13016235: C Programming

First Semester, 2017

Project Proposal

1. Project developer

Student ID	Name
60090021	Nipat Liampisan

2. Project title

Typing Practice Program

3. Project description and requirements

Project description:

The program's goal is for the user to improve his or her English typing skills. In this program, you can do this in one of two ways.

Example:

Welcome to the typing game.

> Check your typing speed(WPM)

Type Type Game

Quit

The first way is typing up a text file. The program already has a database for text files. A text file will be chosen at random from this database, and the user will be given 1 minute to type the file. The typing cursor will only move when the correct character is pressed. After time has elapsed the program will print out the user's words per minute.

Example:

Test your Typing Speed.

How many words can you type in 60 seconds.

Are you ready? 3....2....1….

…….File that needs to be typed……

Congratulations.

You typed 0 words in one minute.

Press enter key to return to main menu.

The second way is by playing a matrix like typing game. In this game, the game board is a 5*5 array filled with binary numbers. Different alphabets will pop up from the screen and the goal is to type the characters as they show up. You gain points by typing any character that appears on the screen. The characters disappear as you type them.

Example.

aq01o

p0010

110xi

1j110

00011

Congratulations.

Your score was 0.

Press enter key to return to main menu.

Project requirements:

For the main menu, the program will need a way for the user to interact with the menu. This will be done using the up and down keys. The up and down keys are used to change the choice, and the enter key will be used to run the chosen function. A switch case will be needed for this.

The subprogram that test the words per minute, will need to open the file and read characters from it. It must take the user's keyboard's input and compare it with the characters in the file. In the meantime, it must keep track of the time elapsed and amount of words typed.

The subprogram that is the matrix game, will need to initially print out the game board. It must have a way of dynamically allocating data and removing data. The data structure that will be used is a linked list. The characters will be inserted into the linked list, and when the user types a character, the program will traverse the list looking for a match, and remove it. A node of the linked list will contain the character, x and y coordinates and the next node. The x and y coordinates will be used to print out the character in the screen. The program will only increase the score if a typed character is in the linked list.

Non-standard C functions:

Functions in windows.h

```
// parameters: color
// return: N/A
// Behavior: changes the text color that is printed to console
void changeTextColor(int color) {
	HANDLE hConsole = GetStdHandle(STD_OUTPUT_HANDLE);
	SetConsoleTextAttribute(hConsole, color);
}

// parameters: x, and y coordinates
// return: N/A
// Behavior: changes console cursor to specified x and y coord
void gotoxy(int x, int y)
{
	COORD coord;
	coord.X = x;
	coord.Y = y;
	SetConsoleCursorPosition(
		GetStdHandle(STD_OUTPUT_HANDLE),
		coord
	);
}

// clears the console
system("cls");
```

Functions in conio.h

```
// returns True if a key is pressed
_kbhit();

// gets a character from buffer
_getch();
```

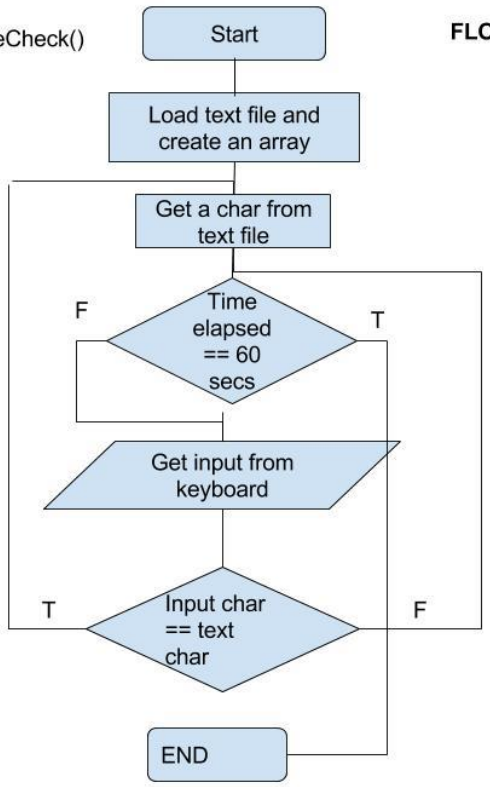
Functions in time.h

```
// pauses the program for a period of time specified in milliseconds
Sleep(milliseconds);

// returns the number of clock ticks elapsed
clock();
```

FLOW CHARTS

typeCheck()



removeNode (char c)