PROGRAMMING FUNDAMENTALS
CT-175
SEMESTER PROJECT:
TYPING TUTOR

TEAM MEMBERS
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CONTENTS:

MEMBERS CONTRIBUTION

MOST OF THE WORK HAS BEEN DONE AND COMPILED BY THE TEAM .THESE ARE THE TASKS THAT ARE BRING OFF BY THE INDIVIDUAL MEMBERS:

Qurat-ul-Ain Akhter (CTAI-002):

- IMPLEMENTED TIME DURATION LOGIC
- IMPLEMENTED TYPING SPEED LOGIC

Hajra Rao (CTAI-003):

- MADE DICTIONARY
- IMPLEMENTED SPELLING ERROR LOGIC

Syeda Fizza Masroor (CTAI-020):

- IMPLEMENTED TYPING ACCURACY LOGIC
- IMPLEMENTED START TIME AND END TIME LOGIC

PROBLEM STATEMENT

HERE WE PRESENTED A TYPING TUTOR PROJECT IN C TO MEASURE USERS' TYPING SPEED, THEIR ACCURACY WHILE TYPING. IT INCLUDES THE STARTING TIME, AND TIME DURATION USER TOOK WHILE TYPING IT ALSO INCLUDES SKILLS LIKE TROUBLESHOOTING WHENEVER THE USER MAKES ANY SPELLING ERROR WHILE TYPING .

PROJECT DESCRIPTION

MAKING A DICTIONARY

WE HAVE MADE A DICTIONARY OF APPROX 1000 WORDS WHICH WILL IDENTIFY ANY KIND OF A MISSPELLED WORDS OR WORDS WHICH ARE NOT INCLUDED IN OUR DICTIONARY .

MEASURING TYPING SPEED

UNDER THIS OBJECTIVE THE USER WILL BE ABLE TO MEASURE HIS TYPING SPEED IN WORDS PER MINUTE .

TIME-DURATION

IN THIS CONCERN THE USER WILL BE ABLE TO ACKNOWLEDGE HIS TOTAL TIME DURATION HE TOOK WHILE TYPING IT WILL ALSO INCLUDE THE START TIME AND THE END TIME OF THE TYPING PROCESS .

ACCURACY

IT EMBODIES THE CERTAINITY WITH WHICH THE USER HAS WRITTEN THE TEXT .

COMPONENTS OF OUR PROJECT

A QUICK INTRODUCTION TO IMPLEMENTED FUNTIONS IN OUR PROGRAM :

In our program we are going to use three funtions named as **Write** , **Timer** and **Dictionary .** In write funtion we are taking input of a paragraph and in timer function we are calculating the start time, end time, time duration and typing speed . In dictionary function we are going to implement the logic that how to identify a misspelled word or an incorrect word in the text lines and accuracy of typing.

1 . WRITE () FUNCTION

In this function we are going to take user input of a paargraph .This function has been called from Timer function .

```
int write(){
    char str[1000];
    printf("Press enter key to stop time:\n");
    int len,words;
    printf("WRITE YOUR PARAGRAPH:\n");
    printf("-----------------------------------------------------------------------\n");
    fflush(stdin);
    gets(str);
    len=strlen(str);
    if(len>1000){
        printf("Too much long string Entered!");
        exit(0);

    }
    printf("-----------------------------------------------------------------------\n");
    words=dictionary(str);
    return words;
}
```

2 . DICTIONARY () FUNCTION:

Under this functionality we have used a dictionary of 400,000 words in our program to get the user's typing error . The dictionary function is being called in write function to start its execution just after the paragraph has been written. The logic in dictionary function is that we will compare the user's input string with the words of our dictionary .First we are going to split the user's string by space and then we compare it character by character with the dictionary words . For the comparison we have used two for loops and one while loop , the for loop within the while is going to match the words of our dictionary character by character with each character of our first word that's why we have used a two dimensional array of our user input string and when we are done comparing all the words from our dictionary the rows of our user input array will increment by one and the index will move to the next word. The accuracy has also been calculated in the dictionary function . Below are the snapshots of our dictionary program.

SPLITING OF USER'S STRING

```
char temp[200][20];
int tempsize=0;
int lenght[200];
int i=0,j=0,stop=0,z=0;


for(i=0 ; i < 20 ; i++)
{
    tempsize++;
    for( j ; j < 1000 ; j++)
    {

        if(str[j]  == ' '){
        j++;
        lenght[i]=z;
        z=0;
        break;
        }

        if(str[j] == '\0'){
            lenght[i]=z;
            stop=1;
            break;
        }

        temp[i][z]= str[j];
        z++;
    }

    if(stop==1)
    break;
```

READING FROM DICTIONARY FILE

```
FILE *fp ;
int c=0 ;
int count=0;
char s[1000];
float mistake_no=0;
int size=0, rows=0;
int x,y,w=0;
i=0;
stop=0;
char mistake[200][20];

for(rows =0 ; rows < tempsize ;  rows ++){

    fp = fopen ( "dictionary400000.txt", "r" );
    if ( fp == NULL )
    {
        puts ( "Cannot open file" ) ;
        return ;
    }
```

COMPARING DICTIONARY FILE WITH USER STRINGS

```
    stop=0;

    while( fgets( s , sizeof(s) , fp)  != NULL ){

        count =0;

        for(j=0 ; j < lenght[rows] ; j++) {

            if( tolower(s[j] ) == tolower(temp[rows][j] )){


                count++;
                if( count == lenght[rows])
                {
                    c++;
                    stop=1;
                }
                if(stop==1)
                break;
            }

            if(stop==1)
            break;
        }

        if(stop==1)
        break;
    }

    if(stop == 0 ){
        mistake_no++;
        for(y=0 ; y < lenght[rows] ; y++){
            mistake[w][y]=temp[rows][y];
        }
        w++;
    }
```

2.1 : ACCURACY

```
float accuracy ;
accuracy = mistake_no / tempsize;
accuracy = accuracy * 100.00;
accuracy = 100.00 - accuracy;
printf("\nAccuracy is %.2f percent \n\n" , accuracy);
```

3 . TIMER () FUNCTION:

In this function we have started the time using a built-in function in time.h library which will get the start time and end time and also ctime (built-in function) to detect the current time . Now for the time duration we will take difference between start time and end time using a (built-in difftime function) and atlast we calculate the typing speed through a formula . we have called **Write function in Timer** function so that whenever a user starts typing the clock will start.

```
void timer(){
    time_t start,end;
    char *ptr,*ptr2;
    int words;
    float t,speed;

    start=time(NULL);
    printf("Your time starts now!\n");
    ptr=ctime(&start);
    printf("You started at: %s\n",ptr);
    words=write();
    end=time(NULL);

    ptr2=ctime(&end);
    printf("You stopped at: %s\n",ptr2);
    t=difftime(end,start);
    printf("You have taken %.2f seconds to write this paragraph\n",t);
    t=t/60;
    speed=(float)words/t;
    printf("Your average typing speed is %.2f words per minute\n",speed);


}
```

SOURCE CODE OF PROGRAM

```c
#include<stdio.h>
#include<stdlib.h>
#include<string.h>
#include<time.h>
#include<ctype.h>
#include<conio.h>
int dictionary(char str[]);
int write();
void timer();
int main(){

    printf("================================WELCOME TO OUR PROGRAM==================================\n\n");
    printf("**************************************TYPING TUTOR*********************************************\n\n");
    printf("--------------------------------LET'S HAVE FUN WITH TYPING--------------------------------\n\n");


    printf("Do you Want to check your typing errors?\nDo you want to check your typing accuracy?\nDo you want to check your Typing speed?\nif yes!It is the right platform for you check your typing\n");


    printf("\nPress any key to start time:\n\n");
    getch();
    timer();
}
int write(){
    char str[1000];
    printf("Press enter key to stop time:\n");
    int len,words;
    printf("WRITE YOUR PARAGRAPH:\n");
    printf("------------------------------------------------------------------------\n");
    fflush(stdin);
    gets(str);
    len=strlen(str);
    if(len>1000){
        printf("Too much long string Entered!");
        exit(0);

    }
    printf("------------------------------------------------------------------------\n");
    words=dictionary(str);
    return words;
}
```

```c
void timer(){
    time_t start,end;
    char *ptr,*ptr2;
    int words;
    float t,speed;

    start=time(NULL);
    printf("Your time starts now!\n");
    ptr=ctime(&start);
    printf("You started at: %s\n",ptr);
    words=write();
    end=time(NULL);

    ptr2=ctime(&end);
    printf("You stopped at: %s\n",ptr2);
    t=difftime(end,start);
    printf("You have taken %.2f seconds to write this paragraph\n",t);
    t=t/60;
    speed=(float)words/t;
    printf("Your average typing speed is %.2f words per minute\n",speed);


}
int dictionary(char str[]){
    char temp[200][20];
    int tempsize=0;
    int lenght[200];
    int i=0,j=0,stop=0,z=0;


    for(i=0 ; i < 20 ; i++)
    {
        tempsize++;
        for( j ; j < 1000 ; j++)
        {

            if(str[j]  == ' '){
            j++;
            lenght[i]=z;
            z=0;
            break;
            }

            if(str[j] == '\0'){
                lenght[i]=z;
                stop=1;
                break;
            }
            stop=1;
            break;
        }

        temp[i][z]= str[j];
        z++;
    }

    if(stop==1)
    break;
}
FILE *fp ;
int c=0 ;
int count=0;
char s[1000];
float mistake_no=0;
int size=0, rows=0;
int x,y,w=0;
i=0;
stop=0;
char mistake[200][20];

for(rows =0 ; rows < tempsize ;  rows ++){

    fp = fopen ( "dictionary400000.txt", "r" );
    if ( fp == NULL )
    {
        puts ( "Cannot open file" ) ;
        exit(0);
    }

    stop=0;

    while( fgets( s , sizeof(s) , fp)  != NULL ){

        count =0;

        for(j=0 ; j < lenght[rows] ; j++) {

            if( tolower(s[j] ) == tolower(temp[rows][j] )){


                count++;
                if( count == lenght[rows])
                {
                    c++;
                    stop=1;
                }
```

```
                }
                if(stop==1)
                break;
            }

            if(stop==1)
            break;
        }

        if(stop==1)
        break;
    }

    if(stop == 0 ){
        mistake_no++;
        for(y=0 ; y < lengh     s] ; y++){
            mistake[w][y]=temp[rows][y];
        }
        w++;
    }

}


printf("\nMisspelled words are \n" );
if(mistake_no > 0)
for(i=0 ; i < w ; i++){
    if(mistake[i] != NULL)
    printf(" - %s \n", mistake[i]);
}
else{
    printf("none\n");
}
float accuracy ;
accuracy = mistake_no / tempsize;
accuracy = accuracy * 100.00;
accuracy = 100.00 - accuracy;
printf("\nAccuracy is %.2f percent \n\n" , accuracy);


return tempsize;



fclose(fp);

}
```

PROGRAM OUTPUT

```
==================================WELCOME TO OUR PROGRAM==================================

**************************************TYPING TUTOR**************************************

--------------------------------LET'S HAVE FUN WITH TYPING--------------------------------

Do you Want to check your typing errors?
Do you want to check your typing accuracy?
Do you want to check your Typing speed?
if yes!It is the right platform for you check your typing

Press any key to start time:

Your time starts now!
You started at: Fri Jan 20 01:11:12 2023

Press enter key to stop time:
WRITE YOUR PARAGRAPH:
------------------------------------------------------------------
energy makes things happen withou energy life would not exist and nothing would ever happen
------------------------------------------------------------------

Misspelled words are
none

Accuracy is 100.00 percent

You stopped at: Fri Jan 20 01:11:44 2023

You have taken 32.00 seconds to write this paragraph
Your average typing speed is 28.12 words per minute
```

THANK YOU