**Aim: Implement character generation: Bitmap method to generate initial characters of your name.**

Theory:

Bitmap Method:

· Bitmap method is a called dot-matrix method as the name suggests this method use array of bits for generating a character. These dots are the points for array whose size is fixed.

· In bit matrix method when the dots is stored in the form of array the value 1 in array represent the characters i.e. where the dots appear we represent that position with numerical value 1 and the value where dots are not present is represented by 0 in array.

· It is also called dot matrix because in this method characters are represented by an array of dots in the matrix form. It is a two dimensional array having columns and rows. A 5x7 array is commonly used to represent characters. However 7x9 and 9x13 arrays are also used. Higher resolution devices such as inkjet printer or laser printer may use character arrays that are over 100x100.

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Character A in 5 × 7 dot matrix format
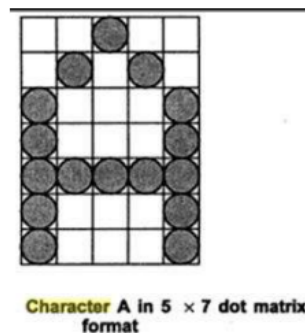
Procedure:

1. 2D character generators create two-dimensional characters that can be used in a variety of applications, such as video games or animated films.
2. 3D character generators create three-dimensional characters that can be used in a variety of applications, such as video games or animated films.

Program:

```c
#include<stdio.h>

#include<conio.h>

#include<graphics.h>

#include<dos.h>

void main()

{

int i,j,k,x,y;

int gd=DETECT,gm;

int ch1[][10]={ {0,0,0,1,1,1,1,0,0,0},

{1,1,1,1,1,1,1,1,0,0},

{1,1,1,0,0,0,1,1,1,0},

{1,1,1,0,0,1,1,1,0,0},

{1,1,1,1,1,1,1,1,0,0},

{1,1,1,1,1,1,0,0,0,0},

{1,1,1,0,1,1,1,0,0,0},

{1,1,1,0,0,1,1,1,0,0},

{1,1,1,0,0,0,1,1,1,0},

{1,1,1,0,0,0,0,1,1,1} };

int ch2[][10]={ {0,0,0,1,1,1,1,0,0,0},

{0,1,1,1,1,1,1,1,1,0},

{0,1,1,0,0,0,0,1,1,0},

{0,1,1,0,0,0,0,1,1,0},

{0,1,1,0,0,0,0,1,1,0},

{0,1,1,0,0,0,0,1,1,0},

{0,1,1,0,0,0,0,1,1,0},
```

```c
{0,1,1,0,0,0,0,1,1,0},

{0,1,1,0,0,0,0,1,1,0},

{0,0,1,1,1,1,1,0,0} };

int ch3[][10]={ {0,1,1,1,1,1,0,0,0,0},

{0,1,1,1,1,1,1,1,1,0},

{0,1,1,1,1,1,1,1,1,0},

{0,1,1,0,0,0,0,0,0,0},

{0,1,1,1,1,1,1,1,1,0},

{0,1,1,1,1,1,1,1,1,0},

{0,0,0,0,0,0,0,1,1,0},

{0,1,1,1,1,1,1,1,1,0},

{0,1,1,1,1,1,1,1,1,0},

{0,0,0,0,0,0,0,0,0,0} };

int ch4[][10]={ {1,1,1,0,0,0,0,1,1,1},

{0,1,1,0,0,0,0,1,1,0},

{0,1,1,0,0,0,0,1,1,0},

{0,1,1,1,0,0,0,1,1,0},

{0,1,1,1,1,1,1,1,1,0},

{0,1,1,1,1,1,1,1,1,0},

{0,1,1,0,0,0,0,1,1,0},

{0,1,1,0,0,0,0,1,1,0},

{0,1,1,0,0,0,0,1,1,0},

{0,1,1,0,0,0,0,1,1,0} };

int ch5[][10]={ {0,0,0,1,1,1,1,0,0,0},

{0,0,1,1,1,1,1,1,0,0},
```

```c
{0,0,1,1,0,0,1,1,0,0},

{0,0,1,1,0,0,1,1,0,0},

{0,1,1,1,1,1,1,1,1,0},

{0,1,1,1,1,1,1,1,1,0},

{0,1,1,1,0,0,1,1,1,0},

{0,1,1,1,0,0,1,1,1,0},

{1,1,1,0,0,0,0,1,1,1},

{1,1,1,0,0,0,0,1,1,1} };

int ch6[][10]={ {1,1,1,0,0,0,0,1,1,1},

{1,1,1,1,0,0,0,1,1,1},

{1,1,1,1,0,0,0,1,1,1},

{1,1,1,1,1,0,0,1,1,1},

{1,1,1,1,1,0,0,1,1,1},

{1,1,1,0,1,1,0,1,1,1},

{1,1,1,0,1,1,0,1,1,1},

{1,1,1,0,0,1,1,1,1,1},

{1,1,1,0,0,1,1,1,1,1},

{1,1,1,0,0,0,1,1,1,1} };

initgraph(&gd,&gm, "..\\BGI");

setbkcolor(BLUE);

for(k=0;k<6;k++)

{

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

{

for(j=0;j<10;j++)
```

```c
{
if(k==0)
{
if(ch1[i][j]==1)
{
putpixel(j+200,i+230,RED);
}
}
if(k==1)
{
if(ch2[i][j]==1)
{
putpixel(j+250,i+230,RED);
}
}
if(k==2)
{
if(ch3[i][j]==1)
{
putpixel(j+300,i+230,RED);
}
}
if(k==3)
{
if(ch4[i][j]==1)
```

```c
{
putpixel(j+350,i+230,RED);
}
}
if(k==4)
{
if(ch5[i][j]==1)
{
putpixel(j+400,i+230,RED);
}
}
if(k==5)
{
if(ch6[i][j]==1)
{
putpixel(j+450,i+230,RED);
}
}
}
delay(200);
}
}
getch();
closegraph();
}
```