**DHANEKULA INSTITUTE OF ENGINEERING & TECHNOLOGY**

**GANGURU: VIJAYAWADA – 521 139**

**(Approved by AICTE New Delhi, Affiliated to JNTU Kakinada)**

**ISO 9001:2015 Certified Institution**

**DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING**

**Name of the lab:Basic computing lab**

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| **OPERATING SYSTEM LAB(R20)** |
| **LIST OF EXPERIMENTS** | | |

**Size- (3\*4) Count- 1**

**EXPERIMENT 1:**

a) Study of Unix/Linux general purpose utility command list: man,who,cat, cd, cp, ps, ls, mv, rm, mkdir, rmdir, echo, more, date, time, kill, history, chmod, chown, finger, pwd, cal, logout, shutdown.

b) Study of vi editor

c) Study of Bash shell, Bourne shell and C shell in Unix/Linux operating system

d) Study of Unix/Linux file system (tree structure)

e) Study of .bashrc, /etc/bashrc and Environment variables.

**EXPERIMENT 2:**

Write a C program that makes a copy of a file using standard I/O, and system calls

**EXPERIMENT 3:**

Write a C program to emulate the UNIX ls –l command.

**EXPERIMENT 4:**

Write a C program that illustrates how to execute two commands concurrently with a command pipe. Ex: - ls –l | sort

**EXPERIMENT 5:**

Simulate the following CPU scheduling algorithms: (a) Round Robin (b) SJF (c) FCFS (d) Priority

**EXPERIMENT 6:**

Multiprogramming-Memory management-Implementation of fork (), wait (), exec() and exit (), System calls

**EXPERIMENT 7:**

Simulate the following:

a) Multiprogramming with a fixed number of tasks (MFT)

b) Multiprogramming with a variable number of tasks (MVT)

**EXPERIMENT 8:**

Simulate Bankers Algorithm for Dead Lock Avoidance

**EXPERIMENT 9:**

Simulate Bankers Algorithm for Dead Lock Prevention

**EXPERIMENT 10:**

Simulate the following page replacement algorithms:

a) FIFO

b) LRU

c) LFU

**EXPERIMENT 11:**

Simulate the following File allocation strategies

a) Sequenced

b) Indexed

c) Linked

**EXPERIMENT 12:**

Write a C program that illustrates two processes communicating using shared memory

**EXPERIMENT 13:**

Write a C program to simulate producer and consumer problem using semaphores

**EXPERIMENT 14:**

Write C program to create a thread using pthreads library and let it run its function.

**EXPERIMENT 15:**

Write a C program to illustrate concurrent execution of threads using pthreads library

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**DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING**

**Name of the lab:Basic computing lab**

|  |
| --- |
| **WEB APPLICATION DEVELOPMENT USING FULL STACK(R20)** |
| **LIST OF EXPERIMENTS** | | |

**Size- (2\*3) Count- 1**

A) HTML

1) Introduction to HTML

2) Browsers and HTML

3) Editor’s Offline and Online

4) Tags, Attribute and Elements

5) Doctype Element

6) Comments

7) Headings, Paragraphs, and Formatting Text

8) Lists and Links

9) Images and Tables

B) CSS

1) Introduction CSS

2) Applying CSS to HTML

3) Selectors, Properties and Values

4) CSS Colors and Backgrounds

5) CSS Box Model

6) CSS Margins, Padding, and Borders

7) CSS Text and Font Properties

8) CSS General Topic

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**Name of the lab:Basic computing lab**

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| --- |
| **R PROGRAMMING LAB(R20)** |
| **LIST OF EXPERIMENTS** | | |

**Size- (3\*4) Count- 1**

**EXPERIMENT 1:**

Write a R program to take input from the user (name and age) and display the values. Also print the version of R installation.

**EXPERIMENT 2:**

Write a R program to get the details of the objects in memory.

**EXPERIMENT 3:**

Write a R program to create a sequence of numbers from 20 to 50 and find the mean of numbers from 20 to 60 and sum of numbers from 51 to 91.

**EXPERIMENT 4:**

Write a R program to create a simple bar plot of five subjects marks.

**EXPERIMENT 5:**

Write a R program to get the unique elements of a given string and unique numbers of vector.

**EXPERIMENT 6:**

Write a R program to create three vectors a,b,c with 3 integers. Combine the three vectors to become a 3×3 matrix where each column represents a vector. Print the content of the matrix.

**EXPERIMENT 7:**

Write a R program to create a 5 x 4 matrix , 3 x 3 matrix with labels and fill the matrix by rows and 2 × 2 matrix with labels and fill the matrix by columns.

**EXPERIMENT 8:**

Write a R program to combine three arrays so that the first row of the first array is followed by the first row of the second array and then first row of the third array.

**EXPERIMENT 9:**

Write a R program to create a two-dimensional 5x3 array of sequence of even integers greater than 50.

**EXPERIMENT 10:**

Write a R program to create an array using four given columns, three given rows, and two given tables and display the content of the array.

**EXPERIMENT 11:**

Write a R program to create an empty data frame.

**EXPERIMENT 12:**

Write a R program to create a data frame from four given vectors.

**EXPERIMENT 13:**

Write a R program to create a data frame using two given vectors and display the duplicated elements and unique rows of the said data frame.

**EXPERIMENT 14:**

Write a R program to save the information of a data frame in a file and display the information of the file.

**EXPERIMENT 15:**

Write a R program to create a matrix from a list of given vectors.

**EXPERIMENT 16:**

Write a R program to concatenate two given matrices ofsame column but different rows.

**EXPERIMENT 17:**

Write a R program to find row and column index of maximum and minimum value in a given matrix.

**EXPERIMENT 18:**

Write a R program to append value to a given empty vector.

**EXPERIMENT 19:**

Write a R program to multiply two vectors of integers type and length 3.

**EXPERIMENT 20:**

Write a R program to find Sum, Mean and Product of a Vector, ignore element like NA or NaN.

**EXPERIMENT 21:**

Write a R program to list containing a vector, a matrix and a list and give names to the elements in the list.

**EXPERIMENT 22:**

Write a R program to create a list containing a vector, a matrix and a list and give names to the elements in the list. Access the first and second element of the list.

**EXPERIMENT 23:**

Write a R program to create a list containing a vector, a matrix and a list and remove the second element.

**EXPERIMENT 24:**

Write a R program to select second element of a given nested list.

**EXPERIMENT 25:**

Write a R program to merge two given lists into one list.

**EXPERIMENT 26:**

Write a R program to create a list named s containing sequence of 15 capital letters, starting from ‘E’.

**EXPERIMENT 27:**

Write a R program to assign new names "a", "b" and "c" to the elements of a given list.

**EXPERIMENT 28:**

Write a R program to find the levels of factor of a given vector.

**EXPERIMENT 29:**

Write a R program to create an ordered factor from data consisting of the names of months.

**EXPERIMENT 30:**

Write a R program to concatenate two given factor in a single factor

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**DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING**

**Name of the lab:Basic computing lab**

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| **JAVA PROGRAMMING LAB(R20)** |
| **LIST OF EXPERIMENTS** | | |

**Size- (3\*4) Count- 1**

**EXPERIMENT 1:**

a) Write a JAVA program to display default value of all primitive data type ofJAVA

b) Write a java program that display the roots of a quadratic equation ax2+bx=0. Calculate the discriminate D and basing on value of D, describe the nature of root.

c) Five Bikers Compete in a race such that they drive at a constant speed which may or may not be the same as the other. To qualify the race, the speed of a racer must be more than the average speed of all 5 racers. Take as input the speed of each racer and print back the speed of qualifying racers.

**EXPERIMENT 2:**

a) Write a JAVA program to search for an element in a given list of elements using binary search mechanism.

b) Write a JAVA program to sort for an element in a given list of elements using bubble sort

c) Write a JAVA program to sort for an element in a given list of elements using merge sort.

d) Write a JAVA program using StringBuffer to delete, remove character

**EXPERIMENT 3:**

a) Write a JAVA program to implement class mechanism. Create a class, methods and invoke them inside main method.

b) Write a JAVA program to implement constructor.

**EXPERIMENT 4:**

a) Write a JAVA program to implement constructor overloading.

b) Write a JAVA program implement method overloading.

**EXPERIMENT 5:**

a) Write a JAVA program to implement Single Inheritance

b) Write a JAVA program to implement multi level Inheritance

c) Write a java program for abstract class to find areas of different shapes

**EXPERIMENT 6:**

a) Write a JAVA program give example for “super” keyword.

b) Write a JAVA program to implement Interface. What kind of Inheritance can be achieved?

**EXPERIMENT 7:**

a) Write a JAVA program that describes exception handling mechanism

b) Write a JAVA program Illustrating Multiple catch clauses

**EXPERIMENT 8:**

a) Write a JAVA program that implements Runtime polymorphism

b) Write a Case study on run time polymorphism, inheritance that implements in above problem

**EXPERIMENT 9:**

a) Write a JAVA program for creation of Illustrating throw

b) Write a JAVA program for creation of Illustrating finally

c) Write a JAVA program for creation of Java Built-in Exceptions

d)Write a JAVA program for creation of User Defined Exception

**EXPERIMENT 10:**

a) Write a JAVA program that creates threads by extending Thread class .First thread display “Good Morning “every 1 sec, the second thread displays “Hello “every 2 seconds and the third display “Welcome” every 3 seconds ,(Repeat the same by implementing Runnable

b) Write a program illustrating isAlive and join ()

c) Write a Program illustrating Daemon Threads.

**EXPERIMENT 11:**

a) Write a JAVA program Producer Consumer Problem

b) Write a case study on thread Synchronization after solving the above producer consumer problem

**EXPERIMENT 12:**

a) Write a JAVA program illustrate class path

b) Write a case study on including in class path in your os environment of your package.

c) Write a JAVA program that import and use the defined your package in the previous Problem

**EXPERIMENT 13:**

a) Write a JAVA program to paint like paint brush in applet.

b) Write a JAVA program to display analog clock using Applet.

c) Write a JAVA program to create different shapes and fill colors using Applet.

**EXPERIMENT 14:**

a) Write a JAVA program that display the x and y position of the cursor movement using Mouse.

b) Write a JAVA program that identifies key-up key-down event user entering text in a Applet

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| **WEB APPLICATION DEVELOPMENT USING FULL STACK(R20)** |
| **LIST OF EXPERIMENTS** | | |

**Size- (2\*3) Count- 1**

**EXPERIMENT 1:**

Introduction to JavaScript

**EXPERIMENT 2:**

Applying JavaScript (internal and external)

**EXPERIMENT 3:**

Understanding JS Syntax

**EXPERIMENT 4:**

Introduction to Document and Window Object

**EXPERIMENT 5:**

Variables and Operators

**EXPERIMENT 6:**

Data Types and Num Type Conversion

**EXPERIMENT 7:**

Math and String Manipulation

**EXPERIMENT 8:**

Objects and Arrays

**EXPERIMENT 9:**

Date and Time

**EXPERIMENT 10:**

Conditional Statements

**EXPERIMENT 11:**

Switch Case

**EXPERIMENT 12:**

Looping in JS

**EXPERIMENT 13:**

Functions

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**Name of the lab:Basic computing lab**

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| **DATABASE MANAGEMENT SYSTEMS LAB(R20)** |
| **LIST OF EXPERIMENTS** | | |

**Size- (3\*4) Count- 1**

**EXPERIMENT 1:**

Creation, altering and dropping of tables and inserting rows into a table (use constraints while creating tables) examples using SELECT command.

**EXPERIMENT 2:**

Queries (along with sub Queries) using ANY, ALL, IN, EXISTS, NOTEXISTS, UNION, INTERSET, Constraints. Example:- Select the roll number and name of the student who secured fourth rank in the class.

**EXPERIMENT 3:**

Queries using Aggregate functions (COUNT, SUM, AVG, MAX and MIN), GROUP BY, HAVING and Creation and dropping of Views.

**EXPERIMENT 4:**

Queries using Conversion functions (to\_char, to\_number and to\_date), string functions (Concatenation, lpad, rpad, ltrim, rtrim, lower, upper, initcap, length, substr and instr), date functions (Sysdate, next\_day, add\_months, last\_day, months\_between, least, greatest, trunc, round, to\_char, to\_date)

**EXPERIMENT 5:**

. i. Create a simple PL/SQL program which includes declaration section, executable section and exception –Handling section (Ex. Student marks can be selected from the table and printed for those who secured first class and an exception can be raised if no records were found)

ii. Insert data into student table and use COMMIT, ROLLBACK and SAVEPOINT in PL/SQL block

**EXPERIMENT 6:**

Develop a program that includes the features NESTED IF, CASE and CASE expression. The program can be extended using the NULLIF and COALESCE functions.

**EXPERIMENT 7:**

Program development using WHILE LOOPS, numeric FOR LOOPS, nested loops using ERROR Handling, BUILT –IN Exceptions, USE defined Exceptions, RAISEAPPLICATION ERROR.

**EXPERIMENT 8:**

Programs development using creation of procedures, passing parameters IN and OUT of PROCEDURES

**EXPERIMENT 9:**

Program development using creation of stored functions, invoke functions in SQL Statements and write complex functions.

**EXPERIMENT 10:**

Develop programs using features parameters in a CURSOR, FOR UPDATE CURSOR, WHERE CURRENT of clause and CURSOR variables.

**EXPERIMENT 11:**

Develop Programs using BEFORE and AFTER Triggers, Row and Statement Triggers and INSTEAD OF Triggers

**EXPERIMENT 12:**

Create a table and perform the search operation on table using indexing and non-indexing techniques. Text Books/Suggested Reading

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| --- |
| **Lab Configuration** |

**Size- (2\*3) Count- 1**

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| Total number of Desktops | 72 |
| Number of Desktops Connected in LAN | 72 |
| Hardware | LENOVO -12th Generation Intel core 15-12400. 2.50 GHZ-M70T-G3/8GB RAM/1TB HDD/DOS-IIT/19.5 LENOVO-LED Monitor-62F7KAR4WW/USB keyboard and mouse |
| Online UPS | EATON Make 1X10 KVA Online UPS with 20 12v-42AH Amara Raja/Quanta Batteries with a min of 2 hours backup |
| System Software | Microsoft Windows-10 -licensed  Ubuntu-free ware |
| Application Software | Gnu C Computer(GCC), Oracle 11g, java, R-Studio |
| Cost of Equipment (software) | Under Microsoft Campus Agreement |

**Size- (1\*1) Count- 1**

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| **MS.N.SRI LAKSHMI**  **Assistant Professor**  **Lab In-Charge** |

**Size- (1\*1) Count- 1**

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| K.VASANTHI  Programmer |