3. Prepare Manufacturing and Trading Account for the year ending 30th June, 1995 with the following figures extracted from the books of a manufacturing concern :

	Opening Stock	*Closing Stock*
	Rs.	Rs.
Raw Materials	1,20,000	80,000
Work-in-Progress	24,000	16,000
Finished Goods	86,400	64,000

Transactions during the year :	Rs.
Purchase of Materials	4,00,000
Wages	2,50,000
Stores Consumed	30,000
Indirect Wages	72,000
Factory Rent	24,000
Depreciation on Plant & Machinery	40,000
Sales	11,20,000
Purchase of Finished Goods	10,000

Ans. [Cost of goods produced Rs. 8,64,000; Gross Profit Rs. 2,23,600].

4. From the following balances taken from the books of Ved & Co., prepare Trading and Profit and Loss Account for the year ending 30th June, 1995 and Balance Sheet as on that date :

	Rs.		Rs.
Capital	35,000	Returns Outward	110
Buildings	18,750	Salaries	1,110
Machinery	9,250	Discount Allowed	200
Debtors	7,000	Stock (1-7-1994)	16,500
General Expenses	800	Bills Payable	5,000
Rent paid	3,710	Sales	63,500
Drawings	650	Purchases	46,850
Electric Charges	190	Wages	2,500
Carriage Inward	850	Cash in hand	1,800
Cash at Bank	3,000	Sundry Creditors	10,000
Returns Inward	450		

Closing stock is valued at Rs. 18,210.

Ans. [G.P. Rs. 14,670; N.P. Rs. 8,660; B/S Total Rs. 58,010].

5. Record the following adjustments in Shri Prabhakar's journal on 31st March, 1995 :

(*a*) The stock on 31st March, 1995 of raw materials was of the value of Rs. 1,00,000 and that of finished goods of Rs. 1,50,000.

(*b*) Rs. 20,000 for wages and Rs. 5,000 for printing were outstanding.

(*c*) Rs. 2,000 for insurance (personal) and Rs. 10,000 for income-tax were paid in advance.

(*d*) Write off depreciation on machinery Rs. 50,000 and on building Rs. 20,000.

(*e*) Rs. 15,000 were received in advance for commission.

6. The following is the Trial Balance of M/s Kasturi Agencies as on 31st March, 1995. Prepare Trading and Profit & Loss Account for the year ended 31st March, 1995 and a Balance Sheet on that date :

	Dr. Rs.	Cr. Rs.
Capital		1,00,000
Drawings	18,000	
Buildings	15,000	
Furniture & Fittings	7,500	
Motor Van	25,000	
Loan from Hari @ 12% interest		15,000
Interest paid on above	900	
Sales		1,00,000
Purchases	75,000	
Opening Stock	25,000	
Establishment Expenses	15,000	
Wages	2,000	
Insurance	1,000	
Commission received		4,500
Sundry Debtors	28,100	
Bank Balance	20,000	
Sundry Creditors		10,000
Interest		3,000
	2,32,500	2,32,500

Adjustments : (*a*) The value of closing stock on 31st March, 1995 was Rs. 32,000. (*b*) Outstanding Wages Rs. 500. (*c*) Prepaid Insurance Rs. 300. (*d*) Commission received in advance Rs. 1,300. (*e*) Allow interest on capital @ 10%. (*f*) Depreciate : Building 2½%, Furniture & Fittings 10%, Motor Van 10%. (*g*) Charge interest on drawings Rs. 500. (*h*) Accrued interest Rs. 500.

Ans. [G.P. Rs. 29,500; N.P. Rs. 5,575; B/S Total Rs. 1,24,775].

7. The following is the Trial Balance of Ram Lal on March 31, 1995.

Debit Balances :	Rs.		Rs.
Bank	7,500	Bills Receivable	7,500
Purchases (adjusted)	34,96,000	Stock (31st March, 1995)	3,06,250
Salaries	21,000		
Carriage on Sales	2,500	*Credit Balances* :	
Carriage on Purchases	2,000	Capital	2,00,000
Lighting	1,500	Bills Payable	50,000
Buildings	1,35,000	Loan	1,00,000
Rates and Taxes	2,000	Sales	36,00,000
Sundry Debtors	40,000	Discount	2,000
Furniture	30,000	Commission	500
Cash in Hand	1,250	Sundry Creditors	1,00,000

Rates have been prepaid to the extent of Rs. 600. During the year, bad debt amounted to Rs. 2,500. A provision @ 5% has to be made on debtors. Buildings have

NATIONAL INSTITUTE OF TECHNOLOGY WARANGAL

(An Institute of National Importance)

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

I MCA II Semester MID EXAMINATION FEB- 2017

FUNDAMENTALS OF WEB PROGRAMMING

Date: 15/02/2017 Time: 10:00AM – 12:00 AM Marks: 30

1 (a) Explain Client – Server architecture of internet. 02

(b) Write a CSS for Bouncing Ball, which bounces when the mouse is over the shape. 03

2 (a) Write a Java Script code that sets a background image from random images of a group, every time when the page refresh is occurred. 2.5

(b) Create a web page that contains four XHTML buttons. Each button, when clicked, should cause an alert dialog to display a different time or date in relation to the current time. Create a *NOW* button that alerts the current time and date and a *YESTERDAY* button that alerts the time and date 24 hours ago. The other two buttons should alert the time and date ten years ago and one week from today. 2.5

3 (a) Write a Java Script function that takes an integer value and returns the number with its digits reversed. For example, given the number 7631, the function should display 1367 and "one three six seven". Incorporate the function into a script that reads a value from the user. Display the result of the function in the status bar. 02

(b) Write a Java Script program that will help an elementary-school student learn multiplication. Use Math.random to produce two positive one-digit integers. It should then display a question such as

" How much is 6 times 7? "

The student then types the answer into a text field. Your program checks the student's answer. If it is correct, display the string "Very good!" and generate a new question. If the answer is wrong, display the string "No. Please try again." and let the student try the same question again repeatedly until the student finally gets it right. A separate function should be used to generate each new question. This function should be called once when the script begins execution and each time the user answers the question correctly. 03

4 Write an XML file which will display the Book information which includes the following:

1) Title of the book 2) Author Name 3) ISBN number 4) Publisher name
5) Edition 6) Price

Write a Document Type Definition (DTD) and XML Schema to validate the above XML file(should include different attributes for 3 books). 05

5 What is session tracking? Using Tomcat Server, provide an environment in which one servlet having name of the user in the cookie object and accessing it another servlet and write necessary servlet programs. 05

6 Write a servlet program to handle session management using HttpSession interface. 05

NATIONAL INSTITUTE OF TECHNOLOGY WARANGAL

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

I – MCA II– Semester MID EXAMINATION FEB- 2017

UNIX TOOLS PROGRAMING (CS5354)

DATE: 17/02/2017 Marks: 30 TIME: 2hr

Answer All Questions

1. Explain the need for two special files /dev/null and /dev/tty? 1M
2. Explain Internal and External command in brief. Write 3 examples for each. 2M
3. Write 4 differences between hard links and symbolic links? 2M
4. Discuss briefly about unix file system architecture .Explain the following directories.

   /bin, /usr/bin ,/etc, /dev, /tmp, /usr, /home, /var , /lib 3M
5. Explain the following commands 3M

   a. pr b. nice c. lpstat d. batch e. ispell f. ls –xR g. ls –L h. lock
6. Shell works as a command processor .Explain with neat diagram. 3M
7. What are file permissions? How permissions of regular file and directory file may be manipulated? Discuss in detail. 3M
8. What are standard input, standard output and standard error? How do you achieve redirection using file and pipes for all of them? Explain with examples. 3M
9. File 1.txt and 2.txt have the following data. 3M

1.txt

```
hello welcome to nit warangal.
hope you are enjoying your paper.
```

2.txt

```
helo welcome to nit warangal.
hope you are enjoying your paper.
hope you all will get good marks.
```

Write the output for the following commands

a) diff 1.txt 2.txt

b) cmp –l 1.txt 2.txt

10. Write a C/C++ program to implement cat command using command line argument 3M
11. Write a C/C++ program to implement wc command using command line argument 4M

NATIONAL INSTITUTE OF TECHNOLOGY, WARANGAL
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING
MID SEM EXAMINATION, FEBRUARY 2017
I MCA, II Semester
CS5351- Data Structures

Time: 10AM-12Noon Date: 14.02.2017 Max. Marks: 30

Answer ALL questions

1. a) What are primitive operations? How primitive operations contribute to find out the running time of an algorithm? Define an asymptotic notation for determining time complexity? (3+3)
   b) Write an efficient algorithm to find the n^{th} element from the middle of a linked list towards the starting node. Write a function for the algorithm. Determine the time complexity.

2. a) Write an algorithm to implement one stack using two queues. (3+3)
   b) Write an algorithm and a program to implement three stacks using only one array.

3. a) Given two linked lists, write down a C++ program to insert nodes of the second list into the first list at alternate positions of the first list. (3+3)
   b) An arithmetic expression is given in *infix* form that includes (,) , +,-,*,/ . It is required to convert it into equivalent *postfix* form. Write C++ program for this conversion.

4. A queue is maintained in an array and *F* and *R* are the *front* location and *rear* location of the queue respectively. (6)
   (i) Obtain a formula for *N*, the number of elements in the queue in terms of *F* and *R*.
   (ii) Write an algorithm to delete the i^{th} element in the queue.
   (iii) Write an algorithm to insert an item, *X*, just after the i^{th} element.

5. a) Write a function for non-recursive *Inorder* Traversal of binary tree. (3+3)

   b) Construct the binary tree (step by step) where the *inorder* and *preorder* traversals of the binary tree are given below:
   Nodes in *inorder*: D, B, H, E, A, I, F, J, C, G
   Nodes in *preorder*: A, B, D, E, H, C, F, I, J, G

NATIONAL INSTITUTE OF TECHNOLOGY- WARANGAL

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DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

MCA II – I Semester

Minor-I, September' 2015

Subject: CS6303-WEB TECHNOLOGIES

Date: 10/9/2015 **Time: 1 hr** **Max Marks: 10 Marks**

Answer All the Questions

1. a) Create a simple HTML page which demonstrates the use of the various types of lists **1M**

   b) Write an HTML page to display information of three products. The name of three products should be displayed at the top. The hyperlink should be provided to move to the details of the product like its features, size, price etc. along with its image. The link should be internal. **1.5M**

2. a) What is CSS? Explain the need of CSS and different ways to insert CSS. **1M**

   b) Create a web page having frames as follows: **3M**

Your Name Punch line etc.		
Objective Personal Information Family Information Educational Information Experience Achievements Other	Display information here of selected link	Display relevant images here
Your contact details		

The frame which includes Objective, Personal Information is the hyperlinks. Display the relevant information in the next frame on selecting the link. The color scheme of hyper links should be as follows: Default – green, active – red, visited – blue.

The information should be well formatted. Follow the instructions mentioned in the above format.

Set-4

a) Write script to print contains of file from given line number to next given number of lines.(For ex: n1=5 and n2=10 then display lines from 5 to 15 lines)

b) Write a shell script which receives two file names as arguments. It should check whether the two file contents are same or not. If they are same then second file should be deleted.

c)

1. Create a new directory called 167901(if your roll no is 167901)
2. Create a new .tex file called **latex.tex** in your **167901** directory.
3. Open the file with vi and Design **report2**
4. Refer template for more details
5. Generate a .pdf file using pdflatex.

d) Write a scilab script that takes a vector and **counts** how **many odd** numbers there are and also returns a vector of all the **even valued elements** in a given **vector**

e) Consider two functions f and g defined over the interval [-2; 5] by: f(x)=cos(x)and g(x)=$\sqrt{x}$

By using subplot, plot 2 graphs. First graph for function"f", second graph for f and g. Use different colors, title ,x-axis and y-axis

NATIONAL INSTITUTE OF TECHNOLOGY, WARANGAL
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DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING
I – MCA II– Semester END EXAMINATIONS May- 2016
INTRODUCTION TO DATA STRUCTURES (C5351)

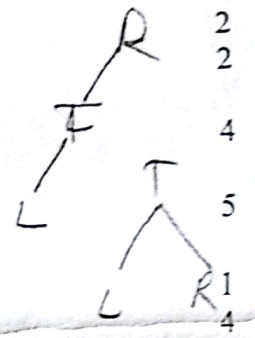
DATE: 12/05/2016 Marks: 50 TIME: 3hrs

Answer All Questions

1. a. Write a C++ function of postfix evaluation using queues. 4
   b. Consider the following arithmetic expression in postfix notation is single digit character
   7 5 2 + * 4 1 5 - / -
   Find out the value of the expression and equivalent prefix form of the above expression. 2

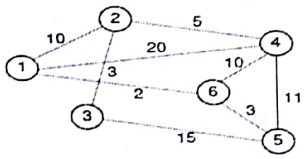
2. (a) Discuss with an algorithm for reverse the direction of the links of a single circular linked list containing a set of data. 3
   (b) It is required to split a circular queue into two circular queues so that all the elements in odd positions are in one queue and those in even positions are in another queue. Write an algorithm SPLITQUEUE () to accomplish this. Assume that circular queue is maintained in linked lists. 4

3. a. Write a C++ program for Open Hashing using Division Method 2
   b. Trace the above program with the following data and show the hash table. 2
   Keys are 25, 42, 96, 101, 102, 162, 197, 28, 56, 112 and table size is 7.
   c. Explain operations in Thread Binary Tree and Huffman Tree. 4



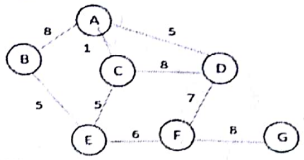
4. (a) Discuss with an algorithm of all types of AVL Tree rotations for insertion. 5
   (b) Add a Boolean member function IsBST to the class TreeType that determines Whether a binary tree is a binary search tree.
   1. Write the declaration of the function IsBST. include adequate comments. 1
   2. Write a recursive implementation of this function. 4

5. Consider the following list of words:
   apple, tree, car, dog, yellow, frog, gun, harp 1
   (a) sort the above list using an insertion sort. 1
   (b) sort the above list using a bubble sort. 1
   (c) sort the above list using a merge sort. 1
   (d) Consider an initially empty binary search tree . 1
   Place each of the above words into the BST in the order given above.
   Draw the completed binary search tree.

6. 

   (a) Draw the adjacency matrix representation for the above graph . 1
   (b) Draw the adjacency list representation for the same graph. 1
   (c) If a pointer requires four bytes, a vertex label requires two bytes, and an edge weight requires two bytes, which representation requires more space and more efficient for this graph? 2

7. (a) Write a C++ program to implement Prim's Algorithm. 4
   (b) Write a C++ program to implement Dijkstra's Algorithm. 4
   (c) Using Dijkstra's algorithm Find out the shortest path of below graph from source A to destination G. 1



   (d) Show the BFS and DFS for the above graph 3

NATIONAL INSTITUTE OF TECHNOLOGY, WARANGAL
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING
MID SEM EXAMINATION, MARCH.2016
I MCA, II Semester

CS5351 - Introduction to Data Structures

Time: 2 Hrs Date: 05.03.2016 Max. Marks: 30

Answer ALL questions

1. a) Consider an empty stack of integers. Let the numbers 1, 2, 3, 4, 5, 6 be pushed on to this stack only in the order they appeared from left to right. Let, S indicates a push and X indicates a pop operation. Can they be permuted in to the order 325641 and order 154623 as output? (2)

   b) Find the complexity of the following function (2)

```
Void function(int n) {
  if (n < = 1) return;  if (n > 1)
  { printf (" * " ); function (n/2); Function (n/2);} }
```

   c) A queue is set up in a circular array A [0, 1,... ,n-1] with front and rear defined as usual. Assume that (n-1) locations in the array are available for storing the elements (with the other element being used to detect full/empty condition). Give a formula for the number of elements in the queue in terms of rear, front and n. (2)

2. a) State about overflow and underflow condition in doubly ended queue which is implemented using array. (2)

   b) Assume each node of single linked list stores information about employee such as employee's id number, name and salary. Give node structure and write a **DeleteDup( )** function in C++ which performs Bubble sort on SLL using employee id and deletes values from SLL. Assume initially SLL is unsorted. (4)

3. a) How will you sort the elements of queue using two stacks? Explain with an example. (2)

   b) Write following C++ functions for circular linked list which stores characters. (4)
   Insertbyposition(char n, int position)
   Deletebyposition(int position)

4. a) Write down a program to check whether the given linked list is either NULL-terminated or not and if there is a cycle print the length of the loop. (4)

   b) Provide a recursive function to reverse a singly linked list. (2)

5. a) Write down a recursive function to check whether two binary trees are isomorphic to each other or not. (3)

   b) Explain the Non-Recursive post order traversal of binary tree. How will you implement it? (3)

L R N

NATIONAL INSTITUTE OF TECHNOLOGY, WARANGAL
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DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING
MID SEMESTER EXAMINATIONS, February-March 2016
I MCA II Semester
CS353 – Object-Oriented Programming

Date: 03-03-2016 Time: 10:00am – 12:00pm Max. Marks: 30

N.B.: Answer ALL questions
Answers to all parts of each question should be at one place.

1. Identify possible actors, objects, Classes and with complete class diagram in the following systems. You make any reasonable assumptions about the systems when deriving the design. (5M)
   A group diary and time management system is intended to support the time tabling of meetings and appointments across a group of co-workers. When an appointment is to be made which involves a number of people the system finds a common slot in each of these diaries and arranges the appointment for that time. If no common slots are available, it interacts with the user to rearrange their personal diary to make room for the appointment.

2. Write a program that simulates the rolling of two dice. The program should use "random" to roll the first die and should use "random" to roll the second die. The sum of the two values should be then calculated. Your program should roll the two-dice 36,000 times. Use a single-subscripted array to tally the numbers of times each possible sum appears. (5M)

3. Write a program for binary search that searches an array when the elements are in order. This algorithm is analogous to the following approach for finding a name in a telephone book. (5M)
   a. Open the book in the middle, and look at the middle name on the page.
   b. If the middle name isn't the one you are looking for, decide whether it comes before or after the name you want.
   c. Take the appropriate half the section of the book you were looking in and repeat these steps until you land on the name.
   Implement the algorithm on a jagged array which is an array of arrays.

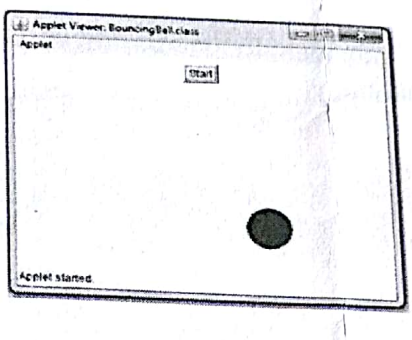
4. a) Describe in your own words the following aspects of software components: (2M)
   i. Behavior and state ii. Instances and classes
   iii. Coupling and cohesion iv. Interface and implementation.
   b) Describe the responsibilities of an organization that includes at least six types of members. For example, organizations such as hospital (management, doctors, nurses, ward boy, lab technicians, patients). For each member type, describe the responsibilities and the collaborators. Also create a scenario for the organization using an interaction diagram. (3M)

5. A university awards some grace marks to students who participate in the national games. Therefore, total marks obtained= exam marks+sports_grace_marks. If total marks scored are greater than maximum marks, then the final marks awarded will be equal to the maximum marks. An OO-based implementation will contain a class called Results, which extends a class called Exam, which itself extends a class called Student. It will also contain an interface called Sports, which is implemented by the Results class. The Results class will be responsible for computing the final marks scored by the students. Write a java program to demonstrate the above scenario. (5M)

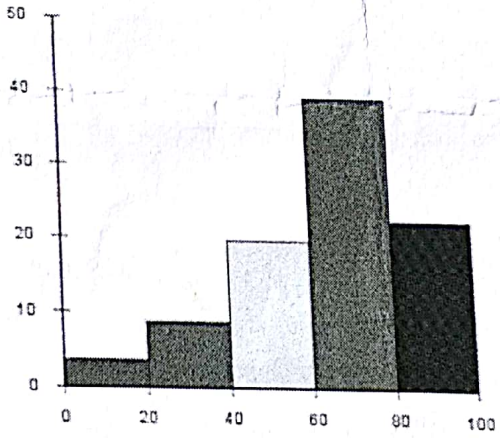
6. Implement a class Queue, based upon a linked list, which allows objects to join at the rear of the list and leave from the front of the list. In addition to the constructor, you should devise methods to test whether the queue is empty, to insert and delete objects from the queue, and to display the values of the objects in the list. (5M)

SET A :

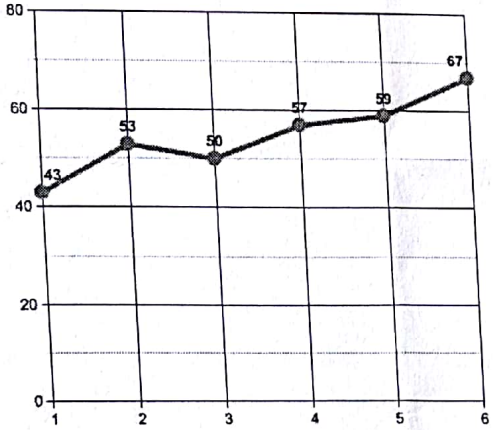
Q1. Write an applet program for bouncing ball application with color of the ball as red. Once you press the start button, the ball should bounce by hitting all 4 corners of applet window randomly.



Q2. a) Design a histogram to display the distribution of data to show the variation in a process or product, taking the data values at run time randomly. Take 5 values ranging between 0-50 and display the histogram bars on X-axis as shown below.Display both X-axis and Y-axis with values.



b) Design a graph diagram on a plane of X & Y axis, taking data values randomly and draw straight lines between each data point on the plane as shown below.

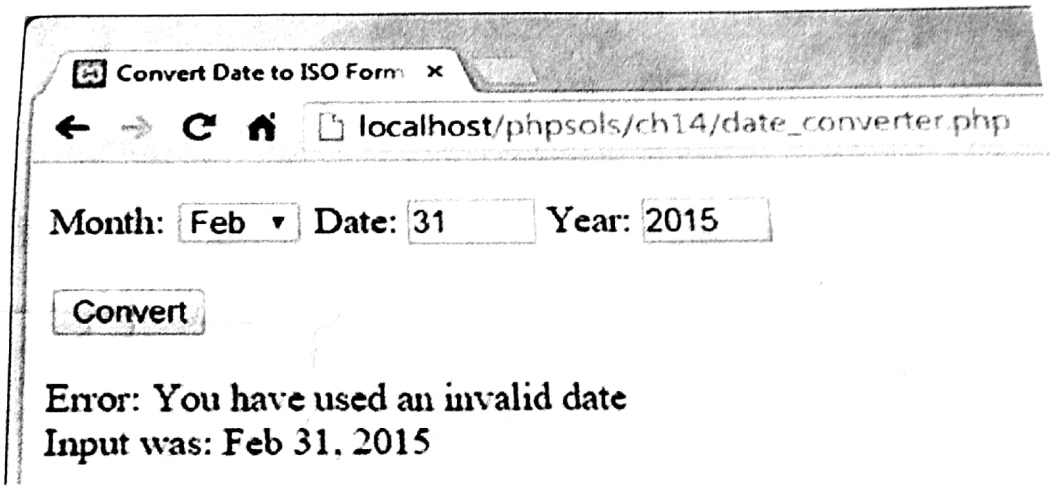


SET -1

1 Design a java script program that allows you to drag and drop an image. When the user clicks the image, it should follow the cursor until the mouse button is released, and also allow multiple images to be dragged and dropped in the same page.

2 Design a java application for Online Chat between client and server.

3 Write a php program to validate a date in the following manner.

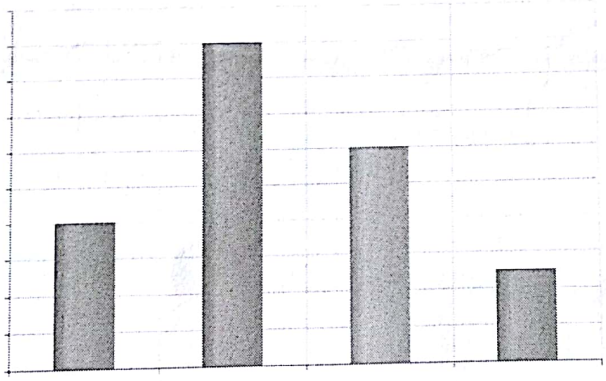


4 Refer the video in CNS folder, Design that application based on the given video.

SET B

Q1. Develop a code for snake game. Generate small balls with random amount of time and use arrow keys to move, up, down, left, right. As one ball touches other ball then increase length of the snake and display score for given amount of time.

Q2. a) Design a bar chart to display the distribution of data to show the variation in a process or product, taking the data values at run time randomly. Take 4 values ranging between 0-50 and display the histogram bars on X-axis as shown below.Display both X-axis and Y-axis with values. There should be equal distance between each bar.



b) Write a program to print all the possible permutations of a string entered at run time.

for example, if you enter "abc" as the string, then expected output : abc, acb,bca,bac etc

Q3. Write a program to play a variation of the game, as follows: Roll two dice, each dice has six faces representing values 1, 2… and 6 respectively. Check the sum of the two dice. If the sum is two, three, or twelve (called craps), you lose; if the sum is 7 or 11 (called natural), you win; if the sum is another value (i.e., 4, 5, 6, 8, 9, or 10), a point is established. Either continue to the roll the dice until a seven or the same point value is rolled. If seven is rolled you lose, otherwise you win. Your program acts as a single player.

NATIONAL INSTITUTE OF TECHNOLOGY, WARANGAL
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DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING
MINOR I EXAMINATIONS, February 2017
IMCA II Semester
SUBJECT: UTP

1) What is PATH?Explain in detail. **2M**
2) Write a command to find hexadecimal equivalent of binary number 1000011. **1M**
3) Write commands to know your current shell and login shell . **1M**
4) How can you make out whether two files are copies or links ?What are the two main disadvantage of hard links?**2M**
5) What does kill -KILL 0 command will do ?Explain. **1M**
6) What is the difference between ps –e and ps –a? **1M**
7) What happens when you use head with multiple filenames ?Explain. **1M**
8) The file a.txt has the permission rwx—x—x.what will be the permissions after the following command
chmod u-x,g=w,o=r a.txt? **1M**

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

I Year (MCA) 2nd Semester

DATA STRUCTURES LAB

Assignment - 2 DURATION: 3 WEEKS

1. Write down a program to create a binary tree, insert data into it and delete data from it.
2. Implement preorder, postorder, inorder and level order traversal of binary tree using recursion.
3. Implement preorder, postorder, inorder and level order traversal of binary tree without using recursion.
4. Write down a program to create a BST, insert data into it and delete data from it.
5. Write down a program to find maximum element in binary tree with and without using recursion.
6. Construct a binary tree from given inorder and preorder traversal.
7. Write down a program to find maximum and minimum element in a BST.
8. Write down a program to build an expression tree from postfix expression.
9. Write down a program to create an AVL tree, insert element to it and delete element from it.
10. Given a BST and two numbers k1 and k2, write down a program to print all the elements of BST in the range k1 and k2.
11. Write down a program to create a Generic tree. Also for a given node in the tree, print the number of siblings for that node.
12. Write down a program to find LCA (Least Common Ancestor) of two nodes in a binary tree.