Felcycle Challenge: Vigenère Decrypter - How to Use

Overview:
This application is designed to help you decrypt text using Vigenère ciphers, as well as perform brute force attempts on ciphered text with various constraints. Additionally, it can generate anagrams and filter results based on customizable criteria. The interface also supports toggling between light and dark modes and can be customized with partial keys, wildcards, and other advanced options.

Key Features:

- **Manual Vigenère Decryption:** Decrypt text using a provided key.

- **Brute Force Vigenère Decryption:** Attempt all possible keys for a given key length and constraints.

- **Anagram Generation:** Generate anagrams from specified text, optionally filtering and sorting them.

- **Filter & Results Sections:** Automatically filter keys, decrypted text, and multi-word results into separate sections.

- **Mode Switching:** Quickly toggle between light and dark mode for comfortable viewing.

- **Partial Keys & Wildcards:** Incorporate partial keys and wildcard keys for more nuanced brute force attempts.

- **Common & Extra Word Lists:** Use fetched common and extra words to filter or search for meaningful decrypted outputs.

- **Progress Tracking:** Visual progress bars and percentage indicators show the status of brute force and anagram generation tasks.

- **Reset & Start-Stop Controls:** Easily reset the app or pause/resume brute force searches.

Getting Started

1. **Open the App:**
   Open the index.html file in a modern web browser. Ensure app.js, styles.css, fel.png, bg.jpg, and extra-words.js are in the same directory. Your background image and logo will display if placed correctly.

2. **Default Mode & Appearance:**
   The app may start in dark mode by default. Use the toggle switch at the bottom

to switch between light and dark modes. The background includes a faint bg.jpg image, and fel.png is displayed above the main title for branding.

3. **Basic Manual Decryption:**

   o In the **"Cipher Word"** input, enter the ciphertext you want to decrypt.

   o In the **"Key"** input, enter the Vigenère key.

   o Click **"Solve"** to perform a manual decryption.

   o The result will appear in the **"Results"** section.

Using Brute Force

1. **Configure Cipher & Options:**

   o Enter your cipher text in the "Cipher Word" field.

   o Adjust any filters or options:

     ▪ **Remove D and R:** Remove these letters from the Vigenère table.

     ▪ **Add Zeroth:** Add an extra initial row to the Vigenère table.

     ▪ **Filter Repeated Keys, Common Words, Letters, etc.:** Activate checkboxes for additional filtering.

     ▪ **Use Word List Keys Only / Shift by 20 / Start from 20th Letter:** Further customize the Vigenère table and key generation constraints.

   o Set the desired **"Key Length for Brute Force"** from the dropdown.

   o Optionally enter a **Partial Key** if you know a portion of the key.

   o Add **Wild Card Keys** (left, right, mid) to wrap dynamically generated keys.

2. **Start Brute Force:**

   o Click **"Brute Force"** to begin testing keys.

   o The app will try keys that match your length and constraints, decrypting the cipher and displaying results.

   o A progress bar and percentage indicate how far along it is.

   o The "Time Remaining" estimate updates as brute forcing continues.

3. **Pause / Resume / Reset:**

- o Click **"Pause"** to halt brute forcing at any time.

- o Click **"Pause"** again (now labeled "Resume") to continue.

- o Click **"Reset"** to clear all results and start fresh.

4. **Filters & Results:**
   As the brute force proceeds, the app categorizes results:

   - o **Filtered Keys:** Shows keys from the combined word list or matching chosen criteria.

   - o **Filtered Decrypted Results:** Displays decrypted output that matches certain conditions.

   - o **4+ Word Results, 4+ Key Results:** Highlight keys/decrypted text containing 4+ letter words or keys from the word list.

   - o **Multi-Word Results & Full Word Results:** Show multi-word matches or full 8-character word matches if found.

Use these sections to zero in on meaningful decryptions.

Generating Anagrams

1. **Prepare Input for Anagrams:**

   - o The **"Anagrams"** section works with the current text in the "Cipher Word" field and previously generated results.

   - o Optionally, add manual words using the **"Enter words to add"** input and **"Add"** button. These words will then appear in the "Anagrams" textarea.

2. **Generate Anagrams:**

   - o Click **"Generate Anagrams"** to produce anagrams of the provided text.

   - o A separate progress bar and percentage show how long the generation might take.

   - o Once complete, filtered and unique anagrams appear in the "Anagrams" text area.

3. **Filtering & Counting:**

   - o The app uses common word lists and extra words for filtering and checking validity.

- o At completion, it shows how many keys and words were found, ensuring you understand the results at a glance.

Additional Controls & Features

- **Mode Switch:**
  At the bottom, a toggle switch is provided. The left side says "Light" and the right side says "Dark." By default, the app may start in dark mode:
  - o Slide the switch to the left for light mode.
  - o Slide it to the right for dark mode.

- **Background & Branding:**
  A faint background image (bg.jpg) is behind everything, and the fel.png logo is displayed above the title. These are purely aesthetic and do not affect functionality.

Tips & Troubleshooting

- **Key Length & Partial Keys:**
  If you know part of the key (partial key), enter it. This greatly reduces brute force complexity and runtime.

- **Wild Cards & Constraints:**
  Experiment with wild cards (left, right, mid) and table adjustments (remove D and R, shift by 20, start from 20th letter) to tackle unusual ciphers.

- **Filtering:**
  If you're overwhelmed by results, use the filtering checkboxes to narrow down meaningful keys and decryptions.

- **Performance:**
  Brute forcing large key spaces can be time-consuming. Use partial keys, word list keys, or filters to reduce the search space.

- **Resetting:**
  If you get lost or want a fresh start, click "Reset" to clear all fields, results, and progress bars.

In Summary:

1. Enter cipher text, optionally adjust keys and filters.

2. Click "Brute Force" or "Solve" to decrypt.

3. Use filters and separate result sections to find the best match.

4. Generate anagrams if needed.

5. Toggle between dark/light mode for comfort.

6. Reset to start over at any time.