Computer Science Project

TYPING SPEED CALCULATOR

Name: Tarun Subramanian
Class: 12 ‘A’
School: Bala Vidya Mandir Sr Sec School, Adyar, Chennai

Acknowledgement

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Contents

Introduction

The project consists of a menu driven program to perform various operations such as:

- To start the timer.
- Display the highscores of all users.
- Display a tutorial

The program is done using data file handling with separate functions to perform each task.

- File handling
- Searching and sorting
- Time.h functions
- Randomize functions
- Process.h functions

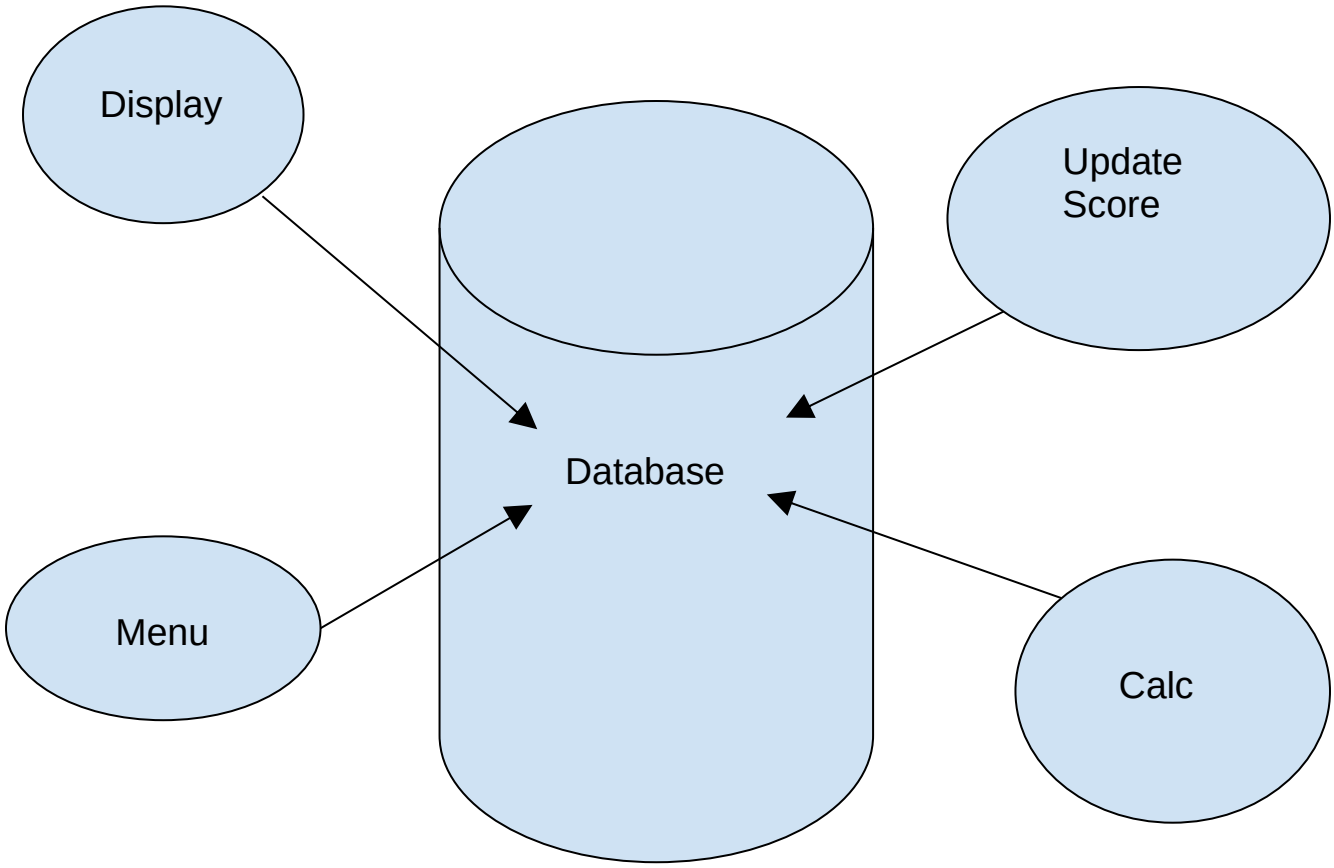
System Information

Operating system : Windows 7
RAM : 4 GB
System type : 64 bit
Processor : Intel® Core™ i3-3220 Processor (3M Cache, 3.30 GHz)

Applications

- **Turbo C 3**
- **DOSBox 0.74, DOS environment emulator**

Data Flow Diagram



Source Code

```
#include<time.h>
#include<iostream.h>
#include<conio.h>
#include<stdio.h>
#include<process.h>
#include<stdlib.h>
#include<string.h>
#include<fstream.h>

int i;
class acc
{
        public:
        char name[15];
        int score;
}x;

void start();
void hs();
void help();
void about();

void line1(char*);
void line2(char*);
void line3(char*);
void line4(char*);
void line5(char*);

void main()
{
        int flag=1;
        while(flag)
```

```
{
        clrscr();
        cout<<"\n\t\t  ********************************************"
            <<"\n\t\t  *         Typing Speed Calculator         *"
           <<"\n\t\t  ********************************************"
           <<"\n\n"
           <<"\n\t1.play"
           <<"\n\t2.Highscores"
           <<"\n\t3.Help"
           <<"\n\t4.About"
           <<"\n\t5.Exit";

        int ch;
        cout<<"\n\n\tEnter your choice!\n\n";
        cin>>ch;
        switch(ch)
        {
                case 1: clrscr();
                        start();
                        break;
                case 2: clrscr();
                        hs();
                        break;
                case 3: clrscr();
                        help();
                        break;
                case 4: clrscr();
                        about();
                        break;
                case 5: exit(0);
                        break;
                default: cout<<"\nEnter a proper input!\nPress any key to
continue!.";
                        getch();
        }
```

```
        }
}

void start()
{
        clrscr();
        char entered_text[50],txt[50];
        randomize();
        time_t prev,now;

        int num;
        num=random(5)+1;
        cout<<"\nType this:";
        switch(num)
        {
                case 1: line1(txt);
                        cout<<txt;
                        break;
                case 2: line2(txt);
                        cout<<txt;
                        break;
                case 3: line3(txt);
                        cout<<txt;
                         break;
                case 4: line4(txt);
                        cout<<txt;
                         break;
                case 5: line5(txt);
                        cout<<txt;
                        break;
        }
        cout<<"\nPress any key to start!";
        getch();
        cout<<"\nGO!\n\n";
```

```
prev=time(0);

gets(entered_text);

now=time(0);
if(strcmp(entered_text,txt)==0)
{
        cout<<"\nYour time:";
        time_t tfinal=now-prev;
        cout<<tfinal<<"s";

        cout<<"\nPress any key to continue!";
        getch();



        acc temp;
        int flag=1;
        char name[15];
        cout<<"\nEnter name:";
        gets(name);
        ifstream filin("saves.dat",ios::in|ios::binary);
        while(filin.read((char *)&temp,sizeof(temp)))
        {
                if(strcmp(temp.name,name)==0)
                        flag=0;
                else
                        flag=1;
        }

        filin.close();
        strcpy(temp.name,name);
        temp.score=tfinal;

        if(flag)
```

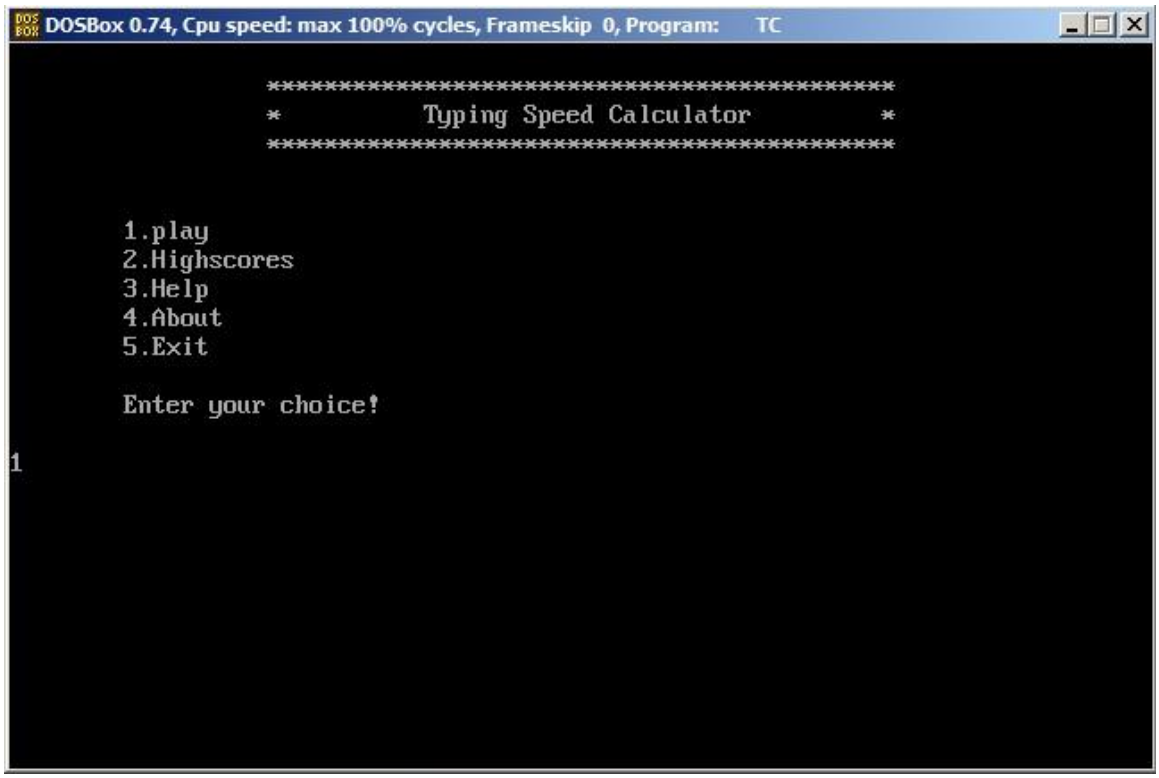
```
		{
			ofstream file("saves.dat",ios::app|ios::binary);

			file.write((char *)&temp,sizeof(temp));
			cout<<"\nScore saved!.";
			cout<<"\nPress any key to continue!.";
			getch();

			file.close();
		}
		else
		{
			fstream f("saves.dat",ios::in|ios::binary|ios::out);
			//f.seekg(0);
			long pos;
			while(!f.eof())
			{
				pos=f.tellg();
				f.read((char *)&temp,sizeof(temp));
				if(strcmp(temp.name,name)==0)
				{
					if(temp.score>tfinal)
					{
						strcpy(temp.name,name);
						temp.score=tfinal;
						f.seekg(pos);
						f.write((char *)&temp,sizeof(temp));
						cout<<"\nScore updated!.";
						break;
					}
					else
					{
						cout<<"\nYou already have a best score, try
harder!.";
						break;
```

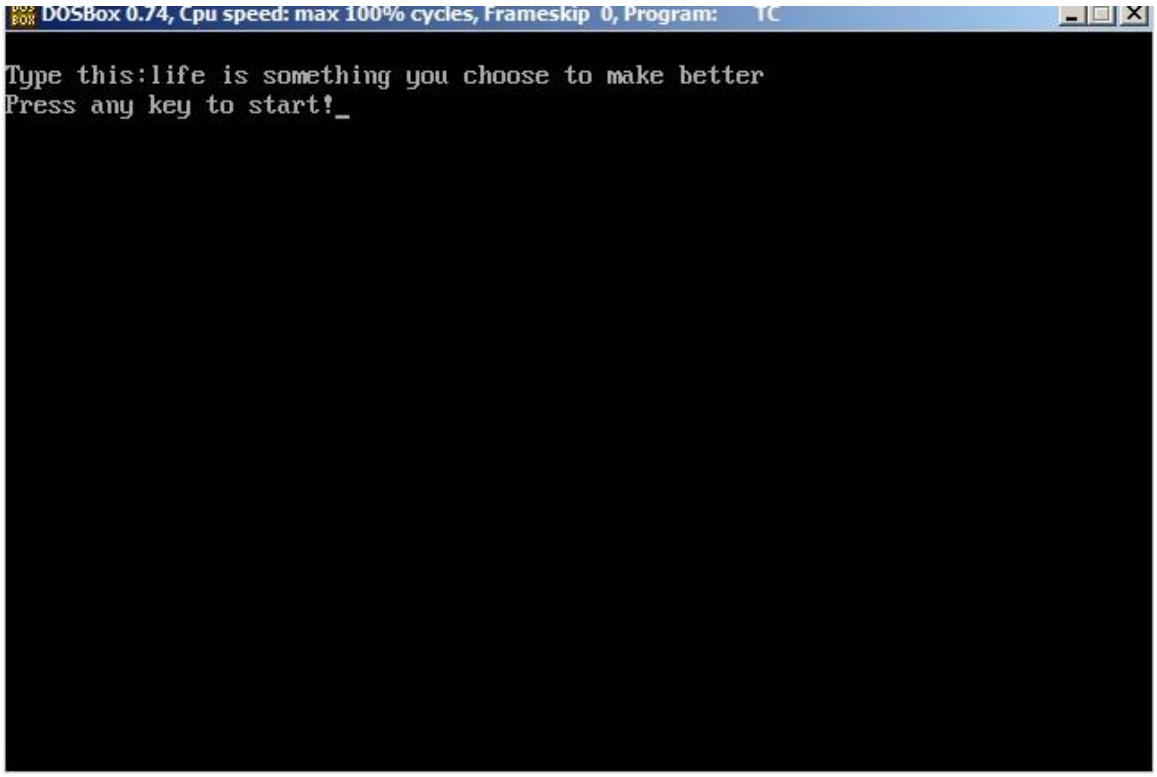
```
                                        }
                                }
                        }


                        f.close();
                        cout<<"\npress any key to continue";
                        getch();
                }

        }
        else
        {
                cout<<"\nWrong input, try again";
                cout<<"\nPress any key to continue!";
                getch();
        }

}

void line1(char* output)
{
        char line[]="I only know one thing, and that is I know nothing";
        strcpy(output,line);
}
void line2(char* output)
{
        char line[]="life is something you choose to make better";
        strcpy(output,line);
}
void line3(char* output)
{
        char line[]="live simply that others may simply live”;
        strcpy(output,line);
}
```

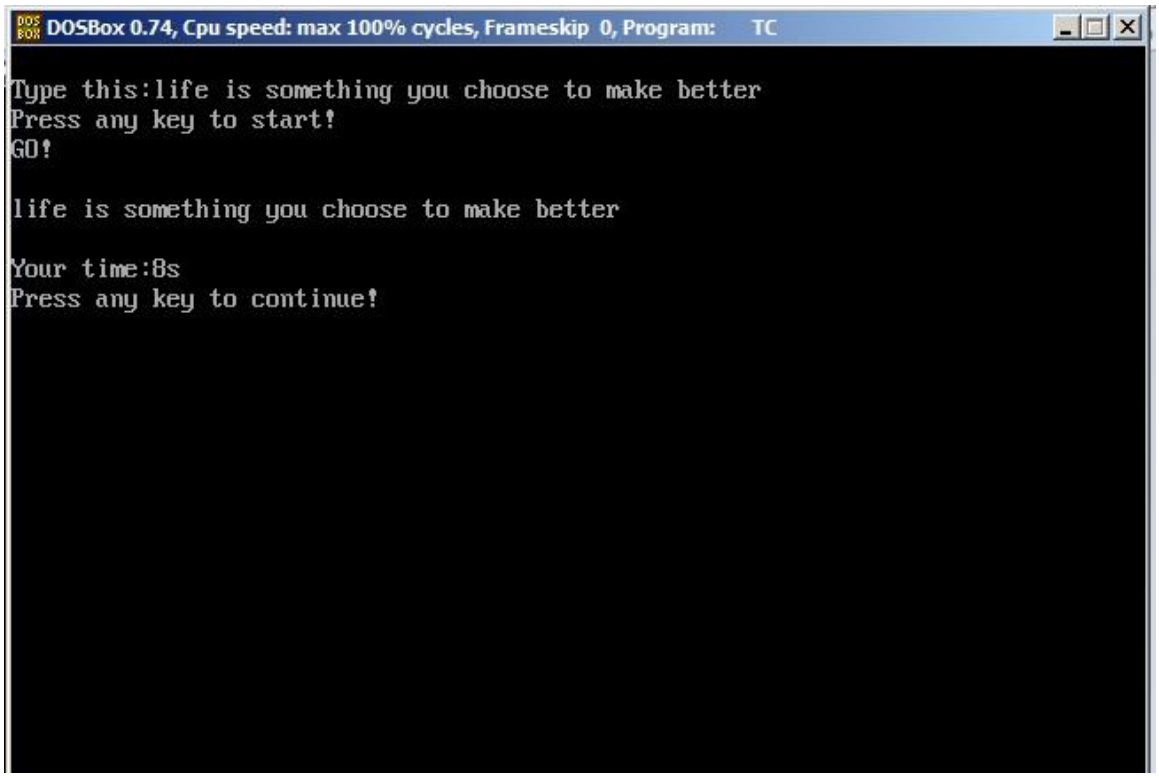
```
void line4(char* output)
{
	char line[]="forgive your enemies but never forget their names";
	strcpy(output,line);
}
void line5(char* output)
{
	char line[]="if at first you don't succeed, try and try harder";
	strcpy(output,line);
}

void help()
{
	clrscr();
	cout<<"\n\t\t  ********************************************"
		<<"\n\t\t  *         Typing Speed Calculator          *"
		<<"\n\t\t  ********************************************"
		<<"\n\n"
		<<"\n * Timer starts when GO! appears."
		<<"\n * Type as fast as you can!.\nPress any key to continue!.";

	getch();
}

void about()
{
	clrscr();
	cout<<"\n\t\t  ********************************************"
		<<"\n\t\t  *         Typing Speed Calculator          *"
		<<"\n\t\t  ********************************************"
		<<"\n\n"
		<<"\n Type Speed Calculator is a utility which aims to improve"
		<<"\n the typing speed of beginners."
		<<"\n By:"
		<<"\n\n\t Avinash Raja"
```

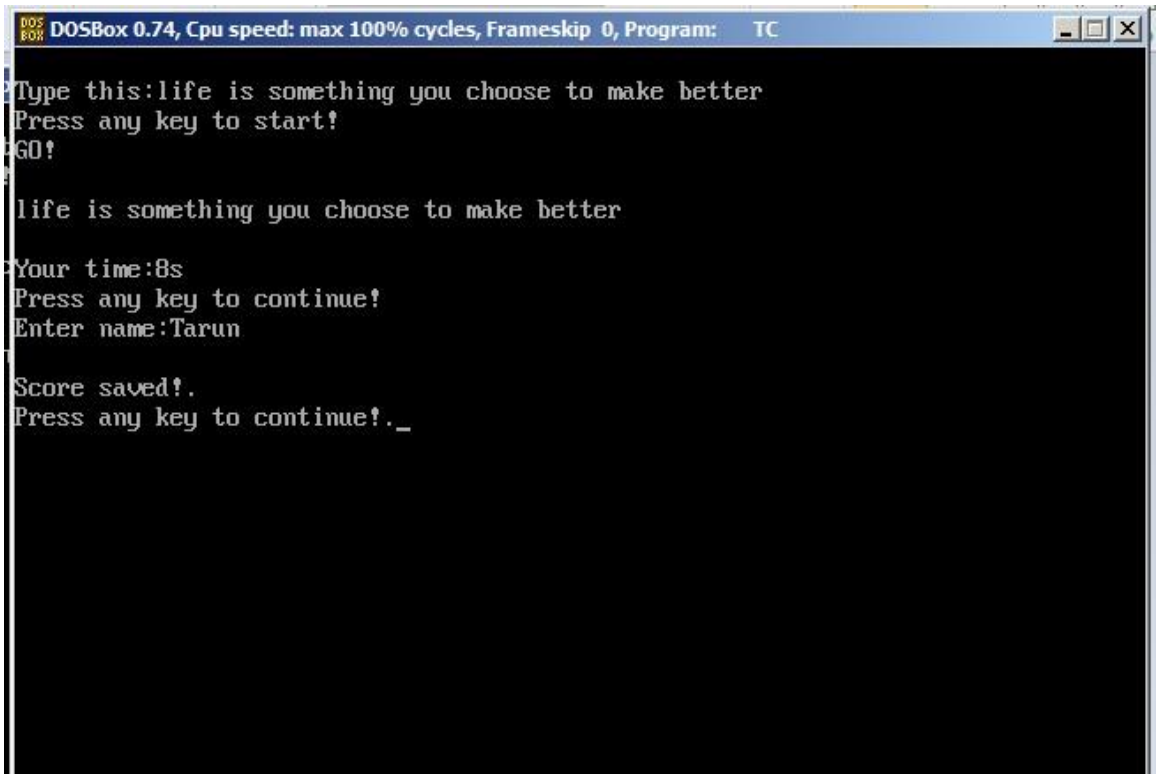
```
                <<"\n\n\t P.S.S.Abishek"
                <<"\n\n\t Tarun Subramanian\n Press any key to continue!.";
        getch();
}

void hs()
{
        acc temp;
        ifstream filin("saves.dat",ios::in|ios::binary);

        cout<<"\n                       Highscores"

<<"\n_____________________________________________________________________
_"
              <<"\n\t\tName\t\t\tTime"<<endl
              <<"---------------------------------------------------------------"<<endl;
        while(filin.read((char *)&temp,sizeof(temp)))
        {
              cout<<"\t\t"<<temp.name<<"\t\t\t"<<temp.score
                   <<"\n-----------------------------------------------------"<<endl;
        }
        cout<<"\n_____________________________________________________________
_________  ";
        getch();

        filin.close();
}
```

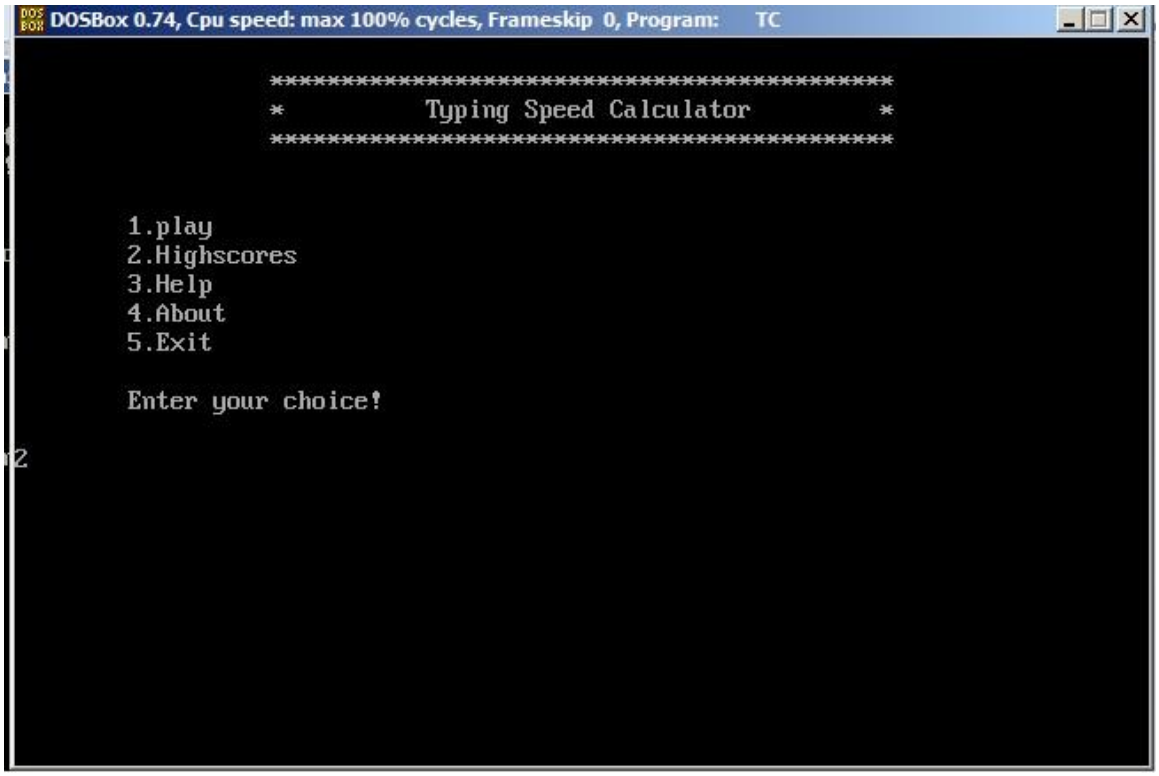
Output :Screenshots

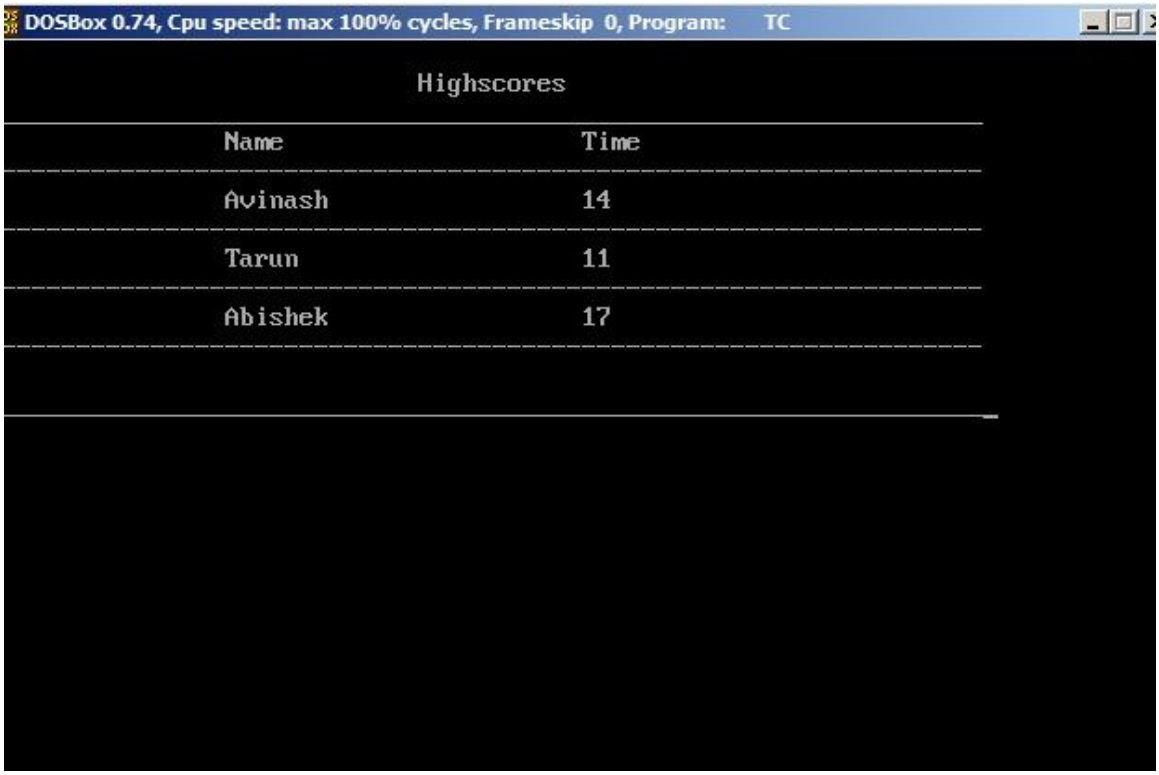


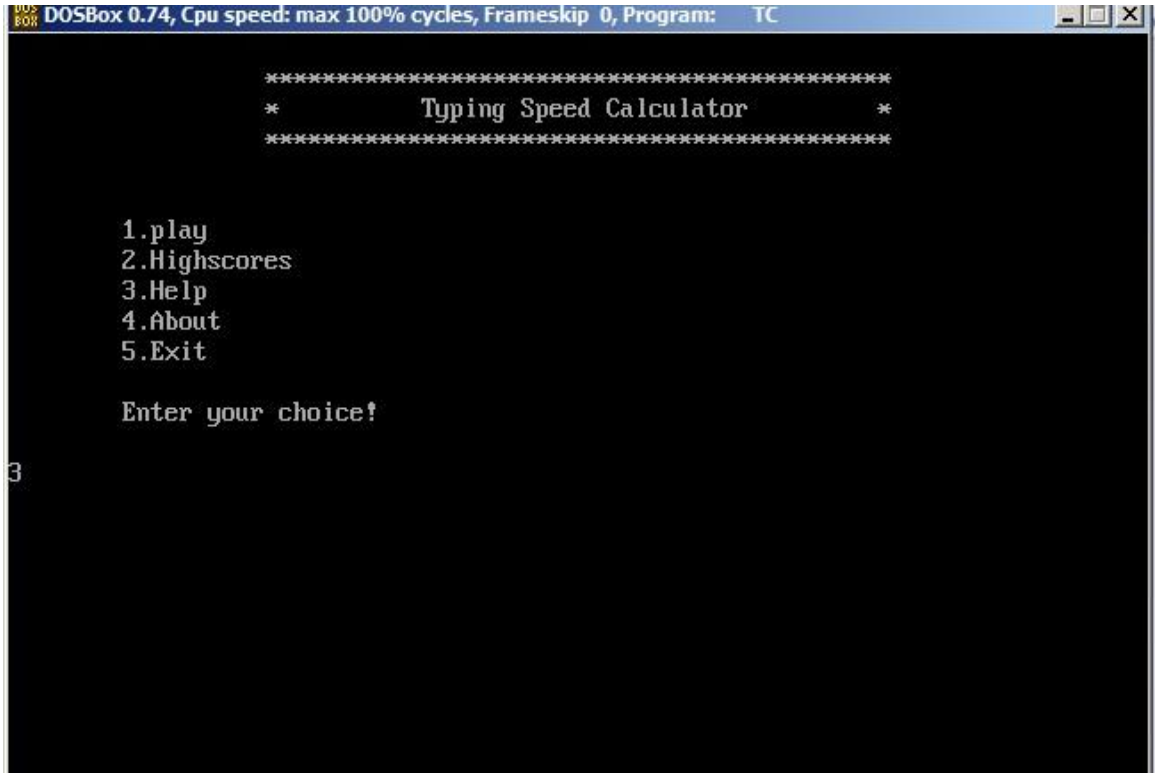


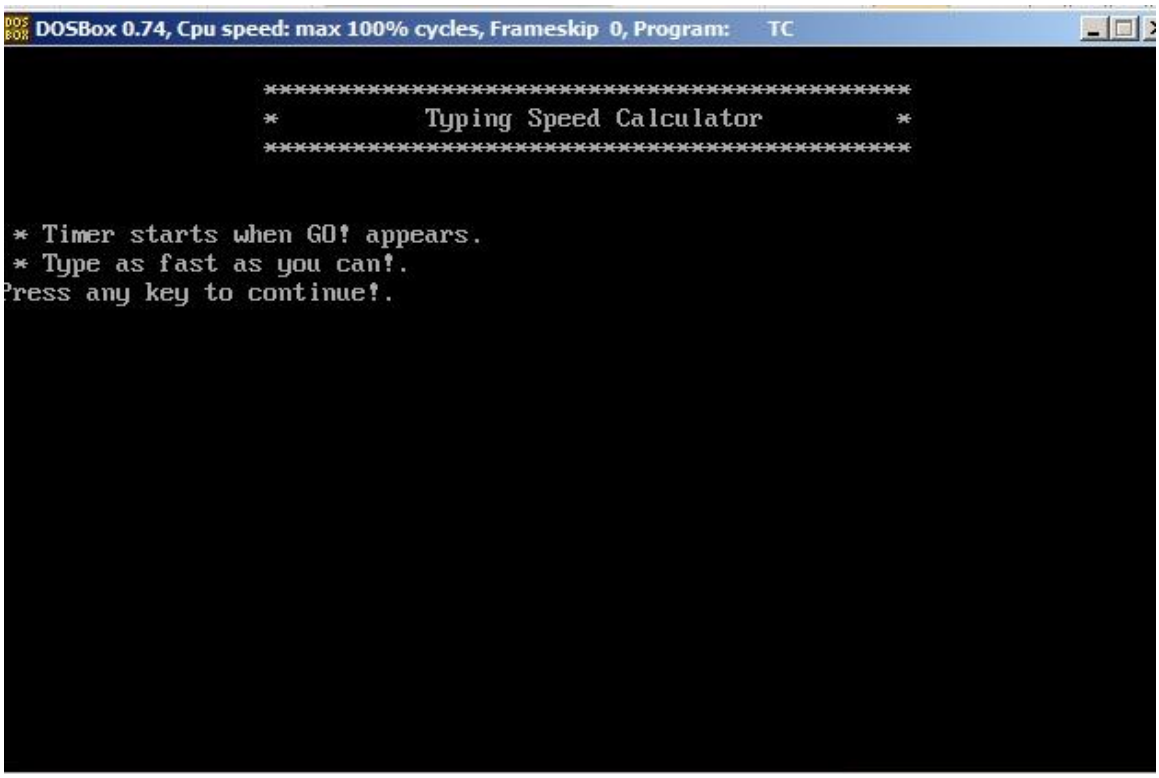

DOSBox 0.74, Cpu speed: max 100% cycles, Frameskip 0, Program: TC
Type this:life is something you choose to make better
Press any key to start!
GO!
life is something you choose to make better
Your time:8s
Press any key to continue!

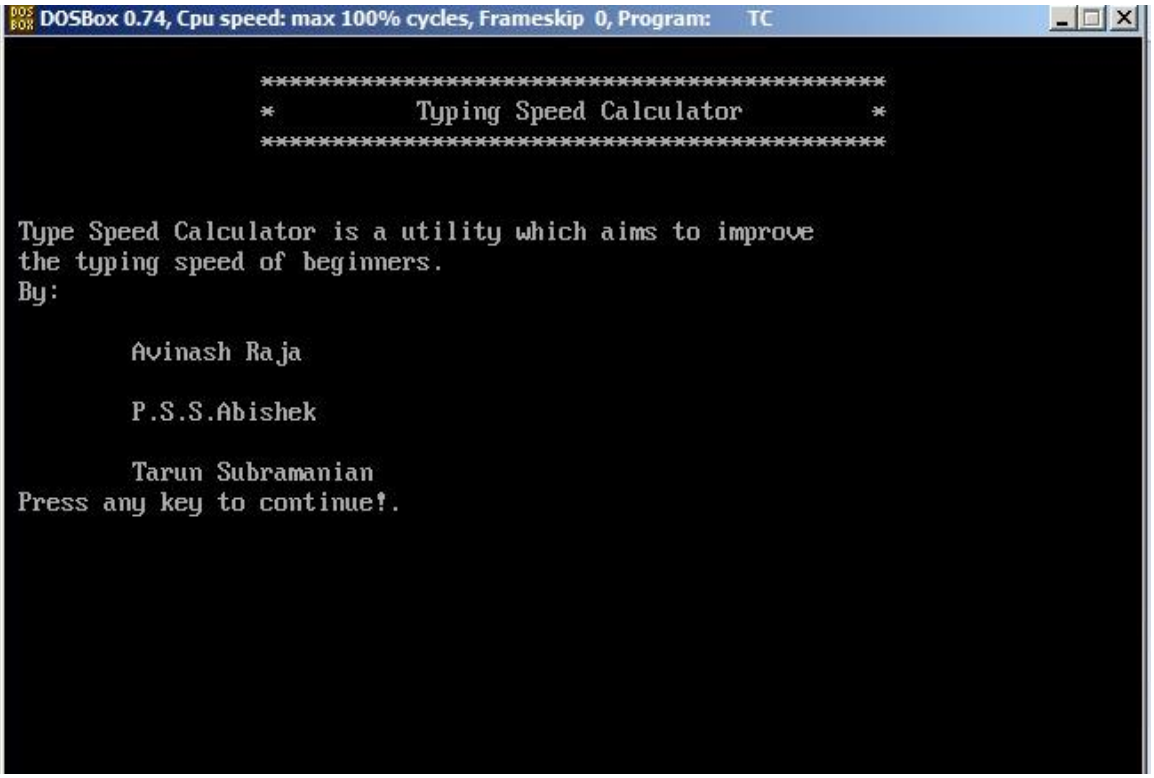

DOSBox 0.74, Cpu speed: max 100% cycles, Frameskip 0, Program: TC
Type this:life is something you choose to make better
Press any key to start!
GO!
life is something you choose to make better
Your time:8s
Press any key to continue!
Enter name:Tarun
Score saved!.
Press any key to continue!._


DOSBox 0.74, Cpu speed: max 100% cycles, Frameskip 0, Program: TC
Typing Speed Calculator
1.play
2.Highscores
3.Help
4.About
5.Exit
Enter your choice!
2


DOSBox 0.74, Cpu speed: max 100% cycles, Frameskip 0, Program: TC
Highscores
Name Time
Avinash 14
Tarun 11
Abishek 17


DOSBox 0.74, Cpu speed: max 100% cycles, Frameskip 0, Program: TC
Typing Speed Calculator
1.play
2.Highscores
3.Help
4.About
5.Exit
Enter your choice!
3


DOSBox 0.74, Cpu speed: max 100% cycles, Frameskip 0, Program: TC
Typing Speed Calculator
* Timer starts when GO! appears.
* Type as fast as you can!.
Press any key to continue!.


DOSBox 0.74, Cpu speed: max 100% cycles, Frameskip 0, Program: TC
Typing Speed Calculator
Type Speed Calculator is a utility which aims to improve
the typing speed of beginners.
By:
Avinash Raja
P.S.S.Abishek
Tarun Subramanian
Press any key to continue!.

Bibliography

- **http://stackoverflow.com**
- **http://www.cplusplus.com**
- **https://en.wikipedia.org**
- **Computer Science with C++, by Sumita Arora**