CS2002D PROGRAM DESIGN

Lecture - 1

- What ?
- When?
- How?
- Why?

Why do we learn Program Design course?

1. _____
2. _____
3. _____

Question-1: What are the essential steps in solving a problem using computer?

1.

2.

3.

Course Outcome - 1

Design, analyse and prove the correctness of simple, iterative and recursive algorithms

Question 2: How efficiently can you search a name in an array consisting of 10 Million names?

1. _____
2. _____
3. _____

Question 3: How efficiently can you arrange 100 Million names in alphabetical order?

1. _____
2. _____
3. _____

Course Outcome - 2

Analyze algorithms for sorting and searching

Question 4: Consider 10 Million names stored in an alphabetical order. I want to insert a name in this sorted list at location 10,000. How can we do this?

1. _____
2. _____
3. _____

Question 5:How to represent the hierarchy of an institute / organization. How do we systematically access every role in the institute/organization?

1. _____
2. _____
3. _____

Course Outcome - 3

Select appropriate data structure for solving a given problem

Question 6:How to create a variable sized array? How the different memory management functions are implemented?

1. _____
2. _____
3. _____

Course Outcome - 4

Compare different techniques for memory management

COURSE OBJECTIVES

- To introduce the students to the concept of algorithms, their role in computing and simple data structures.

- To equip the students to design correct and efficient algorithms for computational problems.

Conditional Control Structures

Objectives

- To understand how decisions are made in a computer
- To understand the relational operators
- To understand the logical operators and, or and not
- To write programs using relational and logical operators
- To write programs that uses two way selection. if…else statements
- To write programs that uses multi way selection if…else if ladder and switch case
- To understand classification of characters

- What does Control Structures do?
- What are the different types of execution flow for them?

Control Structures

- **Control structures** control the flow of execution in a program or function.
- There are three kinds of execution flow:
  - **Sequence:**
    - the execution of the program is sequential. (add/sub/mul/div of two numbers)
  - **Selection:**
    - A control structure which chooses alternative to execute.
  - **Repetition:**
    - A control structure which repeats a group of statements.
- We will focus on the **selection** control structure.

THANK YOU