**Work Breakdown Structure (WBS)**

**SIMULATION OF CISCO ROUTER AUTO-COMPLETE**

**S.Y. B.Tech**

**B DIV**

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**HIERARCHICAL VIEW OF WBS:-**

**CISCO ROUTER**

**Auto-complete**

1

Analysis

1.1

Data Structures

1.2

File Handling

1.3

OOP

1.4

Trie Data Structure

1.2.1

Hashing

1.5

Definition of

Auto-Complete

1.1.1

Logic of

Auto-Complete

1.1.2

Study of CISCO Routers

1.1.3

Trees

1.2.2

Linked List

1.2.3

Pointers

1.2.4

Storing Data

1.3.1

Retrieving Data

1.3.2

Updating Data

1.3.3

Encapsulation

1.4.1

Re-Usability

1.4.2

Secure Storage

1.5.1

Hash Function

Implementation

1.5.2

# WBS Dictionary:-

| Level | WBS Code | Element Name | Definition |
| --- | --- | --- | --- |
| 1 | 1 | Cisco Router Auto-Complete | Implement Auto-Complete Feature used in Cisco Routers. |
| 2 | 1.1 | Analysis | The analysis of the project. |
| 3 | 1.1.1 | Definition of Auto-Complete | Auto-Complete definition. |
| 3 | 1.1.2 | Logic of Auto-Complete | Understanding the process of Auto-Complete. |
| 3 | 1.1.3 | Study of Cisco Routers | Working of Cisco Routers in detail. |
| 2 | 1.2 | Data Structures | Use of Various data structure to implement the project. |
| 3 | 1.2.1 | Trie Data Structure | Implementing Trie to give suggestions. |
| 3 | 1.2.2 | Trees | Using general tree to store commands. |
| 3 | 1.2.3 | Linked List | Linked representation of hash values to be stored. |
| 3 | 1.2.4 | Pointer | To point to different characters individually to get the right command. |
| 2 | 1.3 | File Handling | Use of binary files to store and retrieve. |
| 3 | 1.3.1 | Storing Data | Used to store data in binary format. |
| 3 | 1.3.2 | Retrieving Data | Retrieving commands from external files stored on device. |
| 3 | 1.3.3 | Updating Data | To provide functionality to add new commands to the existing file. |
| 2 | 1.4 | OOP | Concepts of OOP used to manage the commands and objects. |
| 3 | 1.4.1 | Encapsulation | Encapsulating data to show only necessary attributes. |
| 3 | 1.4.2 | Re - Usability | Re using functions to find the commands more efficiently. |
| 2 | 1.5 | Hashing | Storing of data through hashing for faster access. |
| 3 | 1.5.1 | Secure Storage | Hashing and storing the commands in binary format to provide high level of security. |
| 3 | 1.5.2 | Hash Function Implementation | Hash function to get the key value to store commands in a chained linked list format. |

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