FINAL YEAR PROJECT

//NAME CMS ID

//Laiba Basit 255374

//Alina Tabish 242920

//Ayesha Mauqeem 244369

//Haris Riaz 178239

//T-REX GAME

//BSCS 8B

#include <stdio.h>

#include <conio.h>

#include <time.h>

#include <windows.h>

/\* GLOBAL VARIBLES\*/

char ch, q;

int flag = 0, k, i, l, t = 2, max;

void ds(int, int);

static int x = 0, scr = 0;

int minute = 0, second = 0, millisecond = 0;

int w;

/\* DELAY FUNCTION \*/

void delay(unsigned int mseconds) // FUNCTION USED TO DELAY THE OUTPUT BY MILLISECONDS

{

clock\_t goal = mseconds + clock();

while (goal > clock());

}

/\*GOTOXY FUNCTION\*/

void gotoxy(int x, int y) // FUNCTION USED TO SET THE COORDINATES

{

COORD coord;

coord.X = x;

coord.Y = y;

w = y;

SetConsoleCursorPosition(GetStdHandle(STD\_OUTPUT\_HANDLE), coord);

}

/\* FUNCTION TO CREATE A TIMER \*/

void printClock()

{

gotoxy(62, 6);

HANDLE colour\_change;

colour\_change = GetStdHandle(STD\_OUTPUT\_HANDLE);

SetConsoleTextAttribute(colour\_change, FOREGROUND\_GREEN | FOREGROUND\_RED | FOREGROUND\_BLUE); //Changing the colour of clock to white

gotoxy(2,2);

printf(" %d:%d:%d\n", minute, second, millisecond); //output the data

// clear output buffer

fflush(stdout);

// update minute, second, millisecond

millisecond++;

if (millisecond == 50) {

second += 1;

millisecond = 0;

}

if (second == 60) {

minute += 1;

second = 0;

millisecond = 0;

}

if (minute == 60) {

minute = 0;

second = 0;

millisecond = 0;

}

}

/\* MENU FUNCTION \*/

void menu(char q) // Menu which is displayed at the start of the game

{

/\* Graphic Symbols used to write "T-REX GAME" \*/

gotoxy(23, 18);

printf("ÛßßÛßßÛ ÛßßßÛ Ûßßßß Û Û Ûßßßß ÛßßßÛ Û Û Ûßßßß \n");

gotoxy(23, 19);

printf(" Û Û Û Û ÛÜ ÜÛ Û Û Û ÛßÜ ÜßÛ Û \n ");

gotoxy(23, 20);

printf(" Û ÛÛßßß Ûßßßß ÜÛÜ Û ÛßßßÛ Û ß Û Ûßßßß \n ");

gotoxy(23, 21);

printf(" Û ßßßß Û Û Û Û Û Û ßÛ Û Û Û Û Û \n");

gotoxy(23, 22);

printf(" Û Û Û ÛÜÜÜÜ Û Û ÛÜÜÜÛ Û Û Û Û ÛÜÜÜÜ \n ");

/\* Menu displyed at the start \*/

gotoxy(45, 25);

if (q == 'y')

{

printf("WELCOME TO THE T-REX GAME \n");

gotoxy(42, 27);

printf("Press Space to Play or X to Exit\n");

}

else // if player presses 'x'

{

printf(" GOODBYE HAVE A NICE DAY!");

return 0;

}

}

/\* SCORE FUNCTION \*/

int top = 0;

void score()

{

HANDLE colour\_change;

colour\_change = GetStdHandle(STD\_OUTPUT\_HANDLE);

SetConsoleTextAttribute(colour\_change, FOREGROUND\_GREEN | FOREGROUND\_RED | FOREGROUND\_BLUE); //Changing the colour of dinosaur to green

system("cls"); // to clear the output console

gotoxy(16, 3);

printf("Press X to Exit, Press Space to Jump");

gotoxy(62, 4);

printf("High Score : %d", max);

gotoxy(62, 2);

printf("SCORE : %d", scr);

}

/\* STARTUP MENU FUNCTION \*/

void startup\_menu()

{

gotoxy(34, 20);

system("cls");

menu(q); // menu function called

while (!\_kbhit()) // while loop runs until user hits any key

{

ds(0, 400); // dinosaur function is called with arguments jump and speed

}

score(); // score function called

gotoxy(1, 25);

for (int x = 0; x < 79; x++)

printf("ß"); // graphic symbol

}

/\* DINOSAUR FUNCTION \*/

int speed = 40;

int jump = 0;

void ds(int jump, int speed) // jump = position of dinosuar, speed = movement speed of dinosaur

{

int p = 0;

HANDLE colour\_change;

colour\_change = GetStdHandle(STD\_OUTPUT\_HANDLE);

SetConsoleTextAttribute(colour\_change, FOREGROUND\_GREEN); //Changing the colour of dinosaur to green

static int a = 1; // using static int so it stays till the end of the program

if (jump == 0) // when the argument is 0

t = 0;

else if (jump == 2) // when the argument is 2

t--;

else t++; // when the argument is something else

/\* Graphics Symbols used to create the DINOSAUR \*/

gotoxy(t, 15 - t);

printf(" ");

gotoxy(t, 16 - t);

printf(" ÜÛßÛÛÛÛÜ ");

if (t > 0 || t < 0)

printf(" ");

gotoxy(0 + t, 17 - t);

printf(" ÛÛÛÛÛÛÛÛ ");

if (t > 0 || t < 0)

printf(" ");

gotoxy(0 + t, 18 - t);

printf(" ÛÛÛÛÛßßß");

if (t > 0 || t < 0)

printf(" ");

gotoxy(t, 19 - t);

printf(" Û ÜÛÛÛÛßßß ");

if (t > 0 || t < 0)

printf(" ");

if (t > 0 || t < 0)

{

gotoxy(0, 20 - t);

printf(" ");

}

gotoxy(t, 20 - t);

printf(" ÛÛÜ ÜÛÛÛÛÛÛÜÜÜ ");

if (t > 0 || t < 0)

printf(" ");

gotoxy(t, 21 - t);

printf(" ßÛÛÛÛÛÛÛÛÛÛÛ ß ");

if (t > 0 || t < 0)

printf(" ");

gotoxy(t, 22 - t);

printf(" ßÛÛÛÛÛÛÛß ");

if (t > 0 || t < 0)

printf(" ");

gotoxy(t, 23 - t);

if (jump == 1 || jump == 2) {

printf(" ÛÛß ßÛ ");

if (t > 0 || t < 0)

printf(" ");

gotoxy(t, 24 - t);

printf(" ÛÜ ÛÜ ");

if (t > 0 || t < 0)

printf(" ");

if (p <= 4 && w <= 20)

gotoxy(t + 8, 25 - t - p);

printf(" ");

p++;

}

else if (a == 1)

{

printf(" ßÛÛß ßßß ");

if (t > 0 || t < 0)

printf(" ");

gotoxy(t, 24 - t);

printf(" ÛÜ ");

if (t != 0)

{

gotoxy(t + 0, 16 - t);

printf(" ");

}

a = 2;

}

else if (a == 2)

{

printf(" ßÛÜ ßÛ ");

if (t > 0 || t < 0)

{

gotoxy(t + 0, 17 - t);

printf(" ");

}

gotoxy(t, 24 - t);

if (t > 0 || t < 0)

{

gotoxy(t + 0, 16 - t);

printf(" ");

}

if (t > 0 || t < 0)

{

gotoxy(15, 16 - t);

printf(" ");

}

printf(" ÛÜ ");

if (t != 0)

{

gotoxy(0, 16 - t);

printf(" ");

}

a = 1;

}

gotoxy(0, 25 - t);

if (jump != 0) {

printf(" ");

}

else

if (speed == 40)

{

colour\_change = GetStdHandle(STD\_OUTPUT\_HANDLE);

SetConsoleTextAttribute(colour\_change, FOREGROUND\_GREEN | FOREGROUND\_RED | FOREGROUND\_BLUE); //Changing the colour of ground to white

/\* Graphics Symbols used to create the GROUND beneath the dinosaur\*/

printf("ßßßßßßßßßßßßßßßßßßßßßßßßßßßßßßßßßßßßßßßßßßßßßßßßßßßßßßßßßßßßßßßßßßßßßßßßßßßßßßß"); // graphic symbols

for (k = 0; k < 25; k++) // loop used to create a border of the game using graphic symbols

{

gotoxy(78, 24 - k);

printf("Û"); // graphics symbol

}

}

delay(speed); // setting the speed of the dinosaur's movement

}

/\* GAME FUNCTION \*/

void game() // Function used to display the gameplay

{

HANDLE colour\_change;

colour\_change = GetStdHandle(STD\_OUTPUT\_HANDLE);

SetConsoleTextAttribute(colour\_change, FOREGROUND\_GREEN | FOREGROUND\_RED | FOREGROUND\_BLUE); // setting the color of the scoreboard to white

if (x == 73)

{

x = 0;

scr++;

gotoxy(70, 2);

printf(" ");

gotoxy(70, 2);

printf("%d", scr); // printing the score when game restarts

if (speed > 20)

speed--;

printClock();

}

if (x == 58 && t < 6)

{

if (scr == 1)

max = scr;

else

if (max<scr)

max = scr;

scr = 0;

speed = 40;

gotoxy(36, 8);

printf("\a Game Over"); // when user loses the game

gotoxy(70, 2);

printf("%d", scr); // printing the score

// resetting the clock

millisecond = 0;

second = 0;

minute = 0;

\_getch();

gotoxy(36, 8);

printf(" ");

if (max >=scr)

{

gotoxy(62, 4);

printf("High Score : %d", max); // printing the highscore

scr = 0;

gotoxy(36, 8);

printf(" ");

scr = 0;

}

}

}

/\* FUNCTIONS FOR DIFFERENT OBSTACLES \*/

void cactus() /\* FUNCTION FOR CREATING A CACTUS\*/

{

game();

HANDLE colour\_change;

colour\_change = GetStdHandle(STD\_OUTPUT\_HANDLE);

SetConsoleTextAttribute(colour\_change, FOREGROUND\_GREEN); //Changing the colour of cactus to green

/\* Creating a CACTUS using graphic symbols\*/

gotoxy(74 - x, 20);

printf(" Û ");

gotoxy(74 - x, 21);

printf("Û Û Û ");

gotoxy(74 - x, 22);

printf("ÛÜÛÜÛ ");

gotoxy(74 - x, 23);

printf(" Û ");

gotoxy(74 - x, 24);

printf(" Û ");

x++;

}

void flower() /\* FUNCTION TO CREATE A FLOWER \*/

{

game();

HANDLE colour\_change;

colour\_change = GetStdHandle(STD\_OUTPUT\_HANDLE);

SetConsoleTextAttribute(colour\_change, FOREGROUND\_RED); // changing the color of flower petals to red

/\* Creating a FLOWER using graphic symbols\*/

gotoxy(74 - x, 20);

printf(" ÜÛÜ ");

gotoxy(74 - x, 21);

printf(" ÛÛÛ ");

gotoxy(74 - x, 22);

colour\_change = GetStdHandle(STD\_OUTPUT\_HANDLE);

SetConsoleTextAttribute(colour\_change, FOREGROUND\_GREEN); // changing the color of flower stem to green

printf(" ÛÜÛÜÛ ");

gotoxy(74 - x, 23);

printf(" Û ");

gotoxy(74 - x, 24);

printf(" Û ");

x++;

}

void bird() /\* FUNCTION TO CREATE A BIRD \*/

{

game();

HANDLE colour\_change;

colour\_change = GetStdHandle(STD\_OUTPUT\_HANDLE);

SetConsoleTextAttribute(colour\_change, FOREGROUND\_RED | FOREGROUND\_GREEN); // changing the color of bird to yellow

/\* Creating a BIRD using graphic symbols \*/

gotoxy(73 - x, 20);

gotoxy(73 - x, 20);

printf(" ");

gotoxy(73 - x, 21);

printf(" ÜÜÜÜ Ü ");

gotoxy(73 - x, 22);

printf(" ÜÛÜÛÛÜß ");

gotoxy(73 - x, 23);

printf(" ÛÛÛÛÛÛÛ ");

gotoxy(73 - x, 24);

printf(" ");

x++;

}

void spikes() /\* FUNCTION TO CREATE SPIKES \*/

{

game();

HANDLE colour\_change;

colour\_change = GetStdHandle(STD\_OUTPUT\_HANDLE);

SetConsoleTextAttribute(colour\_change, FOREGROUND\_BLUE | FOREGROUND\_GREEN); //Changing the colour of spikes to light blue

/\* Creating SPIKES using graphic symbols\*/

gotoxy(73 - x, 24);

printf("ÛÜÛÜÛ ");

x++;

}

void cone() /\* FUNCTION TO CREATE A TRAFFIC CONE \*/

{

game();

HANDLE colour\_change;

colour\_change = GetStdHandle(STD\_OUTPUT\_HANDLE);

SetConsoleTextAttribute(colour\_change, FOREGROUND\_RED); //Changing the colour of cone to red

gotoxy(73 - x, 22);

printf(" ÛÛ ");

colour\_change = GetStdHandle(STD\_OUTPUT\_HANDLE);

SetConsoleTextAttribute(colour\_change, FOREGROUND\_RED | FOREGROUND\_GREEN | FOREGROUND\_BLUE); // changing the color of cone to white

gotoxy(73 - x, 23);

printf(" ÛÛÛÛ ");

colour\_change = GetStdHandle(STD\_OUTPUT\_HANDLE);

SetConsoleTextAttribute(colour\_change, FOREGROUND\_RED); //Changing the colour of cone back to red

gotoxy(73 - x, 24);

printf("ÛÛÛÛÛÛ ");

x++;

}

/\* FUNCTIONS FOR PLACING THE OBTACLES IN THE GAME \*/

void OB1() /\* PLACING THE BIRD OBSTACLE \*/

{

while (!\_kbhit()) // while the user doesn't hit any key

{

printClock();

ds(0, 40); // dinosaur moves

bird(); // bird is placed

}

ch = \_getche(); // 'getche' is used so there is no need to press enter after hitting space

if (ch == ' ') // when the user hits space

{

printClock();

for (i = 0; i < 10; i++)

{

printClock();

ds(1, 40); // dinosaur jumps

bird();

}

for (i = 0; i < 10; i++)

{

printClock();

ds(2, 40); // dinosaur comes back to the ground

bird();

}

printClock();

}

}

void OB2() /\* PLACING THE TRAFFIC CONE OBSTACLE \*/

{

while (!\_kbhit())

{

printClock();

ds(0, 40);

cone();

}

ch = \_getche();

if (ch == ' ')

{

printClock();

for (i = 0; i < 10; i++)

{

printClock();

ds(1, 40);

cone();

}

for (i = 0; i < 10; i++)

{

printClock();

ds(2, 40);

cone();

}

printClock();

}

}

void OB3() /\* PLACING THE FLOWER OBSTACLE \*/

{

while (!\_kbhit())

{

printClock();

ds(0, 40);

flower();

}

ch = \_getche();

if (ch == ' ')

{

printClock();

for (i = 0; i < 10; i++)

{

printClock();

ds(1, 40);

flower();

}

for (i = 0; i < 10; i++)

{

printClock();

ds(2, 40);

flower();

}

printClock();

}

}

void OB4() /\* PLACING THE CACTUS OBSTACLE \*/

{

while (!\_kbhit())

{

printClock();

ds(0, 40);

cactus();

}

ch = \_getche();

if (ch == ' ')

{

printClock();

for (i = 0; i < 10; i++)

{

printClock();

ds(1, 40);

cactus();

}

for (i = 0; i < 10; i++)

{

printClock();

ds(2, 40);

cactus();

}

printClock();

}

}

void OB5() /\* PLACING THE SPIKES OBSTACLES \*/

{

while (!\_kbhit())

{

printClock();

ds(0, 40);

spikes();

}

ch = \_getche();

if (ch == ' ')

{

printClock();

for (i = 0; i < 10; i++)

{

printClock();

ds(1, 40);

spikes();

}

for (i = 0; i < 10; i++)

{

printClock();

ds(2, 40);

spikes();

}

printClock();

}

}

/\* STARTUP MENU \*/

void startup\_choice() // player is given choice whether to start the game or not

{

printf("\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*");

printf("\n\n\n\t\t Would you like to play the T-rex game?\n\t\t Press 'y' to play and 'x' to Exit");

printf("\n\n\n\t PRESS ANY KEY TO GIVE COMMAND ");

printf("\n\n\n\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*");

scanf\_s(" %c", &q);

}

void exit\_game()

{

scr = 0;

HANDLE colour\_change;

colour\_change = GetStdHandle(STD\_OUTPUT\_HANDLE);

SetConsoleTextAttribute(colour\_change, FOREGROUND\_GREEN | FOREGROUND\_RED | FOREGROUND\_BLUE);

system("cls");

gotoxy(30, 18);

printf("ARE YOU SURE ? PRESS X TO EXIT OR Y TO CONTINUE PLAYING:");

scanf\_s(" %c", &q);

system("cls");

}

/\* MAIN FUNCTION \*/

int main()

{

system("mode con: lines=38 cols=120"); // defining console window size

startup\_choice(); // calling the sartup\_choice function for user to decide

startup\_menu(); // calling the startup\_menu function when user takes the decision

while (q == 'y') // while the user hits 'y' key

{

score(); // displaying the scoreboard

srand(time(NULL));

int y = rand() % 5 + 1; // calling the functions randomly

switch (y)

{

case 1:

{

OB1(); // if case is 1, bird obstacle is placed in game

break; }

case 2:

{

OB2(); // if case is 2, cone obstacle is placed in game

break;

}

case 3:

{

OB3(); // if case is 3, flower obstacle is placed in game

break;

}

case 4:

{

OB4(); // if case is 4, cactus obstacle is placed in game

break;

}

case 5:

{

OB5(); // if case is 5, spikes obstacle is placed in game

break;

}

}

top++;

if (ch == 'x')

{

exit\_game(); // if user hit 'x', user is given choice

}

if (q != 'y') // if the user exits the game

{

system("cls");

gotoxy(48, 20);

printf("GOODBYE");

break;

}

}

if (q != 'y')

{

system("cls");

gotoxy(48, 20);

printf("GOODBYE");

}

\_getch();

return 0;

}