Anishka Chauhan
AP19110010518

DFA M=(Q,$\sum$,δ,Q_0,F)
 Where Q=Set of all states ={Q_0,Q_1,Q_2,Q_3}
 $\sum$=Input Alphabet={0,1},
Start state is Q_0
F=Set of all final States={ Q_3, Q_4}
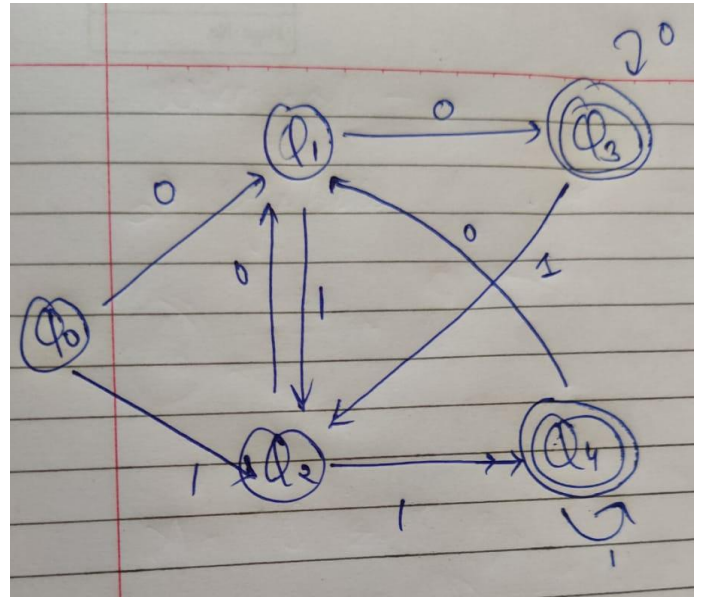
Language recogniser

Input:
      input //input string

Output:
      Algorithm prints a message
            "String accepted": If the input is acceptable by the language,
            "String not accepted" otherwise,
"Invalid token": If the input string contains symbols other than the input alphabet.

Test cases:

Input	Output
001011	String accepted
0101	String not accepted
11010	String not accepted
110111	String accepted
0198	Invalid token

C Code

```c
#include <stdio.h>

void main ()
{
  int state = 0, i = 0;
  char language, input[50];
  printf ("Enter input string \t :");
  scanf ("%s", input);


  while ((language = input[i++]) != '\0')
    {

    switch (state)
        {
        case 0:
          if (language == '0')
            state = 1;
          else if (language == '1')
            state = 2;
          else
            {
              printf ("Invalid token");
              exit (0);
            }
          break;
```

```c
case 1:
  if (language == '0')
    state = 3;
  else if (language == '1')
    state = 2;
  else
    {
      printf ("Invalid token");
      exit (0);
    }

  break;
case 2:
  if (language == '0')
    state = 1;
  else if (language == '1')
    state = 4;
  else
    {
      printf ("Invalid token");
      exit (0);
    }
  break;
case 3:
  if (language == '0')
    state = 3;
  else if (language == '1')
    state = 2;
  else
    {
      printf ("Invalid token");
      exit (0);
    }
  break;
case 4:
  if (language == '0')
    state = 1;
  else if (language == '1')
    state = 4;
  else
    {
      printf ("Invalid token");
      exit (0);
    }
```

```c
            break;
        }

    }
    if (state == 3 || state == 4)
      printf ("\n\nString accepted\n\n");


    else
      printf ("\n\nString not accepted\n\n");
}
```