UNIVERSITY OF PETROLEUM AND ENERGY STUDIES, DEHRADUN

Synopsis Report

Of

Typefast Game C

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Introduction

The *TypeFast* game is a console-based application developed using the C programming language. It is designed to help users improve their typing speed and accuracy through interactive challenges. The game displays random words or sentences, tracks typing time, and evaluates performance based on speed and correctness.

Problem Statement

Many users lack engaging and lightweight tools to practice typing skills. Existing solutions are often web-based, require internet access, or demand high system resources. This project aims to provide an offline, resource-efficient alternative using basic C programming.

Objective

To develop a simple, interactive typing game that measures typing speed (Words Per Minute) and accuracy. The game uses standard C libraries and console I/O to create a responsive and educational experience.

Work Done Till Now

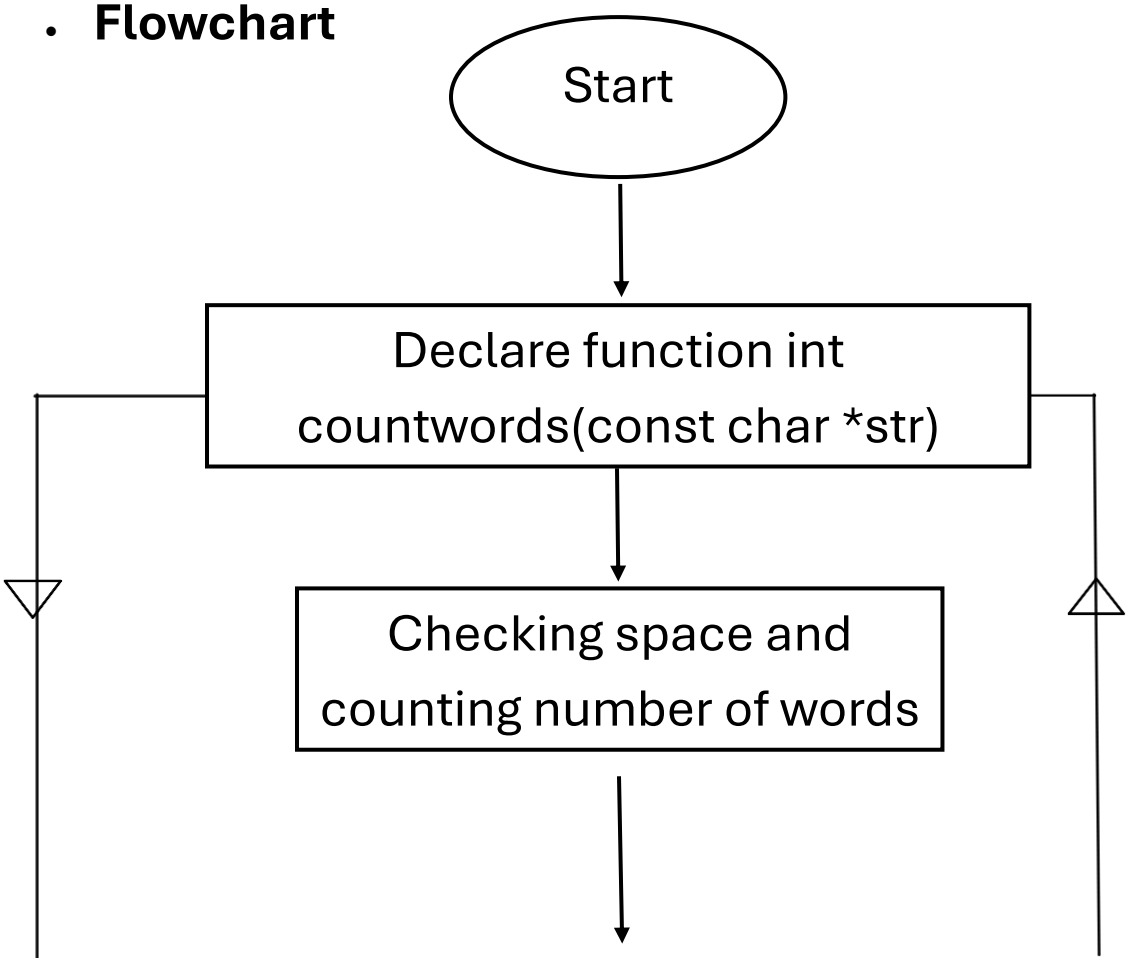
- Implemented random word generation using rand() and time() functions.
- Captured user input and compared it with target text.
- Measured typing duration using clock() or time() functions.

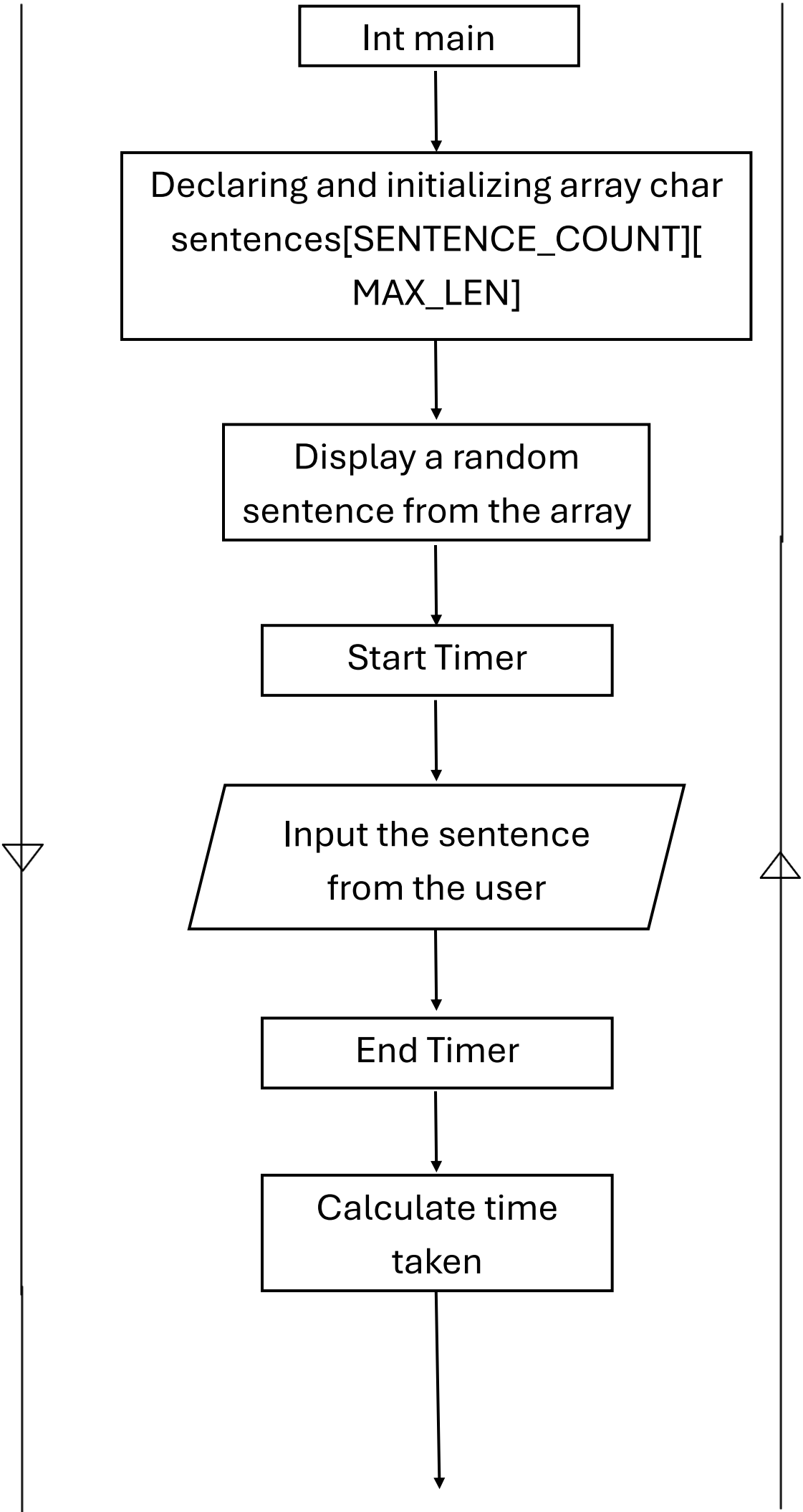
- Calculated WPM and accuracy.
- Added basic replay and result display functionality.

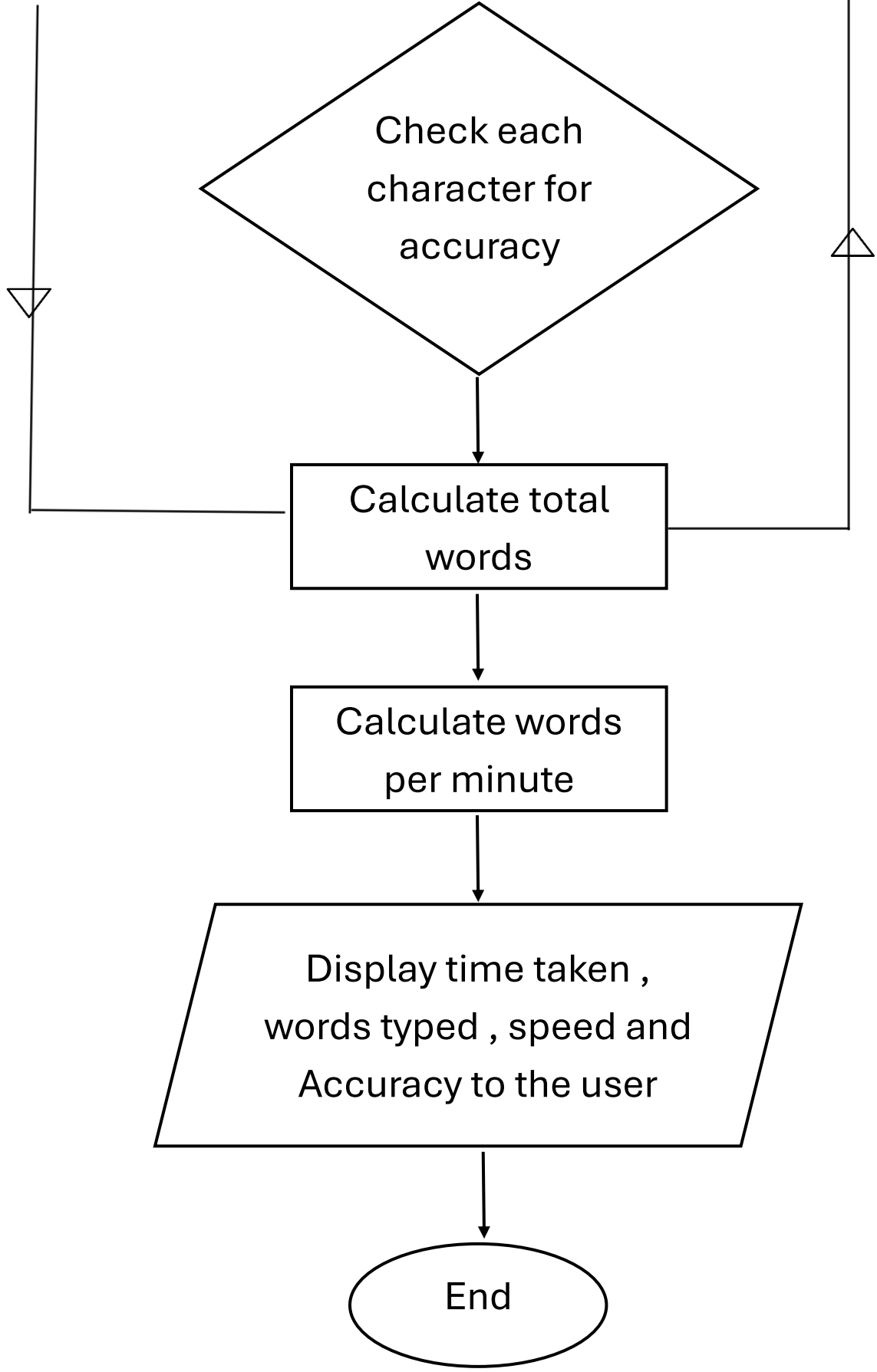
Tools Used

- **Programming Language:** C
- **IDE:** Visual Studio Code
- **Libraries:**
  - – Input/Output operations
  - – Utility functions
  - – Timing and randomization
  - – Real-time input

- **Flowchart**




Int main
Declaring and initializing array char sentences[SENTENCE_COUNT][MAX_LEN]
Display a random sentence from the array
Start Timer
Input the sentence from the user
End Timer
Calculate time taken


Check each character for accuracy
Calculate total words
Calculate words per minute
Display time taken , words typed , speed and Accuracy to the user
End

- **Code**

typefastgame.c > main()

```c
#include <stdio.h>
#include <string.h>
#include <time.h>
#include <stdlib.h>

#define SENTENCE_COUNT 5
#define MAX_LEN 200

// Function to calculate words typed
int countWords(const char *str)
{
    int count = 0;
    int inWord = 0;
    for (int i = 0; str[i] != '\0'; i++)
    {
        if (str[i] == ' ' || str[i] == '\n' || str[i] == '\t')
        {
            inWord = 0;
        }
        else if (inWord == 0)
        {
            inWord = 1;
            count++;
        }
    }
    return count;
}

int main()
{
    char sentences[SENTENCE_COUNT][MAX_LEN] =
    {
        "The quick brown fox jumps over the lazy dog.",
        "Typing speed tests are fun and challenging.",
        "C programming builds logic and problem solving skills.",
        "Speed and accuracy makes a great typist",
        "Debugging is twice as hard as writing the code"
    };

    srand(time(NULL)); // seeds the random number generator
    int choice = rand() % SENTENCE_COUNT; //Selects one of the sentences randomly using modulo

    printf("Type this sentence:\n\n%s\n\n", sentences[choice]);
```

```c
    printf("Type this sentence:\n\n%s\n\n", sentences[choice]);

    char input[MAX_LEN];
    clock_t start, end;

    // Start timer
    start = clock();
    fgets(input, MAX_LEN, stdin);
    end = clock();

    // Calculate time taken
    double time_taken = ((double)(end - start)) / CLOCKS_PER_SEC;

    // Accuracy check
    int correct_chars = 0;
    for (int i = 0; i < strlen(sentences[choice]); i++)
    {
        if (input[i] == sentences[choice][i])
        {
            correct_chars++;
        }
    }

    int total_words = countWords(input);
    double wpm = (total_words / time_taken) * 60;

    printf("\nTime taken: %.2f seconds", time_taken);
    printf("\nWords typed: %d", total_words);
    printf("\nSpeed: %.2f WPM", wpm);
    printf("\nAccuracy: %.2f%%\n", (correct_chars * 100.0) / strlen(sentences[choice]));

    return 0;
}
```

- **Output**

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS                                                    Code

PS C:\Users\parth\OneDrive\Desktop\C project 2> cd "c:\Users\parth\OneDrive\Desktop\C project 2\" ; if ($?) { gcc typefastgame.c -o typefastgame } ; if ($?) { .\typefastgame }
Type this sentence:

Typing speed tests are fun and challenging.

Typing speed tests are fun and challenging.

Time taken: 16.32 seconds
Words typed: 8
Speed: 29.42 WPM
Accuracy: 100.00%
PS C:\Users\parth\OneDrive\Desktop\C project 2> cd "c:\Users\parth\OneDrive\Desktop\C project 2\" ; if ($?) { gcc typefastgame.c -o typefastgame } ; if ($?) { .\typefastgame }
Type this sentence:

Speed and accuracy makes a great typist

Speed and accuracy makes a great typist

Time taken: 12.34 seconds
Words typed: 8
Speed: 38.89 WPM
Accuracy: 100.00%
PS C:\Users\parth\OneDrive\Desktop\C project 2> cd "c:\Users\parth\OneDrive\Desktop\C project 2\" ; if ($?) { gcc typefastgame.c -o typefastgame } ; if ($?) { .\typefastgame }
Type this sentence:

Debugging is twice as hard as writing the code

Debugging is twice as hard as writing the code

Time taken: 14.87 seconds
Words typed: 10
Speed: 40.34 WPM
Accuracy: 100.00%
```

Platform Used

- VS code terminal