



Vidyavardhini's College of Engineering & Technology

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Class/Sem:	SE/IV
Experiment No.:	3
Title:	Program for drawing square using Assembly Language.
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Aim: Program for drawing square using Assembly Language.

Theory: INT 10h is a video service bios interrupt. It includes services like setting the video mode, character and string output and reading and writing pixels in graphics mode. To use the BIOS interrupt load ah with the desired sub-function. Load other required parameters in other registers and make a call to INT 10h.

INT 10h/AH = 0ch -Write graphics pixel.

Input:

AL = pixel colour

CX = column

DX = row

Algorithm:

1. Start
2. Initialize ax to 0013h for graphics mode.
3. Set the Counter bx to 60 h.
4. Initialize the co-ordinates cx and dx to 60h.
5. Set the Color.
6. Set Display Mode function by making ah = 0ch.
7. Increment cx and Decrement bx.
8. Repeat step 7 until bx = 0.
9. Initialize the counter by making bx = 60h.
10. Set the color.
11. Set Display Mode function by making ah = 0ch.
12. Increment dx & Decrement bx.
13. Repeat step 12 until bx = 0.
14. Initialize the counter by making bx = 60h.
15. Set the Color.
16. Set Display Mode function by making ah = 0ch.
17. Decrement cx and Decrement bx.



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18. Repeat step 17 until bx = 0.
19. Initialize the counter by making bx = 60h.
20. Set the color.
21. Set Display Mode function by making ah = 0ch.
22. Decrement dx & Decrement bx.
23. Repeat step 22 until bx = 0.
24. To end the program use DOS interrupt:
 - 1) Load ah = 4ch.
 - 2) Call int 21h.
25. Stop.

Code :

```
MOV AX,0013H  
INT 10H
```

```
MOV BX,60H  
MOV CX,60H  
MOV DX,60H
```

```
MOV AL,02H
```

```
L1:MOV AH,0CH
```

```
INC CX  
DEC BX  
INT 10H
```

```
JNZ L1  
MOV BX,60H
```

```
L2:MOV AH,0CH
```

```
INC DX  
DEC BX  
INT 10H
```

```
JNZ L2
```

```
MOV BX,60H
```

L3:MOV AH,0CH

DEC CX
DEC BX
INT 10H

JNZ L3
MOV BX,60H

L4:MOV AH,0CH

DEC DX
DEC BX
INT 10H

JNZ L4
MOV BX,60H

L5:MOV AH,0CH

INC CX
INC DX
DEC BX
INT 10H

JNZ L5
MOV BX,60H
MOV CX,60H

L6:MOV AH,0CH

INC CX
DEC DX
DEC BX
INT 10H

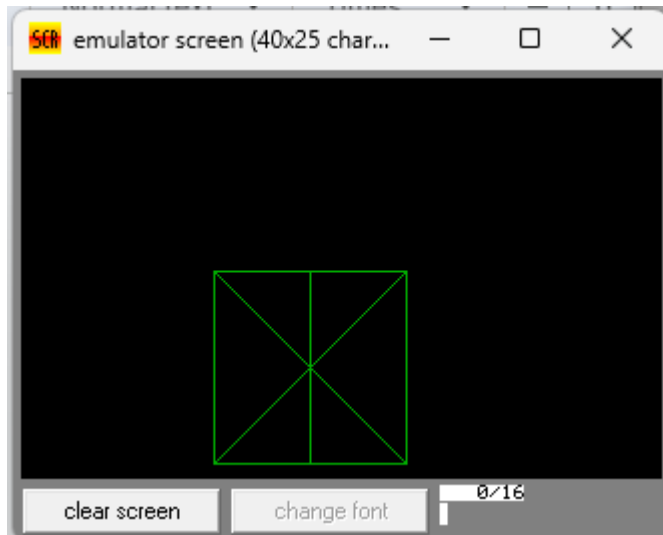
JNZ L6
MOV BX,60H
MOV CX,90H

L7:MOV AH,0CH

INC DX
DEC BX
INT 10H

JNZ L7

Output :



Conclusion :

In conclusion, the program for drawing a square using Assembly Language demonstrates the fundamental concepts of low-level programming and computational thinking. By breaking down the task into smaller steps and utilizing basic arithmetic and loop structures, we were able to create a simple yet effective solution. Through this exercise, we gained insights into the inner workings of computer hardware and the importance of precise instructions to achieve desired outcomes. While drawing a square may seem trivial, the process serves as a foundation for more complex algorithms and applications. By mastering these fundamental principles, we lay the groundwork for further exploration and innovation in the realm of computer programming.