Programming in C   **Semester -I**

Theory	4 Hours/Week	4 credit
Practical	3 Hours/Week	1 credit

Unit – I

Computer Fundamentals: Introduction of Computers, Classification of Computers, Anatomy of a Computer, Memory Hierarchy, Introduction to OS, Operational Overview of a CPU.
Program Fundamentals: Generation and Classification of Programming Languages, Compiling, Interpreting, Loading, Linking of a Program, Developing Program, Software Development.
Algorithms: Definitions, Different Ways of Stating Algorithms (Step-form, Pseudo-code, Flowchart), Strategy for Designing Algorithms, Structured Programming Concept.
Basics of C: Overview of C, Developing Programs in C, Parts of Simple C Program, Structure of a C Program, Comments, Program Statements, C Tokens, Keywords, Identifiers, Data Types, Variables, Constants, Operators and Expressions, Expression Evaluation–precedence and associativity, Type Conversions.

Unit – II

Input-Output: Non-formatted and Formatted Input and Output Functions, Escape Sequences,
Control Statements: Selection Statements – if, if-else, nested if, nested if-else, comma operator, conditional operator, switch; Iterative Statements–while, for, do-while; Special Control Statement–goto, break, continue, return, exit.
Arrays and Strings: One-dimensional Arrays, Character Arrays, Functions from ctype.h, string.h, Multidimensional Arrays.

Unit – III

Functions: Concept of Function, Using Functions, Call-by-Value Vs Call-by-reference, Passing Arrays to Functions, Score of Variables, Storage Classes, Inline Functions, and Recursion.
Pointers: Introduction, Address of Operator (&), Pointer, Uses of Pointers, Arrays and Pointers, Pointers and Strings, Pointers to Pointers, Array of Pointers, Pointer to Array, Dynamic Memory Allocation.

Unit – IV

User-defined Data Types: Declaring a Structure (Union) and its members, Initialization Structure (Union), Accessing members of a Structure (Union), Array of Structures (Union), Structures verses Unions, Enumeration Types.
Files: Introduction, Using Files in C, Working with Text Files, Working with Binary Files, Files of Records, Random Access to Files of Records, Other File Management Functions.

Text	Pradip Dey, Manas Ghosh, Computer Fundamentals and Programming in C (2e)

References
BOOKS

Ivor Horton, Beginning C
Ashok Kamthane, Programming in C
Herbert Schildt, The Complete Reference C
Paul Deitel, Harvey Deitel, C How To Program
Byron S. Gottfried, Theory and Problems of Programming with C
Brian W. Kernighan, Dennis M. Ritchie, The C Programming Language
B. A. Forouzan, R. F. Gilberg, A Structured Programming Approach Using C

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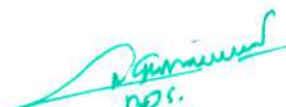# C Lab Semester -I

| Practical | 3 Hours/Week | 1 credit |

1   Write a program to find the largest two (three) numbers using if and conditional operator.

2   Write a program to print the reverse of a given number.

3   Write a program to print the prime number from 2 to n where n is given by user.

4   Write a program to find the roots of a quadratic equation using switch statement.

5   Write a program to print a triangle of stars as follows (take number of lines from user):

```
        *
       ***
      *****
     *******
    *********
```

6   Write a program to find largest and smallest elements in a given list of numbers.

7   Write a program to find the product of two matrices..

8   Write a program to find the GCD of two numbers using iteration and recursion.

9   Write a program to illustrate use of storage classes.

10   Write a program to demonstrate the call by value and the call by reference concepts.

11   Write a program that prints a table indicating the number of occurrences of each alphabet in the text entered as command line arguments.

12   Write a program to illustrate use of data type enum.

13   Write a program to demonstrate use of string functions string.h header file.

14   Write a program that opens a file and counts the number of characters in a file.

15   Write a program to create a structure Student containing fields for Roll No., Name, Class, Year and Total Marks. Create 10 students and store them in a file.

16   Write a program that opens an existing text file and copies it to a new text file with all lowercase letters changed to capital letters and all other characters unchanged.

Note   Write the Pseudo Code and draw Flow Chart for the above programs.
Recommended to use Open Source Software: GCC on Linux; DevC++ (or) CodeBlocks on Windows
10.

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Programming in C++   Semester -II

Theory	4 Hours/Week	4 credits
Practical	3 Hours/Week	1 credit

Unit – I

Introduction to C++: Applications, Example Programs, Tokens, Data Types, Operators, Expressions, Control Structures, Arrays, Strings, Pointers, Searching and Sorting Arrays.
Functions: Introduction, Prototype, Passing Data by Value, Reference Variables, Using Reference Variables as Parameters, Inline Functions, Default Arguments, Overloading Functions, Passing Arrays to Functions.
Object Oriented Programming: Procedural and Object-Oriented Programming, Terminology, Benefits, OOP Languages, and OOP Applications.

Unit – II

Classes: Introduction, Defining an Instance of a Class, Why Have Private Members? Separating Class Specification from Implementation, Inline Member Functions, Constructors, Passing Arguments to Constructors, Destructors, Overloading Constructors, Private Member Functions, Arrays of Objects, Instance and Static Members, Friends of Classes, Member-wise Assignment, Copy Constructors, Operator Overloading, Object Conversion, Aggregation.
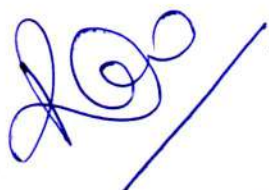
Unit – III

Inheritance: Introduction, Protected Members and Class Access, Base Class Access Specification, Constructors and Destructors in Base and Derived Classes, Redefining Base Class Functions, Class Hierarchies, Polymorphism and Virtual Member Functions, Abstract Base Classes and Pure Virtual Functions, Multiple Inheritance.
C++ Streams: Stream Classes, Unformatted I/O Operations, Formatted I/O Operations.

Unit – IV

Exceptions: Introduction, Throwing an Exception, Handling an Exception, Object-Oriented Exception Handling with Classes, Multiple Exceptions, Extracting Data from the Exception Class, Re-throwing an Exception, Handling the bad_alloc Exception.
Templates: Function Templates–Introduction, Function Templates with Multiple Type, Overloading with Function Templates, Class Templates – Introduction, Defining Objects of the Class Template, Class Templates and Inheritance, Introduction to the STL.

Text   Tony Gaddis, Starting out with C++: from control structures through objects (7e)

References   B. Lippman, C++ Primer
                     Bruce Eckel, Thinking in C++
                     K.R. Venugopal, Mastering C++
                     Herbert Schildt, C++: The Complete Reference
                     Bjarne Stroustrup, The C++ Programming Language
                     Sourav Sahay, Object Oriented Programming with C++

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C++ Lab   Semester -II

Practical	3 Hours/Week	1 credit

1 Write a program to.

    a.   Print the sum of digits of a given number.

    b.   Check whether the given number is Armstrong or not

    c.   Print the prime number from 2 to n where n is natural number given.

2 Write a program to find largest and smallest elements in a given list of numbers and sort the given list.

3 Write a program to read the student name, roll no, marks and display the same using class and object.

4 Write a program to implement the dynamic memory allocation and de-allocation using new and delete operators using class and object.

   Write a program to find area of a rectangle, circle, and square using constructors.

5

6 Write a program to implement copy constructor.

7 Write a program using friend functions and friend class.

8 Write a program to implement constructors
§ Default Constructor, Parameterized Constructor, Copy Constructor
§ Define the constructor inside/outside of the class
§ Implement all three constructors within a single class as well as use multiple classes(individual classes)
Write a program to implement the following concepts using class and object
§ Function overloading
§ Operator overloading (unary/binary(+ and -))

Write a program to demonstrate single inheritance, multilevel inheritance and multiple inheritances.

Write a program to implement the overloaded constructors in inheritance.

Write a program to implement the polymorphism and the following concepts using class and object.
§ Virtual functions
§ Pure virtual functions
Write a program to implement the virtual concepts for following concepts
§ Constructor (not applied)
§ Destructor (applied)

Write a program to demonstrate static polymorphism using method overloading.

Write a program to demonstrate dynamic polymorphism using method overriding and dynamic method dispatch.
Write a program to implement the template (generic) concepts
§ Without template class and object
§ With template class and object

Write the Pseudo Code and draw Flow Chart for the above programs.

Recommended to use Open Source Software: GCC on Linux; DevC++ (or) CodeBlocks on Windows.

DATA STRUCTURES USING C++

Theory:	4 Hours/Week;	Credits: 4	Marks: 100 (Internal: 20; External: 80)
Practical:	3 Hours/Week	Credits: 1	Marks: 25

Unit - I

Basic data Structure: Introduction to Data Structures, Types of Data Structures, and Introduction to Algorithms, Pseudo code, and Relationship among data, data structures, and algorithms, Implementation of data structures, Analysis of Algorithms.

Stacks: Concept of Stacks and Queues, Stacks, Stack Abstract Data Type, Representation of Stacks Using Sequential Organization (Arrays), Multiple Stacks, Applications of Stack, Expression Evaluation and Conversion, Polish notation and expression conversion, Processing of Function Calls, Reversing a String with a Stack, Recursion.

Unit - II

Recursion: Introduction, Recurrence, Use of Stack in Recursion, Variants of Recursion, Recursive Functions, Iteration versus Recursion.

Queues: Concept of Queues, Queue as Abstract Data Type, Realization of Queues Using Arrays, Circular Queue, Multi-queues, Dequeue, Priority Queue, Applications of Queues,

Linked Lists: Introduction, Linked List, Linked List Abstract Data Type, Linked List Variants, Doubly Linked List, Circular Linked List, Representation of Sparse Matrix Using Linked List, Linked Stack, Linked Queue.

Unit - III

Trees: Introduction, Types of Trees, Binary Tree, Binary Tree Abstract Data Type, Realization of a Binary Tree, Insertion of a Node in Binary Tree, Binary Tree Traversal, Other Tree Operations, Binary Search Tree, Threaded Binary Tree, Applications of Binary Trees.

Searching and Sorting: Search Techniques-Linear Search, Binary Search, Sorting Techniques- Selection Sort, Bubble Sort, Insertion Sort, Merge Sort, Quick Sort, Comparison of All Sorting Methods, Search Trees: Symbol Table, Optimal Binary Search Tree, AVL Tree (Height-balanced Tree).

Unit - IV

Graphs: Introduction, Representation of Graphs, Graph Traversal – Depth First Search, Breadth First Search, Spanning Tree, Prim's Algorithm, Kruskal's Algorithm.

Hashing: Introduction, Key Terms and Issues, Hash Functions, Collision Resolution Strategies, Hash Table Overflow, Extendible Hashing

Heaps: Basic Concepts, Implementation of Heap, Heap as Abstract Data Type, Heap Sort, Heap Applications.

Text books:

1. Varsha H. Patil "Data structures using C++" Oxford University press, 2012
2. M.T. Goodrich, R. Tamassia and D. Mount, Data Structures and Algorithms in C++, John Wiley and Sons, Inc., 2011.

References:

1. Adam Drozdek "Data structures and algorithm in C++" Second edition, 2001
2. T.H. Cormen, C.E. Leiserson, R.L. Rivest and C. Stein, Introduction to Algorithms,2nd Ed., Prentice-Hall of India, 2006.
3. Robert L. Kruse and A.J. Ryba, Data Structures and Program Design in C++, PrenticeHall, Inc., NJ, 1998.
4. B. Stroupstrup, The C++ Programming Language, Addison Wesley, 2004
5. D.E. Knuth, Fundamental Algorithms (Vol. I), Addison Wesley, 1997

Dr. B.Rama Chairperson Board of Studies, Department of Computer Science, KU

DATA STRUCTURES USING C++ LAB
Practical   3 Hours/Week   1 Credit   Marks: 25

Note:

- Programs of all the Concepts from Text Book including exercises must be practice and execute.
- In the external lab examination student has to execute two programs with compilation and deployment steps are necessary.
- External Vice-Voce is compulsory.

1. Write C++ programs to implement the following using an array
   - a) Stack ADT   b) Queue ADT
2. Write a C++ program to implement Circular queue using array.
3. Write C++ programs to implement the following using a single linked list.
   - a) Stack ADT   b) Queue ADT
4. Write a C++ program to implement Circular queue using Single linked list.
5. Write a C++ program to implement the double ended queue ADT using double linked list.
6. Write a C++ program to solve tower of Hanoi problem recursively
7. Write C++ program to perform the following operations:
   - a) Insert an element into a binary search tree.
   - b) Delete an element from binary search tree.
   - c) Search for a key in a binary search tree.
8. Write C++ programs for the implementation tree traversal technique BFS.
9. Write a C++ program that uses recursive functions to traverse a binary search tree.
   - a) Pre-order   b) In-order   c) Post-order
10. Write a C++ program to find height of a tree.
11 Write a C++ program to find MIN and MAX element of a BST.
12 Write a C++ program to find Inorder Successor of a given node.
13. Write C++ programs to perform the following operations on B-Trees and AVL Trees.
   - a) Insertion   b) Deletion
14 Write C++ programs for sorting a given list of elements in ascending order using the following sorting methods.
   - a) Quick sort   b) Merge sort
15. Write a C++ program to find optimal ordering of matrix multiplication.
16. Write a C++ program that uses dynamic programming algorithm to solve the optimal binary search tree problem
17. Write a C++ program to implement Hash Table
18. Write C++ programs to perform the following on Heap
   - a) Build Heap   b) Insertion   c) Deletion
19. Write C++ programs to perform following operations on Skip List
   - a) Insertion   b) Deletion
20. Write a C++ Program to Create a Graph using Adjacency Matrix Representation.
21. Write a C++ program to implement graph traversal techniques
   - a) BFS   b) DFS
22. Write a C++ program to Heap sort using tree structure.

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DATA BASE MANAGEMENT SYSTEMS

Theory: **4 Hours/Week;**   **Credits: 4**   **Marks: 100 (Internal: 20; External: 80)**

Practical: **3 Hours/Week**   **Credits: 1**   **Marks: 25**

Unit - I
Introduction: Database-System Applications, Purpose of Database Systems, View of Data, Database Languages, Relational Databases, Database Design, Data Storage and Querying, Transaction Management, Database Architecture, Database Users and Administrators.
Introduction to the Relational Model: Structure of Relational Databases, Database
Schema, Keys, Schema Diagrams, Relational Query Languages, Relational Operations.

Unit - II
Database Design and the E-R Model: Overview of the Design Process, The Entity- Relationship Model, Constraints, Removing Redundant Attributes in Entity Sets, Entity-Relationship Diagrams, Reduction to Relational Schemas, Entity-Relationship Design Issues, Extended E-R Features, Alternative Notations for Modeling Data, Other Aspects of Database Design.
Relational Database Design: Features of Good Relational Designs, Atomic Domains and First Normal Form, Decomposition Using Functional Dependencies, Functional- Dependency Theory, Decomposition Using Multivalued Dependencies, Normal Forms-2 NF, 3 NF, BCNF, The Database Design Methodology for Relational Databases.

Unit - III
Introduction to SQL: Overview of the SQL Query Language, SQL Data Definition, Basic Structure of SQL Queries, Additional Basic Operations, Set Operations, Null Values, Aggregate Functions, Nested Subqueries, Modification of the Database.
Intermediate SQL: Join Expressions, Views, Transactions, Integrity Constraints, SQL Data Types and Schemas, Authorization.
Advanced SQL: Accessing SQL from a Programming Language, Functions and Procedures, Triggers, Recursive Queries.

Unit - IV
Transaction Management: Transaction Support–Properties of Transactions, Database Architecture, Concurrency Control–The Need for Concurrency Control, Serializability and Recoverability, Locking Methods, Deadlock, Time Stamping Methods, Multi-version Timestamp Ordering, Optimistic Techniques, Granularity of Data Items, Database Recovery–The Need for Recovery, Transactions and Recovery, Recovery Facilities, Recovery Techniques, Nested Transaction Model. Security: Database Security–Threats, Computer-Based Controls–Authorization, Access Controls, Views, Backup and Recovery, Integrity, Encryption, RAID.

Text book:
1. Silberschatz, H. Korth and S. Sudarshan, Database System Concepts, 6th Ed., Tata McGraw Hill, 2011
2. Thomas M. Connolly, Carolyn E. Begg, Database Systems–A Practical Approach to Design, Implementation, and Management (6e)

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DATA BASE MANAGEMENT SYSTEMS - LAB
Practical   3 Hours/Week   1 Credit   Marks: 25

Note:
- Programs of all the Concepts from Text Book including exercises must be practice and execute.
- In the external lab examination student has to execute two programs with compilation and deployment steps are necessary.
- External Vice-Voce is compulsory.

1. Create a database having two tables with the specified fields, to computerize a library system of a University College.
   LibraryBooks (Accession number, Title, Author, Department, PurchaseDate, Price),
   IssuedBooks (Accession number, Borrower)

   a) Identify primary and foreign keys. Create the tables and insert at least 5 records in each table.
   b) Delete the record of book titled "Database System Concepts".
   c) Change the Department of the book titled "Discrete Maths" to "CS".
   d) List all books that belong to "CS" department.
   e) List all books that belong to "CS" department and are written by author "Navathe".
   f) List all computer (Department="CS") that have been issued.
   g) List all books which have a price less than 500 or purchased between "01/01/1999" and "01/01/2004".

2. Create a database having three tables to store the details of students of Computer Department in your college.
   Personal information about Student (College roll number, Name of student, Date of birth, Address, Marks(rounded off to whole number) in percentage at 10 + 2, Phone number)
   Paper Details (Paper code, Name of the Paper)
   Student's Academic and Attendance details (College roll number, Paper Code, Attendance, Marks in home examination).

   a) Identify primary and foreign keys. Create the tables and insert at least 5 records in each table.
   b) Design a query that will return the records (from the second table) along with the name of student from the first table, related to students who have more than 75% attendance and more than 60% marks in paper2.
   c) List all students who live in "Warangal" and have marks greater than 60 in paper1.
   d) Find the total attendance and total marks obtained by each student.
   e) List the name of student who has got the highest marks in paper2.

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3.   Create the following tables and answer the queries given below:

   Customer (CustID, email, Name, Phone, ReferrerID)
   Bicycle (BicycleID, DatePurchased, Color, CustID, ModelNo)
   BicycleModel(ModelNo,   Manufacturer,   Style)   Service
   (StartDate, BicycleID, EndDate)

   a) Identify primary and foreign keys. Create the tables and insert at least 5 records
      in each table.
   b) List all the customers who have the bicycles manufactured by manufacturer
      "Honda".
   c) List the bicycles purchased by the customers who have been referred by
      Customer "C1".
   d) List the manufacturer of red colored bicycles.
   e) List the models of the bicycles given for service.

4. Create the following tables, enter at least 5 records in each table and answer the queries given
    below.
    Employee (Person_Name, Street, City)
    Works (Person_Name, Company_Name, Salary)
    Company (Company_Name, City)
    Manages (Person_Name, Manager_Name)

    a) Identify primary and foreign keys.
    b) Alter table employee, add a column "email" of type varchar(20).
    c) Find the name of all managers who work for both Samba Bank and NCB Bank.
    d) Find the names, street address and cities of residence and salary of all
        employees who work for "Samba Bank" and earn more than $10,000.
    e) Find the names of all employees who live in the same city as the company
        for which they work.
    f)   Find the highest salary, lowest salary and average salary paid by each
         company.
    g) Find the sum of salary and number of employees in each company.
    h) Find the name of the company that pays highest salary.

5. Create the following tables, enter at least 5 records in each table and answer the queries given
    below.
    Suppliers (SNo, Sname, Status, SCity)
    Parts (PNo, Pname, Colour, Weight, City)
    Project (JNo, Jname,Jcity)
    Shipment (Sno, Pno, Jno, Qunatity)

    a) Identify primary and foreign keys.
    b) Get supplier numbers for suppliers in Paris with status>20.
    c) Get suppliers details for suppliers who supply part P2. Display the supplier list in
       increasing order of supplier numbers.
    d) Get suppliers names for suppliers who do not supply part P2.
    e) For each shipment get full shipment details, including total shipment weights.
    f) Get all the shipments where the quantity is in the range 300 to 750 inclusive.
    g) Get part nos. for parts that either weigh more than 16 pounds or are supplied by   suppliers
       S2, or both.
    h) Get the names of cities that store more than five red parts.
    i) Get full details of parts supplied by a supplier in Hyderabad.

j) Get part numbers for part supplied by a supplier in Warangal to a project in Chennai.

k) Get the total number of project supplied by a supplier (say, S1).

l) Get the total quantity of a part (say, P1) supplied by a supplier (say, S1).

6. Write a PL/SQL Program to demonstrate Procedure.
7. Write a PL/SQL Program to demonstrate Function.
8. Write a PL/SQL program to Handle Exceptions.
9. Write a PL/SQL Program to perform a set of DML Operations.
10. Create a View using PL/SQL program.
11. Write a PL/SQL Program on Statement Level Trigger.
12. Write a PL/SQL Program on Row Level Trigger.

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KAKATIYA UNIVERSITY
FACULTY OF SCIENCE
B.Sc. (Computer Science)
SEMESTER – V
Programming in Java

Theory	4 Hours/Week	4 Credit	Internal marks = 20
Practical	3 Hours/Week	1 Credit	External Marks = 80

Unit - I

Introduction: Java Essentials, JVM, Java Features, Creation and Execution of Programs, Data Types, Structure of Java Program, Type Casting, Conditional Statements, Loops, Classes, Objects, Class Declaration, Creating Objects.

Unit - II

Method Declaration and Invocation, Method Overloading, Constructors – Parameterized Constructors, Constructor Overloading, Cleaning-up unused Objects. Class Variables &Method-static Keyword, this Keyword, One-Dimensional Arrays, Two-Dimensional Arrays, Command-Line Arguments, Inner Class.

Inheritance: Introduction, Types of Inheritance, extends Keyword, Examples, Method Overriding, super, final Keyword, Abstract classes, Interfaces, Abstract Classes Verses Interfaces.

Packages: Creating and Using Packages, Access Protection, Wrapper Classes, String Class, StringBuffer Class.

Unit - III

Exception: Introduction, Types, Exception Handling Techniques, User-Defined Exception.

Multithreading: Introduction, Main Thread and Creation of New Threads –By Inheriting the Thread Class or Implementing the Runnable Interface, Thread Lifecycle, Thread Priority and Synchronization.

Input/Output: Introduction, java.io Package, File Streams, FileInputStream Class, FileOutputStream Class, Scanner Class, BufferedInputStream Class, BufferedOutputStream Class, RandomAccessFile Class.

Unit - IV

Applets: Introduction, Example, Life Cycle, Applet Class, Common Methods Used in Displaying the Output (Graphics Class).

Event Handling: Introduction, Types of Events, Example.

AWT: Introduction, Components, Containers, Button, Label, Checkbox, Radio Buttons, Container Class, Layouts.

Swings: Introduction, Differences between Swing and AWT, JFrame, JApplet, JPanel, Components in Swings, Layout Managers, JTable.

Text Book:
1. Sachin Malhotra, Saurabh Choudhary, Programming in Java (2e)

References:
1. Bruce Eckel, Thinking in Java (4e)
2. Herbert Schildt, Java: The Complete Reference (9e)
3. Y. Daniel Liang, Introduction to Java Programming (10e)
4. Paul Deitel, Harvey Deitel, Java: How To Program (10e)
5. Cay S. Horsttnann, Core Java Volume I –Fundamentals (10e)

Department of Computer Science, KU

With Effect from the Academic Year 2019-2020

KAKATIYA UNIVERSITY
FACULTY OF SCIENCE
B.Sc. (Computer Science)
SEMESTER – V
Programming in Java Lab

Practical   3 Hours/Week   1 Credit Marks: 25

Note:

- Programs of all the Concepts from Text Book including exercises must be practice and execute.
- In the external lab examination student has to execute two programs with compilation and deployment steps are necessary.
- External Vice-Voce is compulsory.

1. Write a program to find the largest of n natural numbers.
2. Write a program to find whether a given number is prime or not.
3. Write a menu driven program for following:
   a. Display a Fibonacci series
   b. Compute Factorial of a number
4. Write a program to check whether a given number is odd or even.
5. Write a program to check whether a given string is palindrome or not.
6. Write a program to print the sum and product of digits of an Integer and reverse the Integer.
7. Write a program to create an array of 10 integers. Accept values from the user in that Array. Input another number from the user and find out how many numbers are equal to the number passed, how many are greater and how many are less than the number passed.
8. Write a program that will prompt the user for a list of 5 prices. Compute the average of the prices and find out all the prices that are higher than the calculated average.
9. Write a program in java to input N numbers in an array and print out the Armstrong numbers from the set.
10. Write java program for the following matrix operations:
    a. Addition of two matrices
    b. Transpose of a matrix
11. Write a java program that computes the area of a circle, rectangle and a Cylinder using function overloading.
12. Write a Java program for the implementation of multiple inheritance using interfaces to calculate the area of a rectangle and triangle.
13. Write a java program to create a frame window in an Applet. Display your name, address and qualification in the frame window.
14. Write a java program to draw a line between two coordinates in a window.
15. Write a java program to display the following graphics in an applet window.
    a. Rectangles   b. Circles
    c. Ellipses   d. Arcs   e. Polygons
16. Write a program that reads two integer numbers for the variables a and b. If any other character except number (0-9) is entered then the error is caught by NumberFormatException object. After that ex.getMessage () prints the information about the error occurring causes.
17. Write a program for the following string operations:
    a. Compare two strings   b. concatenate two strings   c. Compute length of a string

18. Create a class called Fraction that can be used to represent the ratio of two integers. Include appropriate constructors and methods. If the denominator becomes zero, throw and handle an exception.

Department of Computer Science, KU   With Effect from the Academic Year 2019-2020

KAKATIYA UNIVERSITY
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B.Sc. (Computer Science)
SEMESTER – VI
Web Technologies

Theory	4 Hours/Week	4 Credit	Internal marks = 20
Practical	3 Hours/Week	1 Credit	External Marks = 80

Unit – I

Introduction To XHTML– Introduction, first HTML, Headings, Linking, Images, special characters and horizontal rules, Lists, Tables, Frames, Forms, internal linking, meta Elements. CASCADING STYLE SHEETS – Introduction, Inline Styles, Embedded Style Sheets, Conflicting Styles, Linking external sheets, position Elements, box model and text flow, media types, building a CSS drop-down menu, user style sheets, CSS3.

Unit – II

Introduction To Java Scripting- introduction, simple program, prompt dialog and alert boxes, memory concepts, operators, decision making, control structures, if... else statement, while, counter-controlled repetitions, switch statement, do... while statement, *break* and *continue* statements. Functions – program modules in JavaScript, programmer–defined functions, functions definition, scope rules, global functions, Recursion.

Unit – III

Arrays- introduction, declaring and allocating arrays, references and reference parameters, passing arrays to functions. Multidimensional arrays, **EVENTS** – registering event handling, event onload, onmouseover, onmouseout, onfocus, onblur, onsubmit, onreset, event bubbling, more events. **JAVA SCRIPT OBJECTS** – introduction to object technology, Math Object, String Object, Date Object, Boolean and Number Object, document and window Objects, using cookies.

Unit – IV

XML - Introduction, XML Basics, Structuring Data, XML Namespaces, Document Type Definitions (DTDs), W3C XML Schema Documents, XML Vocabularies, Extensible Style sheet Language and XSL Transformations, Document Object Model (DOM).

Ajax-Enabled Rich Internet Applications: introduction, history of Ajax, traditional web applications Vs Ajax Applications, RIAs with Ajax, Ajax example using XMLHttpRequest object, XML and DOM, creating full scale Ajax-enabled application, Dojo Toolkit.

Text Book:
1. Internet & World Wide Web: HOW TO PROGRAM- H. M. Deitel, P.J. Deitel, -Fourth Edition- Pearson edition.

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With Effect from the Academic Year 2019-2020

Dr. B. RAMA
Department of Computer Science
KAKATIYA UNIVERSITY
Warangal- 506 009 (T.S.)

Practical 3 Hours/Week 1 Credit Marks: 25

1. Write a HTML program using basic text formatting tags, <p>, <br>, <pre>.
2. Write a HTML program by using text formatting tags.
3. Write a HTML program using presentational element tags <b>, <i>, <strike>, <sup>, <sub>, <big>, <small>, <hr>
4. Write a HTML program using phrase element tags <blockquote>, <cite>, <abbr>, <acronym>, <kbd>, <address>
5. Write a HTML program using different list types.
6. Create a HTML page that displays ingredients and instructions to prepare a recipe.
7. Write a HTML program using grouping elements <div> and <span>.
8. Write a HTML Menu page for Example cafe site.
9. Write a HTML program using images, audios, videos.
10. Write a HTML program to create your time table.
11. Write a HTML program to create a form using text inputs, password inputs, multiple line text input, buttons, check boxes, radio buttons, select boxes, file select boxes.
12. Write a HTML program to create frames and links between frames.
13. Write a HTML program to create different types of style sheets.
14. Write a HTML program to create CSS on links, lists, tables and generated content.
15. Write a HTML program to create your college web site using multi column layouts.
16. Write a HTML program to create your college web site using for mobile device.
17. Write a HTML program to create login form and verify username and password.
18. Write a JavaScript program to calculate area of rectangle using function.
19. Write a JavaScript program to wish good morning, good afternoon, good evening depending on the current time.
20. Write a JavaScript program using switch case?
21. Write a JavaScript program to print multiplication table of given number using loop.
22. Write a JavaScript programs using any 5 events.
23. Write a JavaScript program using JavaScript built in objects.
24. Write a JavaScript program to create registration Form with Validations.
25. Write a XML Program to represent Student Data using DTD.
26. Write a XML Program to represent Data using XML Schema Definition.