

Report On

Walking man animation

Submitted in partial fulfillment of the requirements of the Course project in
Semester III of Second Year Artificial Intelligence and Data Science

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(2023-24)

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CERTIFICATE

This is to certify that the project entitled “Walking man animation” is a bonafide work of "Shreeya Hudekar (Roll No. 15), Charmi Jani (Roll No. 17), Tejashree Karekar (Roll No. 20)" submitted to the University of Mumbai in partial fulfillment of the requirement for the **Course project in semester III of Second Year** Artificial Intelligence and Data Science engineering.

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1 Overview:

- a. **Include Statements:** The code includes the following header files:
- **<graphics.h>**: This is a header file that provides functions for graphics programming in Turbo C/C++.
 - **<conio.h>**: This header file is used for console input and output operations.
 - **<dos.h>**: This header file provides access to DOS-specific functions, which are used for delaying and other low-level operations.
- b. **drawMan Function:** This function is responsible for drawing the stick figure of a man. It takes two parameters, **x** and **y**, which are the coordinates for the center of the figure.
- **circle(x, y, 20)**: Draws the head of the stick figure using the **circle** function with a radius of 20.
 - **line(x, y + 20, x, y + 70)**: Draws the body of the stick figure.
 - **line(x, y + 20, x - 20, y + 50)** and **line(x, y + 20, x + 20, y + 50)**: Draw the arms of the stick figure.
 - **line(x, y + 70, x - 20, y + 120)** and **line(x, y + 70, x + 20, y + 120)**: Draw the legs of the stick figure.
- c. **main Function:**
- **int gd = DETECT, gm;**: These variables are used to initialize the graphics system.
 - **initgraph(&gd, &gm, "C:\\Turboc3\\BGI")**: This function initializes the graphics mode and window. The **"C:\\Turboc3\\BGI"** parameter specifies the path to the BGI (Borland Graphics Interface) driver files.
 - **int x = 100;**: Initializes the x-coordinate of the man to 100.
 - **int maxX = getmaxx();**: Retrieves the maximum x-coordinate of the screen.
 - The code enters a loop with **while (!kbhit())**. It will continue running until a key is pressed.
 - **cleardevice();**: Clears the screen in each iteration to remove the previously drawn frame.
 - **drawMan(x, 200);**: Calls the **drawMan** function to draw the man at the current position (x, 200).
 - **delay(100);**: Adds a delay of 100 milliseconds to control the animation speed.
 - **x += 5;**: Moves the man 5 pixels to the right in each iteration.

- **if (x > maxX) x = -40;**: If the man goes beyond the right edge of the screen, it wraps around to the left by setting **x** to -40.

The loop continues until a key is pressed (**kbhit()**), at which point the program will exit the loop.

closegraph(); Closes the graphics mode and releases resources before the program terminates.

This code essentially creates a basic animation of a walking stick figure, and the animation continues until a key is pressed.

2 Program and Output:

```
#include <graphics.h>
```

```
#include <conio.h>
```

```
#include <dos.h>
```

```
void drawMan(int x, int y) {
```

```
    // Head
```

```
    circle(x, y, 20);
```

```
    // Body
```

```
    line(x, y + 20, x, y + 70);
```

```
    // Arms
```

```
    line(x, y + 20, x - 20, y + 50);
```

```
    line(x, y + 20, x + 20, y + 50);
```

```
    // Legs
```

```
    line(x, y + 70, x - 20, y + 120);
```

```
    line(x, y + 70, x + 20, y + 120);
```

```
}
```

```
int main() {
```

```
    int gd = DETECT, gm;
```

```
    initgraph(&gd, &gm, "C:\\Turboc3\\BGI");
```

```
    int x = 100; // Initial x-coordinate of the man
```

```
    int maxX = getmaxx();
```

```
    while (!kbhit()) {
```

```
        cleardevice();
```

```
        drawMan(x, 200);
```

```
        delay(100); // Control animation speed
```

```
        x += 5; // Move the man to the right
```

```
        if (x > maxX)
```

```

        x = -40; // Wrap around to the left
    }

    closegraph();
    return 0;
}X

```

3 Explanation:

This C code is an example of a simple animation using the graphics.h library in the Turbo C compiler. This code creates a window, draws a stick figure of a man, and animates him moving from left to right. Here's an explanation of the code.

1. Graphics Initialization

`int gd = DETECT, gm;`: These variables are used to specify the graphics driver (gd) and graphics mode (gm). The `DETECT` constant tells the graphics library to detect the best available graphics driver and mode.
`initgraph(&gd, &gm, "C:\\Turboc3\\BGI");`: This function initializes the graphics system with the specified driver and mode. The "C:\\Turboc3\\BGI" path points to the location of the BGI driver files, which are required for graphics operations.

2. Coordinates and Animation Loop:

`int x = 100;`: Initializes the x coordinate to 100. This is the initial x-coordinate of the man, which will be used to position the stick figure on the screen.

`int maxX = getmaxx();`: Retrieves the maximum x-coordinate of the screen, which will be used to determine when the man should wrap around from the right edge to the left edge of the screen.

Animation Loop:

`while (!kbhit());`: This creates a loop that continues until a key is pressed. In other words, the animation keeps running until a key is detected.

Drawing the Stick Figure:

`cleardevice();`: This clears the screen in each iteration of the loop. It's essential to remove the previous frame so that the new frame can be drawn.

`drawMan(x, 200);`: Calls the `drawMan` function to draw the stick figure at the current position (x, 200).

3. Animating the Man:

`delay(100);`: This adds a delay of 100 milliseconds between frames. It controls the speed of the animation by slowing it down.

`x += 5;`: This line increments the `x` coordinate by 5 pixels in each iteration. This makes the stick figure appear to move to the right.

`if (x > maxX) x = -40;`: This checks if the man has moved beyond the right edge of the screen. If so, it resets the `x` coordinate to -40, effectively wrapping the man to the left side of the screen.

4. Exiting the Program:

The animation loop continues until a key is pressed (`kbhit()`). When a key is pressed, the program exits the loop.

5. Closing Graphics Mode:

`closegraph();`: This function is called to close the graphics mode and release any resources used for graphics. It's important to call this before the program terminates.

In summary, the code creates a simple animation of a stick figure of a man walking from left to right on the screen. The animation keeps running until a key is pressed, at which point it exits and closes the graphics mode. The delay and the position updates create the illusion of the man walking, and when the man reaches the right edge of the screen, he wraps around to the left to continue the animation.