

DATA STRUCTURES AND ITS APPLICATIONS (UE22CS252A)

Mini Project



Project Title & Team Members

Title : Enhancement of an ecommerce website

Team Members :

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SYNOPSIS

- **We each designed 3 Features for our ecommerce website:**
- **Json parser : Parses the JSON database file and provides endpoints for the other components.**
- **Product Search using Prefix Trees.**
- **Recommendation system using graphs. The system suggests related product to the product of interest based on a given parameter.**

ADT USED

- **Autocomplete System: Implemented Trie to match closest search based on Prefix matching . ADTs used: insert, display, display_prefix.**
- **The insert function helps initializes the word inside the trie.**
- **Display , traverses the parent trie and its children then prints out the particular searched word**
- **Display_prefix , takes in a particular prefix , and prints out all the words with that prefix .**

ADT USED

- **Recommendation System :** The database is read using the json parser and made into a linked list for easy traversal, we use create node to make new nodes and update node function to update to linked list.
- We use array of pointers to represent the graph . According to cost of the interested node, the weight of the others are decided, and the closest ones are updated in the array.
- We then use the outdegree count to display related items to the interested one. **Json Parser :** It uses 2 stacks .It uses the pop and push ADT of stack .

ADT USED

Output image:

```
[~/dev/rando-react/scripts/src (master)] => ./soothsayer
Enter 1 to search products
Enter 2 to find closest match based on prices
>1

Enter the product name to search:
Pixel

Pixel_1
Pixel_2
Pixel_3
Pixel_5
Pixel_6
Pixel_7
Pixel_8
Enter 1 to search products
Enter 2 to find closest match based on prices
>2

Find closest match based on price:
Pixel_1
name:iPhone_13
cost999
name:Galaxy_S21
cost799
name:Envy_x360
cost899
name:Pixel_6
cost699
name:Pixel_5
cost699
name:Pixel_3
cost699
name:Pixel_2
cost699
name:Pixel_1
cost699
name:Pixel_8
cost699
name:Pixel_7
cost699
```

Contribution of each Team Member

Narayan S: Json parser

Nikhil : Auto complete system

Nitheesh : recommendation system

Thank You