

SL NO	LIST OF PROGRAMS
1	Find the biggest of three numbers.
2	Arithmetic operations using switch statement.
3	Find the Fibonacci series between M and N.
4	Prime numbers between M and N
5	Binary to Decimal conversion
6	Sorting an unsorted array
7	Searching an element in an array.
8	Addition of two matrices
9	Multiplication of two matrices
10	Norm and trace of the matrix.
11	Count the numbers of vowels in a given string.
12	Find the factorial of a number using a function.

Statements of Course Outcomes (COs)**By the end of the course, the student will be able to**

CO-1	Implement the algorithms, identify the correct and efficient ways of solving problems
CO-2	Develop programs using the basic elements like control statements, Arrays and Strings
CO-3	Implement different Operations on arrays
CO-4	Learn programs that perform operations using strings
CO-5	Enable effective usage of functions using simple programs

DATA STRUCTURES LAB**Subject Code: BSC-2****Syllabus**

SL NO	LIST OF PROGRAMS
1	Implementation of stack
2	Evaluation of postfix expression
3	Conversion of infix to postfix
4	Tower of Hanoi
5	Implementation of queue
6	Implementation of stack using linked list
7	Implementation of queue using linked list
8	Quick sort
9	Shell sort
10	Binary search

Statements of Course Outcomes (COs)**By the end of the course, the student will be able to**

CO-1	Implementations of stack and queue menu driven program
CO-2	Learn the applications of data structures
CO-3	Implementations of Infix to Postfix Transformation and its evaluation program.
CO-4	Implementation of different operations on linked list
CO-5	Implement appropriate sorting/searching technique for given problem.

SL NO	LIST OF PROGRAMS
1	Write a c++ program to find the result of a student using class concept
2	Define a class to represent product details it includes data member pname, pcode, price, pquality include member function a) to get product detail b) to display the product details and total price using class concept
3	Write a c++ program to print Fibonacci series using constructor
4	Write a c++ program to find biggest of two numbers and three numbers using function overloading
5	Write a c++ program to calculate area of triangle, rectangle and circle using function overloading
6	Write a c++ program to calculate family income using friend function
7	Write a c++ program to add two complex numbers using operator overloading
8	Write a c++ program to implement multiple inheritance by creating classes: father, mother and son
9	Write a c++ program to swap two numbers using function template
10	Write a c++ program to sort an array using function template

Statements of Course Outcomes (COs)**By the end of the course, the student will be able to**

CO-1	Create simple programs using classes and objects in C++.
CO-2	Implement dynamic memory management techniques using pointers, constructors, destructors, etc
CO-3	Learn the concept of function overloading, operator overloading, virtual functions and polymorphism.
CO-4	Classify inheritance with the understanding of code reusability
CO-5	Understand generic programming and templates,

SL NO	LIST OF PROGRAMS
I	Use default emp and dept tables to write SQL statements for following queries 1. Find the employee details in ascending order of their name and descending order of their salary 2. Find names of all employees whose name starts with 's' and having at least 6 characters in it 3. Find the name of all managers and number of employees under them 4. Find the details of all employees in the research department 5. Find the minimum, maximum and average salary of each department 6. Find department name having least number of employees 7. Find the department name having highest annual payroll 8. Add an employee under the manager smith 9. Find the employees who are not getting commission
II	Create tables as below Student(name string, regno string primary key, dob date, doj date ,course string foreign key) Markscard(regno foreign key, sem string, sub1 number, sub2 number, sub3 number, tot number, avge number, result string) Write SQL statements for the following queries. 1. List the names of students studying in BCA course in the order of their joining 2. Find the name of student who has scored highest marks in every sem of each course 3. Count the number of students in each course 4. Find the course having second highest number of students 5. Find the course having least students in I semester 6. Raise marks of sub3 in III sem BCA students by 5% if the student has failed in that subject 7. Display the details of student 'xxx' in every semester. 8. Find the names of al juniors of 'yyy' in course 'c1' 9. Find all students studying with 'xxx' and elder to him (compare DOB)
III	Dept(deptno integer pkey, dname string not null, loc string not null) Emp(eno integer pkey, ename string, deptnofkey, desgn string not null, bsal number>0) Salary(enofkey,da,hra,gross,it,pf,net,comm) Designations are: manager,clerk,salesman Comm=5% of basic if desgn=salesman otherwise null Da=15% bsalhra = 7% of bsal gross=bsal+da+hra It =0 if gross<15000 = 10% of gross if gross between 15000 and 30000 =20% of gross if gross between 30000 and 50000 = 30% of gross otherwise pf = 10% of gross or 1000 whichever is less Write SQL statements for 1. Count the number of employees in every designation 2. List the employees of every department in descending order of their net salary 3. List the name and salary of highest salary payer in every department



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ಕಿಇಎಸ್ ಇನ್‌ಸ್ಟಿಟ್ಯೂಟ್ ಆಫ್ ಅಡ್ವಾನ್ಸ್‌ಡ್ ಮ್ಯಾನೇಜ್‌ಮೆಂಟ್ ಸ್ಟಡೀಸ್
(ಉಪೇಖ್ಯ ವಿಶ್ವವಿದ್ಯಾಲಯದ ಸಂಯೋಜನೆಗೊಳಪಟ್ಟಿದೆ ಮತ್ತು ಕರ್ನಾಟಕ ಸರ್ಕಾರದ ಮಾನ್ಯತೆ ಪಡೆದಿದೆ)
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DEPARTMENT OF COMPUTER SCIENCE

	<ol style="list-style-type: none">4. List the name of employee paying highest IT5. List the total IT paid by each department6. List the departments in every location7. Raise the basic salary by 10% for the managers of every department.8. Find number of employees having at least 10 years of experience in every department.9. Count the number of employees who are not getting commission in every department
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Statements of Course Outcomes (COs)

By the end of the course, the student will be able to

CO-1	Learn creation and design of relational database systems by designing databases.
CO-2	Use an SQL interface of a multi-user relational DBMS package to create, populate, maintain, and query a database.
CO-3	Formulate query using SQL to solve data update problems.
CO-4	Learn aggregate functions to solve queries

SL NO	LIST OF PROGRAMS
1	Write a Java program to generate first n odd numbers and pick and display prime numbers among them. Read value for n as command line argument.
2	Write a Java program to create a vector, add elements at the end, at specified location onto the vector and display the elements. Write an option driven program using switch...case.
3	Write a java program to find area of geometric figures using method overloading.
4	Write a Java program to find the circumference and area of the circle using interface.
5	Write a java program to sort the alphabets in the given string.
6	Write a java program to accept student information using array of objects and constructor initialisation.
7	Write a java program to implement constructor overloading by passing different number of parameter of different types.
8	Write a program to implement an applet by passing parameter to HTML
9	Write an applet program to display human face
10	Create an applet to display concentric n circles, input value for n.

Statements of Course Outcomes (COs)**By the end of the course, the student will be able to**

CO-1	Write Java application programs using OOP principles and program structuring
CO-2	Demonstrate the concepts of polymorphism and inheritance
CO-3	Understand fundamentals of object-oriented programming in Java, including defining classes, invoking methods, using class libraries, etc
CO-4	Learn the Internet Programming, using Java Applets

UNITS	LIST OF PROGRAMS
1	Write a shell script program to perform all arithmetic operations on floating point.
2	Write a shell script program to check whether the given number is positive or negative.
3	Write a shell script program to reverse a number.
4	Write a shell script program to find the sum of the digits of a number.
5	Write a shell script program to find the sum of the series (sum= $1 + \frac{1}{2} + \dots + \frac{1}{n}$)
6	Write a shell script program to add, subtract and multiply the two given number passed as command line argument.
7	Write a shell script to count number of characters in a given string
8	Write a shell script program to read pattern and file name and search whether the given pattern is in a file or not.
9	Write a shell script to read filename from command line argument check whether the file is regular file or directory or by both.
10	Find the number of directory file and ordinary files in the current

Statements of Course Outcomes (COs)**By the end of the course, the student will be able to**

CO-1	Understand and make effective use of linux utilities and shell scripting language to solve problems
CO-2	Write Regular expressions for pattern matching and apply them to various filters for a specific task
CO-3	Modify built-in shell variables and create and use user-defined shell variables.
CO-4	Create structured shell programming which accept and use positional parameters and exported variables.

UNITS	LIST OF PROGRAMS
1	Write an applet to add, remove, select an item in a list
2	Write an applet to display selected geometric figures from a list.
3	Write a program to implement mouse events
4	Write a program to implement keyboard events
5	Write a Java program (console) to store the typed text to a file.
6	Write a Java program to display the content of a file.
7	Write a Java program with JDBC to store the details of a person on to an Oracle database table.
8	Write a Java program with JDBC to access and display the details of a person stored in an Oracle database table.
9	Write a Java program with JDBC to access and delete the details of a given person stored in an Oracle database table.
10	Write a Java program to demonstrate the use of generics.

Statements of Course Outcomes (COs)**By the end of the course, the student will be able to**

CO-1	Learn the Internet Programming using Java Applets
CO-2	Design and develop GUI applications using Abstract Windowing Toolkit (AWT), Swing and Event Handling.
CO-3	Learn to access database through Java programs, using Java Data Base Connectivity (JDBC)
CO-4	Learn the concepts of Swings and Files.