BAHRIA UNIVERSITY, (Karachi Campus)

Department of Computer Science

PROPOSAL

Course Title: Data Structure and Algorithm
Course Instructor: Ms. Lubna
Lab Instructor: Rabia Amjad

Course Code: CSL-221
Class: BS (CS)-3(B)
Name: MAHA SIDDIQUI
Date: 25/4/2024

PROJECT TITLE:
"SPELL CHECKER TRIVIA"

GROUP MEMBERS LIST:

<WITH TEAM LEAD>

MAHA SIDDIQUI (02-134231-096)

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PROJECT SCOPE:

1. The goal of this project is to develop an efficient spell-checking editor that highlights errors in a paragraph and provides suggestions for corrections in real-time.
2. The editor will utilize the Trie data structure for effective spell-checking, ensuring high accuracy and optimizing the correction process.
3. The project aims to assist users in improving their writing skills by identifying and correcting spelling errors seamlessly within their text.

PROJECT ABSTRACT:

1. The Spell-Checking Editor integrates advanced data structures with a user-friendly interface to enhance the writing experience.
2. It employs the Trie data structure, known for its efficiency in string operations, to power the spell-checking functionality within the editor.
3. Users will receive instant feedback on spelling errors as they type, along with suggested corrections, facilitating efficient editing and enhancing writing proficiency.
4. By leveraging the Trie data structure, the spell-checking process is streamlined and optimized, showcasing practical applications in text editing software.

Project Functionalities:

1. **Text Editing Engine:**
   Develop the core text editing engine responsible for detecting and highlighting spelling errors within the user's input paragraph.
2. **Spell-Checking Module:**
   Implement a Trie-based spell-checking algorithm to identify and suggest corrections for misspelled words in real-time.
3. **Error Highlighting:**
   Provide visual cues to users by highlighting misspelled words within the text editor interface.
4. **Feedback on Errors:**
   Display the number of spelling errors present in the paragraph, providing users with immediate feedback on their writing.
5. **User Interface (UI):**
   Design an intuitive and visually appealing interface for seamless interaction with the spell-checking editor.
6. **Statistics and Progress Tracking:**
   Include a feature to track users' editing statistics, such as the number of errors corrected and writing accuracy over time.
7. **Filing:**
   Optimize the codebase through efficient file handling mechanisms for data storage and retrieval.

MODULE DISTRIBUTION

1. **Text Editing Engine Module:**
   Manages the text editing process and detects spelling errors within the user's input paragraph.
2. **Spell-Checking Module:**
   Utilizes a Trie-based spell-checking algorithm to identify misspelled words and provide correction suggestions.
3. **Error Highlighting Module:**
   Highlights misspelled words within the text editor interface for easy identification by the user.
4. **Feedback Module:**
   Displays the number of spelling errors present in the paragraph, providing users with immediate feedback on their writing.
5. **User Interface (UI) Module:**
   Develops and implements the graphical user interface for the spell-checking editor, enhancing user experience and engagement.
6. **Statistics and Progress Tracking Module:**
   Tracks and displays users' editing statistics, including the number of errors corrected and writing accuracy improvements over time.
7. **Filing Module:**
   Implements efficient file handling mechanisms to optimize data storage and retrieval processes within the spell-checking editor.

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Teacher Signature: _____

Remarks: _____

Submission Date: 30/5/2024 (aprox).