

```

import json
import random
import time

def update_leaderboard(username, wpm):
    # Update and sort the leaderboard stored in a JSON file
    leaderboard = {}

    try:
        with open('leaderboard.json', 'r') as file:
            leaderboard = json.load(file)
    except FileNotFoundError:
        pass

    leaderboard[username] = wpm

    with open('leaderboard.json', 'w') as file:
        json.dump(leaderboard, file, indent=4, sort_keys=True)

def show_leaderboard():
    # Display the leaderboard from the JSON file
    try:
        with open('leaderboard.json', 'r') as file:
            leaderboard = json.load(file)

        sorted_leaderboard = {k: v for k, v in sorted(leaderboard.items(), key=lambda item: item[1],
reverse=True)}

        print("Leaderboard:")

        for rank, (user, wpm) in enumerate(sorted_leaderboard.items(), 1):
            print(f"{rank}. {user}: {wpm} WPM")
    except FileNotFoundError:

```

```
print("Leaderboard is empty.")
```

```
def load_words_from_json(category):
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```
    # Load words from a JSON file based on the selected category
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```
    with open(f'{category}.json', 'r') as file:
```

```
        data = json.load(file)
```

```
    return data
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```
def get_user_input(words):
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```
    # Capture user's input from the terminal
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```
    typed_words = input("Type the words: ").split()
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```
    return typed_words
```

```
def main():
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```
    print("Welcome to the Typing Test App!")
```

```
    while True:
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```
        username = input("Enter your username: ")
```

```
        print("Options: ")
```

```
        print("1. Start Typing Test")
```

```
        print("2. Show Leaderboard")
```

```
        print("3. Exit")
```

```
        choice = input("Choose an option: ")
```

```
        if choice == "1":
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```
            category = input("Select a category: ")
```

```
            words = load_words_from_json(category)
```

```
start_time = time.time()

print("Type the following words:")
print(" ".join(words))

typed_words = get_user_input(words)
end_time = time.time()

time_taken = end_time - start_time
words_typed = len(typed_words)
wpm = words_typed / (time_taken / 60)

print(f"Words per minute: {wpm:.2f}")

update_leaderboard(username, wpm)
elif choice == "2":
    show_leaderboard()

elif choice == "3":
    print("Thank you for using the Typing Test App!")
    break

else:
    print("Invalid choice. Please try again.")
```