456	Shubham Khosla	RD2112B53	7
53	12108423	Megha Garhkoti	RD2112B54	8
54	12108382	Akash Raj	RD2112B55	9
55	12108385	Ms. Bhawna Kewlani	RD2112B56	1
56	12108480	Nitin Agrahari	RD2112B57	2
57	12108481	Shiv Sundar Das	RD2112B58	3
58	12108451	Shubham Raj Keshri	RD2112B59	4
59	12108465	Akanksha	RD2112B60	5
60	12108329	Shreyansh Shekhar	RD2112B61	6
61	12108348	Aniket Kumar	RD2112B62	7
62	12108372	Shalini kumari	RD2112B63	8
63	12108305	Krishna Kumar	RD2112B64	9
64	12108235	Santosh Kumar	RD2112B65	1
65	12108245	Abhay Kumar	RD2112B66	2
66	12108247	Saksham Arora	RD2112B67	3
67	12108691	Jain Harshitkumar Gopalbhai	RD2112B68	4
68	12108565	Krrish Kumar	RD2112B69	5
69	12108696	Vashi Dattpalsinh Ajitsinh	RD2112B70	6
70	12108739	Reza Yawari	RD2112B71	7
71	12108052	Deepak Vishwakarma	RD2112B72	8
72	12108080	Shivam Kumar	RD2112B73	9
73	12108071	Maulik Jain	RD2112B74	1

74	12107974	Sirjanpreet Kaur	RD2112B75	2
75	12108193	Md.Ghulam Azad Ansari	RD2112B76	3
76	12108195	Afsar Alam	RD2112B77	4
77	12108164	Anchal Gupta	RD2112B78	5
78	12108142	Irshad Khazir Bhat	RD2112B79	6
79	12108134	Vishal Kumar	RD2112B80	7
80	12107695	Jobin S	RD2112B81	8
81	12107872	Munier Eisa Elnour Hassab	RD2112B82	9
82	12110343	Ayan Pakhira	RD2112B83	1
83	12110345	Ashish Dubey	RD2112B84	2
84	12110950	Pushkar Dahal	RD2112B85	3
85	12110903	Mohammad Suliman Joya	RD2112B86	4
86	12113030	Kamalesh Ray	RD2112B87	5
87	12112715	Vishal Pratap Singh	RD2112B88	6
88	12112027	Ajay Singh	RD2112B89	7
89	12111974	Pallavi	RD2112B90	8
90	12111879	Sunita	RD2112B91	9
91	12111883	Muskan	RD2112B92	1
92	12111457	Adarsh Kumar	RD2112B93	2
93	12111549	Ankit Nayak	RD2112B94	3
94	12111537	Ravi Kumar	RD2112B96	4
95	12111600	Shyam Kumar	RD2112B97	5
96	12111590	Shambhavee Kumari	RD2112B98	6