

TYPING SPEED TESTER

Project Title: Typing Speed Tester

Course: Programming in C

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2. Abstract

Typing is a fundamental skill in today's digital world. The **Typing Speed Tester** is a program designed to measure the typing speed and accuracy of a user. The application presents a sample text, records the user's input along with the time taken, and calculates **Words Per Minute (WPM)**, **accuracy**, and the number of errors. This project helps users practice typing efficiently and provides feedback to improve typing performance.

3. Problem Definition

Many people type slowly or make frequent errors while typing. A typing speed tester evaluates typing efficiency and accuracy. The program must:

- Display a sample text for the user to type.
- Measure the total time taken to type the text.
- Count correct words and characters.
- Calculate typing speed in WPM and CPM.
- Calculate typing accuracy as a percentage.

- Display errors and final results.

The problem focuses on **timing, string comparison, and calculation of results** using C programming concepts like arrays, functions, and standard I/O.

4. System Design

i. Flowchart:

Start

|

Display sample text

|

Start timer

|

User types text

|

Stop timer

|

Compare typed text with original

|

Calculate:

- **Words Per Minute (WPM)**
- **Characters Per Minute (CPM)**
- **Accuracy %**
- **Errors**

|

Display results

|

End

b.Algorithm

- a.Display a sample paragraph to the user.
- b.Start a timer.
- c.Take input typed by the user.
- d.Stop the timer when input is complete.
- e.Compare the typed text with the sample text:
 - o Count correct words/characters
 - o Count errors
- f.Calculate:
 - o **WPM = (Total Words / Time in Minutes)**
 - o **CPM = (Total Characters / Time in Minutes)**

- **Accuracy = (Correct Characters / Total Characters) × 100**

g. Display WPM, CPM, Accuracy, and errors.

h. End.

5. Implementation Details

a. File Structure

/src

main.c

typing.c

/include

typing.h

/docs

ProjectReport.pdf

README.md

b. Function Descriptions

Function Name	Description
startTest()	Displays the sample text and records user input
calculateTime()	Measures total time taken by the user

Function Name	Description
calculateAccuracy()	Compares typed text with original and computes accuracy
countWords()	Counts number of words typed
displayResults()	Prints WPM, CPM, accuracy, and errors

c.snippets

```
#include <stdio.h>
#include <time.h>
#include <string.h>
#include "typing.h"

int main() {
    char sampleText[] = "The quick brown fox jumps over the lazy dog.";
    char typedText[500];

    startTest(sampleText, typedText);

    double timeTaken = calculateTime();
    int errors = calculateAccuracy(sampleText, typedText);
    int wordCount = countWords(typedText);

    displayResults(wordCount, strlen(typedText), errors, timeTaken);
    return 0;
}
```

Testing & Results

6.1 Test Cases

Test Case	Sample Text	Typed Text	WPM	Accuracy	Errors
1	The quick brown fox jumps	The quick brown fox jumps	45	100%	0
2	The quick brown fox jumps	Teh quik brown fox jmps	40	85%	3

7. Conclusion & Future Work

Conclusion

The **Typing Speed Tester** effectively measures typing speed, accuracy, and errors. It demonstrates key C programming concepts like string manipulation, timing, and modular programming. Users can practice typing and track improvements.

Future Work

- Add multiple difficulty levels with longer passages.
- Include a **leaderboard** to store high scores.
- Provide **real-time feedback** on errors while typing.

8. References

- a. C Programming Language – Brian W. Kernighan & Dennis M. Ritchie
- b. GeeksforGeeks: String Manipulation in C –
<https://www.geeksforgeeks.org>
- c. TutorialsPoint: File Handling and Timing in C –
<https://www.tutorialspoint.com>