Section 2 : Proposed Architecture

USER PANEL

1. **Sign Up:** User can register by-
    a) Name
    b) Email Address
    c) Password

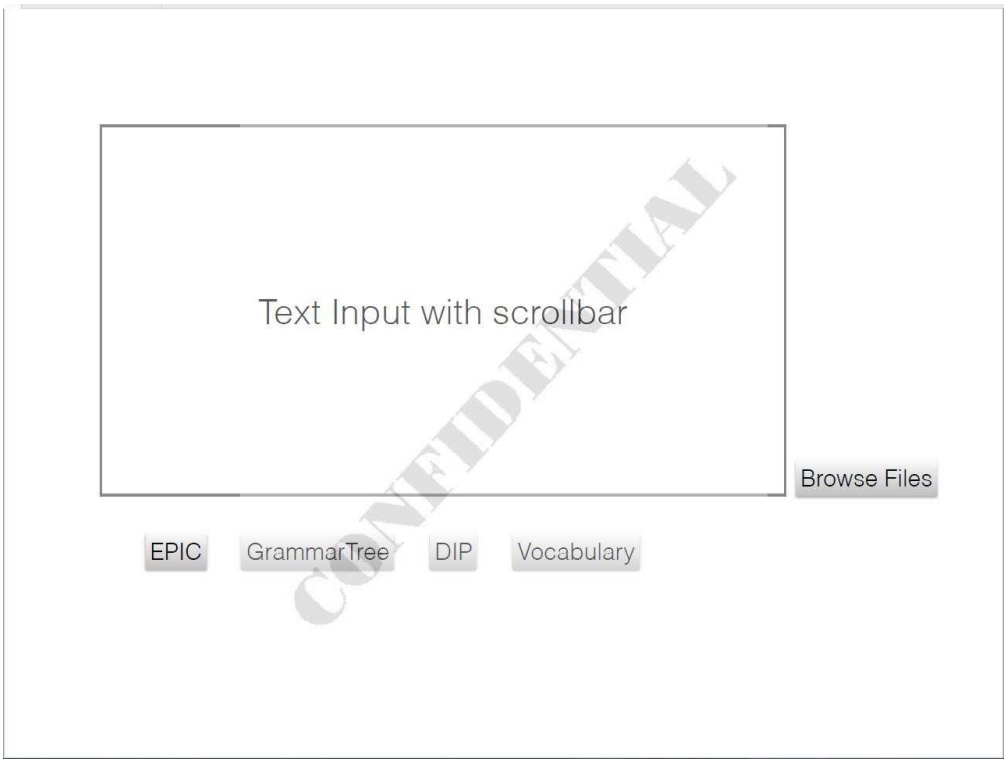
    Note: Confirmation email will be sent to registered email address

2. **Login:** User can login by-
    a) Email Address
    b) Password

    Note: In case of forget password, a password reset link will be sent to registered email address.

    Note : User can login as a guest users also , right now every feature will be accessible for a guest user.

3. **Home Screen:**



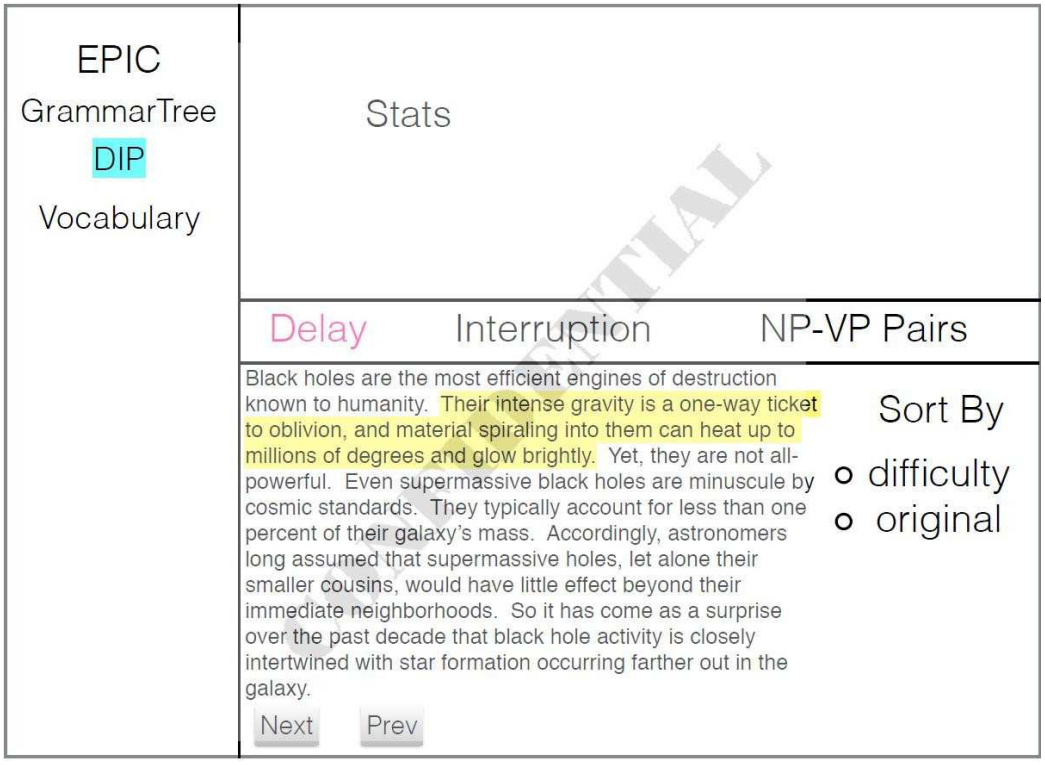
User can either type text in the box or can browse text file from its system. Once the text box is populated, it can carry out the following tasks-

a) DIP++
b) Tree view
c) EPIC
d) Vocabulary
e) Essay Analysis

4. **Subscription Plan:**
    a) User can choose or change his subscription plan
    b) Memberships can be dynamically made by the admin
    c) User can pay for the subscription plan by-
        i. Credit/Debit Card
        ii. PayPal

d) There will be an option to maintain features in admin panel. In admin panel there will be a free subscription plan , right now it will have accessibility to all available features, and it will be controlled via admin panel which can be changed later by admin itself

5. **DIP (Delay Interruption Noun Phrase-Verb Phrase Pairs):**

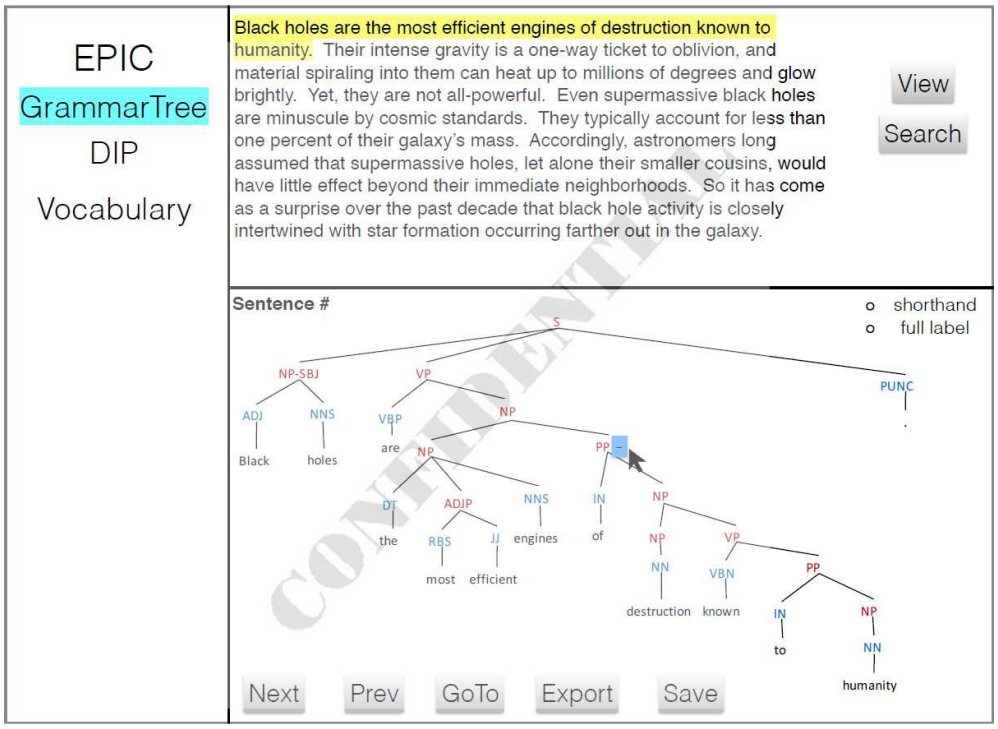


a) The user cannot select or check which DIP it is. The system will do the highlighting and displaying. On the 'Delay' page, only those sentences with a non-zero delay score will be displayed.

b) User can sort by-
   i. Difficulty
   ii. Original

c) User navigate by the 'Next' and 'Prev' buttons

6. **Grammar Tree:**



a) User can not select text , user can use the buttons 'next', 'prev' and 'goto' to navigate through the text.

h) User can navigate by 'Next', 'Prev', and 'Goto' buttons

b) User can expand or compress any node
c) User can search a particular part of speech in the entire passage.
d) User can save the grammar tree to view later
e) User can export grammar tree as displayed in the form of image
f) User can modify the tree like changing its order / parent.

g) User can change the text of each node

7. **EPIC (Explicit Connective Pointing Phrase Implicit Connective Concept Cluster):**
   a) Explicit Connective:

i. User can select/highlight a word present in text box to define its relation with other elements in the text box

ii. User can add multiple elements that belong to the current relation with the selected word.

iii. User can add/delete/save a particular instance of word selection and its relation with other elements

iv. navigation buttons

Note: everything in the search dropdown list is search-able. Most of these will be part-of-speech, but there could be other things. Java will provide search result and front-end will highlight the corresponding portion of the tree.

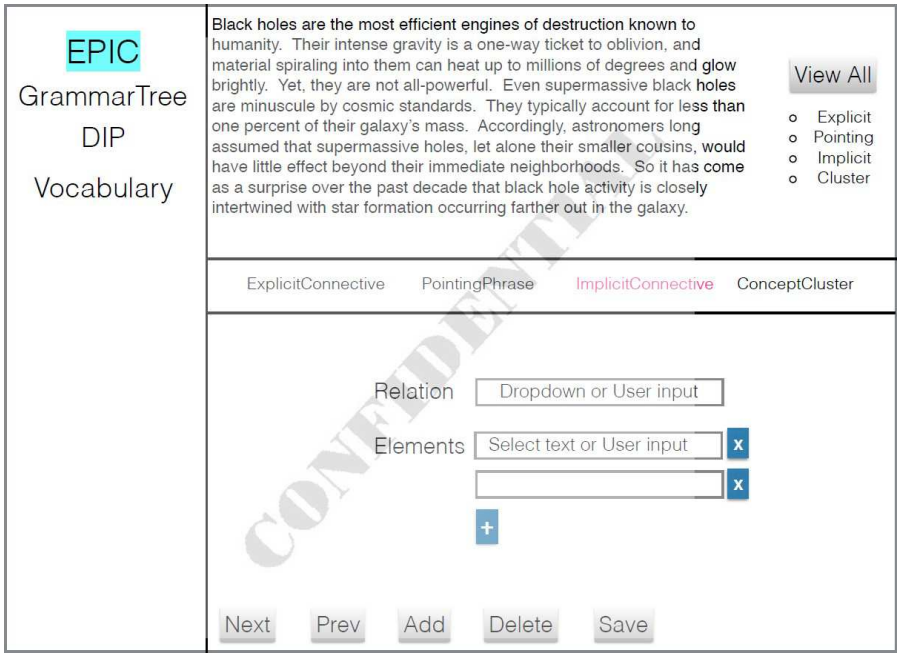
b) Pointing Phrase:

i. User can select/highlight a particular word to view/define its reference in the text box

ii. User can add/delete/save a particular instance of word selection and its reference

iii. navigation buttons

c) Implicit Connective:



i. User can view/define relation of elements/words not present in the text box
ii. User can add multiple elements having similar relation
iii. User can add/delete/save a particular instance of relation of elements/words not present in the text box
iv. User can use a marker to mark the location in the passage. This marker can be updated later also.
v. Four buttons will be implemented as mentioned in the image above for Explicit,Pointing,Implicity,Cluster.

vi. navigation buttons

d) Concept Cluster:

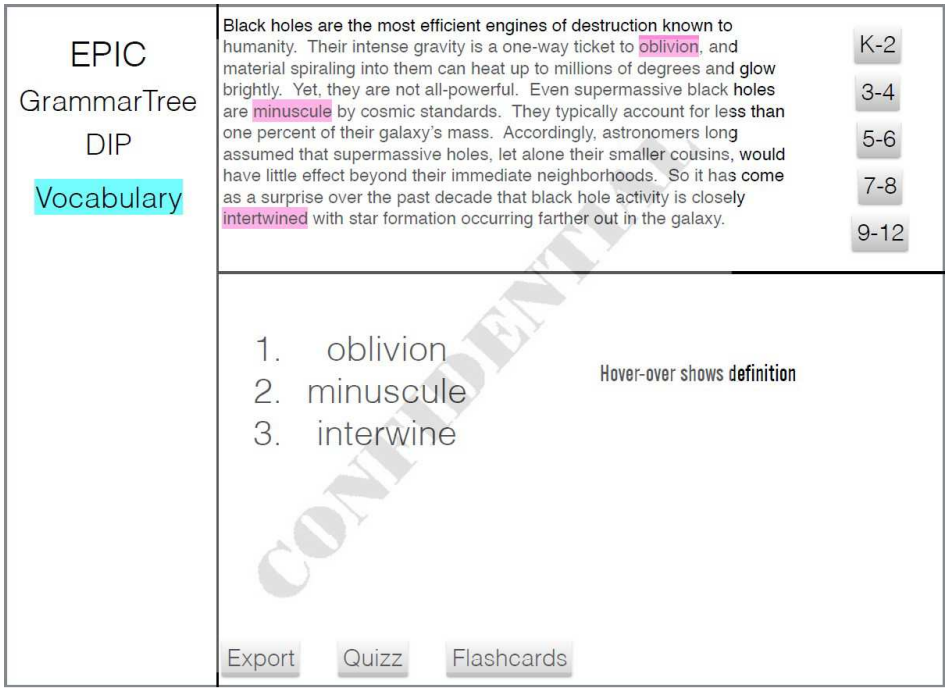
i. User can view/define multiple words present in the text box having similar theme
ii. User can choose color from color palette to highlight multiple words
iii. User can add/delete/save a particular instance of members words having similar theme

iv. navigation buttons

Note: the words/phrases either added by user or generated by java will be highlighted in the top panel.

v. on the top panel, user can select View All or subset of the 4 components

8. **Vocabulary:**



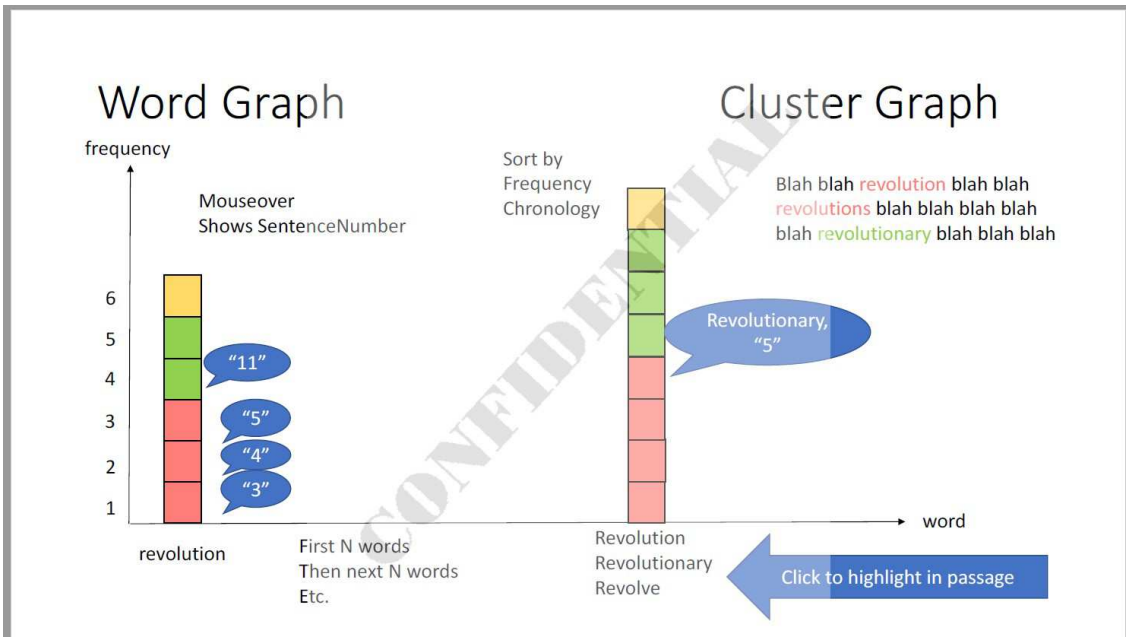
a) User can view the meaning of the selected/highlighted words from the text box
b) When user hover-over a particular word, it will display its definition
c) User can export the definition of words in text format
d) User can generate quiz and flashcards.
e) Vocabs are generated based on grade levels.

9. Essay Analysis:

a) User can either type, paste text or browse text files from the system to analyse the essay.

b) Essay analysis is represented in the form of graphs and text

c) Graphs can be generated on different sorting methods.



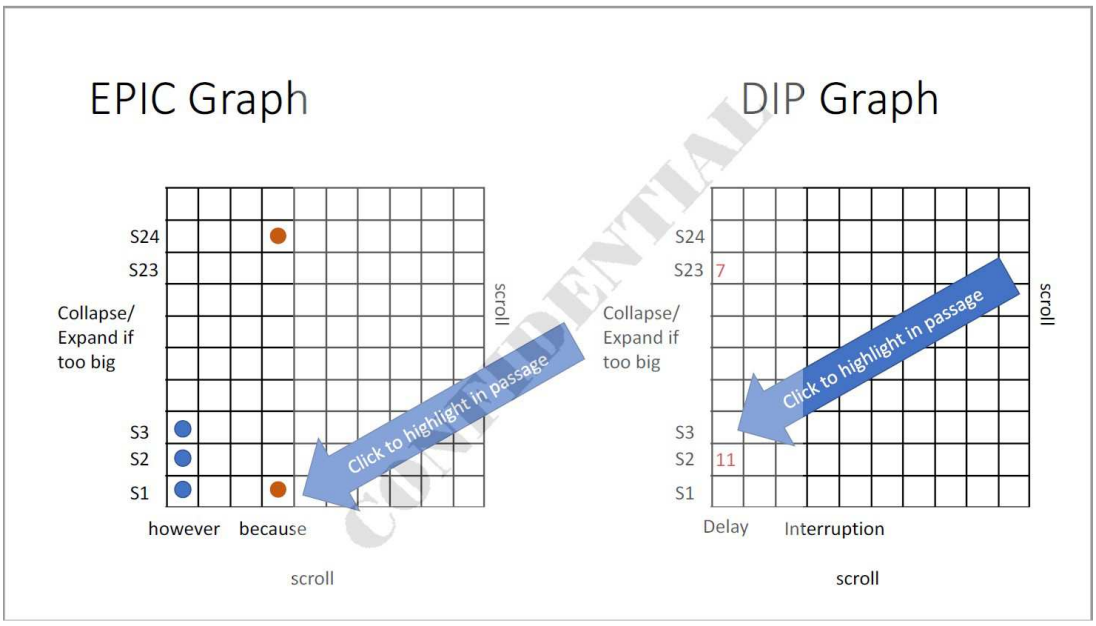
i. Word Graph:
- It displays the frequency of a particular word in the passage
- When the user hover-over, it displays the sentence number

ii. Cluster Graph
- It displays the words having similar theme in the passage
- It displays number of occurrence of each word in the passage
- When the user click a particular word, it will be highlighted in passage

iii. Main analysis page
- ~~In this region there are no transition words~~.

Display analysis results

Note: There can be multiple cluster graphs depending on which clustering is requested by user.

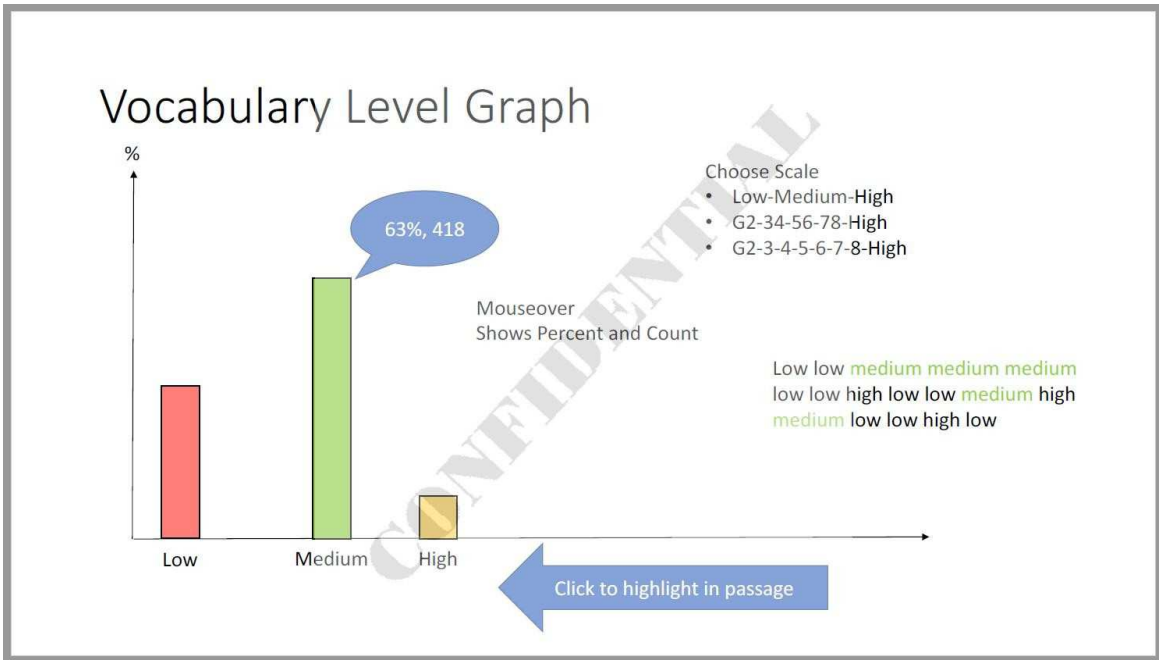


iv. EPIC Graph

- It displays the EPIC tasks in the form of matrix graph
- When the use click on a particular section, it will be highlighted in passage

v. DIP Graph

- It displays the DIP tasks in the form of matrix graph
- When the use click on a particular section, it will be highlighted in passage



vi. Vocabulary Graph

- It displays the vocabulary tasks in the form of bar graphs
- It shows the percent and count of selected word in the passage
- When the use click on a particular bar, it will be highlighted in passage
- Vocabulary level here is redefined.

ADMIN PANEL

1. **User Management:**
   a) Admin will have all the user information and details
   b) Admin can monitor user activity over the platform
   c) Admin can monitor features to be allowed to users on basis of their subscription

2) There will be some custom functions whom can be used to create new functions in java application to add new functions in it. These functions will consists of predefined input parameters. Output of these functions will be appropriately displayed on the front – end in its respective panel.

Please keep in mind my note about storing not just the (x,y) coordinates but also the location in the passage.