FACULTY OF LIBERAL ARTS

MA ENGLISH

BTCS101: JOY OF COMPUTING

Pre-Requisites: None

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Course Objectives

Upon successful completion of this course students should be able to:

1. understand the architecture of a computer system
2. understand the various hardware parts of a computer system
3. implement programs in C

Contents

Introduction to the Digital Computer: Characteristics of computer system, Introduction tooperating systems (DOS, Linux, Windows), function and types of operating system, Role of device driver in OS. MS Office, MS Word, MS PowerPoint and MS Excel.

Planning the Computer Program: Concept of problem solving, Techniques of ProblemSolving: Flowcharting, algorithms, pseudo code, Structured programming concepts, Programming methodologies viz. top-down and bottom-up programming. Overview of C: History of C, Importance of C, Structure of a C Program. Elements of C: C character set, identifiers and keywords, Data types, Tokens.

Input/output Functions: Operators &Expression, Type Casting, Decision making & branching:Decision making with IF statement, IF-ELSE statement, Nested IF statement, ELSE-IF ladder, switch statement, goto statement. Decision making & looping: For, while, and do-while loop, jumps in loops, break, continue statement.

Functions: Definition, prototype, passing parameters -Call-by-value, Call-by-reference, recursion. Storage classes in C: auto, extern, register and static storage class, their scope, storage, & lifetime. Arrays: Definition, types, initialization, processing an array, Strings & arrays.

Pointer variable and its importance: Pointer Arithmetic, passing parameters by reference,pointer to pointer, linked list, pointers to functions, dynamic memory allocation. Declaration of structures, declaration of unions, pointer to structure & unions

Suggested Books:

1. Yashwant Kanetkar, "Let us C", BPB Publications, 2nd Edition, 2001.
2. Herbert Schildt, "C: The complete reference", Osbourne Mcgraw Hill, 4th Edition, 2002.
3. P.K. Sinha "Computer Fundamentals" B.P.B Publication.

List of experiments:

1. Exercise on MS Word Creating a basic document in MS Word, formatting document, adding picture, creating table.
2. Exercise on MS Excel creating list, graphs etc.
3. Exercise on MS PowerPoint, creating presentation, slide show, adding animation etc.
4. WAP to print C hello world program.
5. WAP to perform simple arithmetic operations using different data types
6. WAP to show swap of two no's without using third variable
7. WAP to find the roots of a quadratic equation.
8. WAP to check the number is odd or even and find the sum of all odd and all even separately.
9. WAP to find out whether the given number is prime or not and find sum of all prime up to N
10. WAP to reverse a given number and check the palindrome status.
11. WAP to print corresponding days of a week using switch case.
12. WAP to find and generate the Armstrong number.
13. WAP to print various patterns.
14. WAP to interchange two values using pointers.
15. WAP to interchange two values using call by value and call by reference.
16. WAP to print factorial of a number using recursion & without using recursion.
17. WAP to print Fibonacci series. (a) Without using function, (b) using function, (c) using recursion.
18. WAP to print an array and find greatest/smallest element of an array.
19. WAP to perform linear searching in an array.
20. WAP to insert/ delete element from an array.
21. WAP to sort the array's element using Bubble sort.
22. WAP to perform the following string functions.
    a. Strlen b. strcmp c. strcpy d. strcat e. strlwr f. strupr
23. Declare a suitable structure of a college and print the name and DOB of the students have scored more than sixty percent marks in end semester exam
24. Declare a suitable structure for an organization and print all the names of employees having salary more than Rs.1000