## **Rho Function**

For rho we will not inverse the string. We will shifts the bits of the string according to the table shown below

|     | X=3 | X=4 | X=0 | X=1 | X=2 |
|-----|-----|-----|-----|-----|-----|
| Y=2 | 1   | 7   | 3   | 2   | 3   |
| Y=1 | 7   | 4   | 4   | 4   | 6   |
| Y=0 | 4   | 3   | 0   | 1   | 6   |
| Y=4 | 0   | 6   | 2   | 2   | 5   |
| Y=3 | 5   | 0   | 1   | 5   | 7   |

Always shift the bits by the above table

For example, take the value at x = 1, y = 0 the value is 62,

62 value should produce 31 as the output.

Converting to binary (62) -> 01100010

Now according to the table we will shits the bits by 1.

The output will be (00110001) -> 31 which is the desired output.

We have verified the results with the code.