# EXPERIMENT NO. 05

**AIM:** To implement Bit Map method for given character generation

**SOFTWARE AND HARDWARE REQUIRED:** Turbo-C.

**THEORY:**

- A simple method for representing the character shapes in a particular typeface is to use rectangular grid patterns.
- The figure below shows the pattern for the particular letter.

| | | | | | | |
|---|---|---|---|---|---|---|
| 1 | 1 | 1 | 1 | 1 | 1 | 0 |
| 0 | 1 | 1 | 0 | 0 | 1 | 1 |
| 0 | 1 | 1 | 0 | 0 | 1 | 1 |
| 0 | 1 | 1 | 1 | 1 | 1 | 0 |
| 0 | 1 | 1 | 0 | 0 | 1 | 1 |
| 0 | 1 | 1 | 0 | 0 | 1 | 1 |
| 1 | 1 | 1 | 1 | 1 | 1 | 0 |

- When the pattern in the figure copied to the area of the frame buffer, the 1 bits designate which pixel positions to displayed on the monitor.
- Bitmap fonts the simplest to define and display as character grid only need to be mapped to a framebuffer position.
- Bitmap fonts require more space because each variation (size and format) must stored in a font cache.
- It possible to generate different size and other variation from one set but this usually does not produce the good result.

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. An 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.

Each dot in the matrix is a pixel. The character is placed on the screen by copying pixel values from the character array into some portion of the screen's frame buffer. The value of the pixel controls the intensity of the pixel.

**CONLUSION:** Thus we have successfully implemented Bitmap Character Generation method to generate a Character

**SIGN** **GRADE**

**DATE**