Bopit

LAB 6

SECTION C

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Problem

The purpose of this lab is to code a bop-it game from the ground up without any codes being provided for us.

Analysis

At first look this program seemed to be easy but after getting started I realized that it actually was difficult. I had to count the rounds played, whether the correct button was pressed and have a timer. I actually also needed to keep track of two times rather than one.

Design

So at first I tried to put most of the code into a While(TRUE) loop with a function that shows true or false. I used rand() % 4 to get random numbers between 0-3 and then created a switch case which I used these numbers in. but I realized that I was started to get confused by writing the code this way. I tried a different approach to it.

1. I created prototypes I needed such as randNum() and roundTime.
2. I then created a int main function in which I put everything into.
3. I created int variables for count, bopIt, and start.
4. I created a while(TRUE) loop where it scanned the button being pressed and ran the game only if the correct button was pressed otherwise break
5. I created another while loop which ran only if the circle button was pressed and it scanned the buttons pressed and assigned it to the switch case in the int RandNum() function. This loop held a bunch of nested loops which checked if the correct button was being pressed
6. The int RandNum() function held the primt statements and the roundTime

Testing

At first the program would not run when I had it press the circle button. It was stuck in that phase. I had to create a else if statement that would break it. I also wasn’t able to figure out time correctly so I ended up putting it with each of the cases so it would use the previous time and subtract 100 from it every time a button was pressed.

Comments

This lab was actually difficult but with helps of TAs and peers I was able to learn and write the code for myself. It was interesting to see how the program wouldn’t run properly if functions were not called properly or lines were not in the right function or loops. I definitely need more practice writing code.

1. I used a rand() function with modulo 4 to have only 4 numbers to correlate with the number of buttons that can be pressed.
2. I kept track of the time, the buttons being pressed and the count of the rounds being played.
3. I used the –b in the controller and the b1 b2 b3 and b4 buttons in a while loop which only scanned those buttons.

Source Code

```
/*-----------------------------------------------------------------------------
-                                          SE 185 Lab 06
-             Developed for 185-Rursch by T.Tran and K.Wang
-      Name:
-      Section:
-      NetID:
-      Date:
-----------------------------------------------------------------------------*/

/*-----------------------------------------------------------------------------
-                                 Includes
-----------------------------------------------------------------------------*/
#include <stdio.h>
#include <time.h>
#include <stdlib.h>


/*-----------------------------------------------------------------------------
-                                  Defines
-----------------------------------------------------------------------------*/
#define TRUE 1
#define FALSE 0


/*-----------------------------------------------------------------------------
-                                 Prototypes
-----------------------------------------------------------------------------*/

void buttonPressed(int b1);
int randomNum();
int roundTime = 2500;
/*-----------------------------------------------------------------------------
-                                              Implementation
-----------------------------------------------------------------------------*/
int main()
{
 int b1, b2, b3, b4, t, user;

 int count = 0;
 int bopIt = 0;
 int start;
 srand(time(NULL));

      printf("Bop-It game!\n");
      printf("Press circle to start the game\n");

             while(TRUE){
                    //scan circle button and only run game if circle button is
pressed
             scanf("%d, %d, %d, %d, %d", &t, &b1, &b2, &b3, &b4);
                    if (b2 == 1 && b1 == 0 && b3 == 0 && b4 == 0){
                          bopIt = 1;
                    }
```

```
			else if (bopIt == 1 && b2 == 0 && b1 == 0 && b3 == 0 && b4 == 0){
				break;
			}
		}
		while(bopIt == 1){ //scans and checks to see if correct buttons are
being pressed within the timeframe in this while loop
			scanf("%d, %d, %d, %d, %d", &t, &b1, &b2, &b3, &b4);
			if(b2 == 0 && b1 == 0 && b3 == 0 && b4 == 0){
				int button = randomNum();
				start = t;
				if (button == 1) {
					while(1){
						scanf("%d, %d, %d, %d, %d", &t, &b1, &b2,
&b3, &b4);
						if(b1 == 1){
							count++;
							break;
						}
						else if (b2 == 1 || b3 == 1 || b4 == 1){
							printf("Wrong Answer\n");
							bopIt = 0;
							break;
						}
						else if (t - start > roundTime){
							printf("Out of time, restart to try
again!");
							bopIt = 0;
							break;
						}
						else {
							if(roundTime == 0){
							printf("Out of time, restart to try
again!");
							bopIt = 0;
							break;
					}
					}
				}
				}
				else if (button == 2) {
					while(1){
						scanf("%d, %d, %d, %d, %d", &t, &b1, &b2,
&b3, &b4);
						if(b2 == 1){
							count++;
							break;
						}
						else if (b1 == 1 || b3 == 1 || b4 == 1){
							printf("Wrong Answer\n");
							bopIt = 0;
							break;
						}
						else if (t - start > roundTime){
							printf("Out of time, restart to try
again!");
```

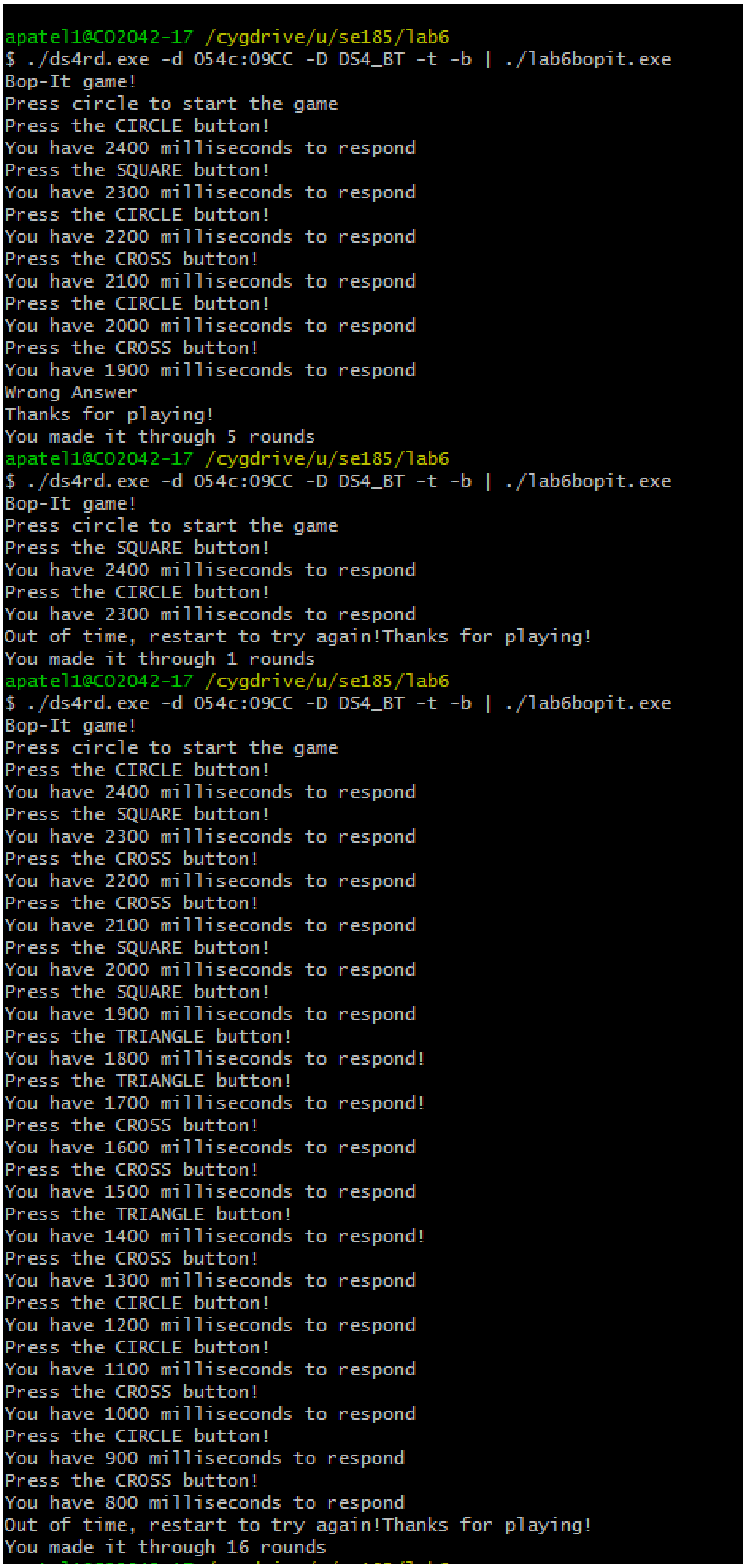
```
                            bopIt = 0;
                            break;
                        }
                        else {
                            if(roundTime == 0){
                            printf("Out of time, restart to try
again!");
                            bopIt = 0;
                            break;
                    }
                    }
                }
                }
                else if (button == 3){
                    while(1){
                        scanf("%d, %d, %d, %d, %d", &t, &b1, &b2,
&b3, &b4);
                        if(b3 == 1){
                            count++;
                            break;
                        }
                        else if (b2 == 1 || b1 == 1 || b4 == 1){
                            printf("Wrong Answer\n");
                            bopIt = 0;
                            break;
                        }
                        else if (t - start > roundTime){
                            printf("Out of time, restart to try
again!");
                            bopIt = 0;
                            break;
                        }
                        else {
                            if(roundTime == 0){
                            printf("Out of time, restart to try
again!");
                            bopIt = 0;
                            break;
                    }
                    }
                }
                }
                else if(button == 4){
                    while(1){
                        scanf("%d, %d, %d, %d, %d", &t, &b1, &b2,
&b3, &b4);
                        if(b4 == 1){
                            count++;
                            break;
                        }
                        else if (b2 == 1 || b3 == 1 || b1 == 1){
                            printf("Wrong Answer\n");
                            bopIt = 0;
                            break;
                        }
                        else if (t - start > roundTime){
                            printf("Out of time, restart to try again!");
                            bopIt = 0;
                            break;
                        }
                        else {
                            if(roundTime == 0){
                            printf("Out of time, restart to try again!");
                            bopIt = 0;
                            break;
                    }
                    }
                }
                }
                else {
                        if(roundTime == 0){
                        printf("Out of time, restart to try again!");
                        bopIt = 0;
                        break;
                    }
            }
        }
        }

        printf("Thanks for playing!\n");
        printf("You made it through %d rounds", count);

    return 0;
}

void buttonPressed(int b2){ //starts the game
    if(b2 == 1){
        exit(1);
    }
}

int randomNum(){
    switch (rand() % 4 + 1){ //assigns random number 1-4 to buttons and every round the time decreases
        case 1:
        roundTime -= 100;
        printf("Press the TRIANGLE button!\n");
        printf("You have %d roundTime to respond!\n", roundTime);
        return 1;
        break;
        case 2:
        roundTime -= 100;
        printf("Press the CIRCLE button!\n");
        printf("You have %d roundTime to respond\n", roundTime);
        return 2;
        break;
        case 3:
        roundTime -= 100;
        printf("Press the CROSS button!\n");
        printf("You have %d roundTime to respond\n", roundTime);
        return 3;
        break;
        case 4:
        roundTime -= 100;
        printf("Press the SQUARE button!\n");
        printf("You have %d roundTime to respond\n", roundTime);
        return 4;
        break;
    }
}
```



```
apatel1@CO2042-17 /cygdrive/u/se185/lab6
$ ./ds4rd.exe -d 054c:09CC -D DS4_BT -t -b | ./lab6bopit.exe
Bop-It game!
Press circle to start the game
Press the CIRCLE button!
You have 2400 milliseconds to respond
Press the SQUARE button!
You have 2300 milliseconds to respond
Press the CIRCLE button!
You have 2200 milliseconds to respond
Press the CROSS button!
You have 2100 milliseconds to respond
Press the CIRCLE button!
You have 2000 milliseconds to respond
Press the CROSS button!
You have 1900 milliseconds to respond
Wrong Answer
Thanks for playing!
You made it through 5 rounds
apatel1@CO2042-17 /cygdrive/u/se185/lab6
$ ./ds4rd.exe -d 054c:09CC -D DS4_BT -t -b | ./lab6bopit.exe
Bop-It game!
Press circle to start the game
Press the SQUARE button!
You have 2400 milliseconds to respond
Press the CIRCLE button!
You have 2300 milliseconds to respond
Out of time, restart to try again!Thanks for playing!
You made it through 1 rounds
apatel1@CO2042-17 /cygdrive/u/se185/lab6
$ ./ds4rd.exe -d 054c:09CC -D DS4_BT -t -b | ./lab6bopit.exe
Bop-It game!
Press circle to start the game
Press the CIRCLE button!
You have 2400 milliseconds to respond
Press the SQUARE button!
You have 2300 milliseconds to respond
Press the CROSS button!
You have 2200 milliseconds to respond
Press the CROSS button!
You have 2100 milliseconds to respond
Press the SQUARE button!
You have 2000 milliseconds to respond
Press the SQUARE button!
You have 1900 milliseconds to respond
Press the TRIANGLE button!
You have 1800 milliseconds to respond!
Press the TRIANGLE button!
You have 1700 milliseconds to respond!
Press the CROSS button!
You have 1600 milliseconds to respond
Press the CROSS button!
You have 1500 milliseconds to respond
Press the TRIANGLE button!
You have 1400 milliseconds to respond!
Press the CROSS button!
You have 1300 milliseconds to respond
Press the CIRCLE button!
You have 1200 milliseconds to respond
Press the CIRCLE button!
You have 1100 milliseconds to respond
Press the CROSS button!
You have 1000 milliseconds to respond
Press the CIRCLE button!
You have 900 milliseconds to respond
Press the CROSS button!
You have 800 milliseconds to respond
Out of time, restart to try again!Thanks for playing!
You made it through 16 rounds
```

Screen Shots

<Number the screenshots and paste here. The point of numbering the screenshots is so that you can refer to them during your discussion in the various parts above. Alternatively, you can include the screenshots in-line with the text above as part of your discussion.>