

Quadrant II – Transcript and Related Materials

Programme: F.Y.B.Sc

Subject: Computer Science

Paper Code: CSC102

Paper Title: Data Structures

Unit:6-Searching

Module Name: Binary Search; Comparison of Linear and Binary Search

Module No: 32

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Notes:

BiNARY SEARCh

- ***Binary Search is used for searching an element in a sorted array.***
- ***It is a fast search algorithm with run-time complexity of O .***
- ***Binary search works on the principle of divide and conquer.***
- ***This searching technique looks for a particular element by comparing the middle most element of the collection.***
- ***It is useful when there are large number of elements in an array.***

5	10	15	20	25	30
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✚ *The above array is sorted in ascending order. As we know binary search is applied on sorted lists only for fast searching.*

➤ *For example, if searching an element 25 in the 7-element array, following figure shows how binary search works:*



Fig. Working Structure of Binary Search

Binary searching starts with middle element. If the element is equal to the element that we are searching then return true. If the element is less than then move to the right of the list or if the element is greater than then move to the left of the list. Repeat this, till .