

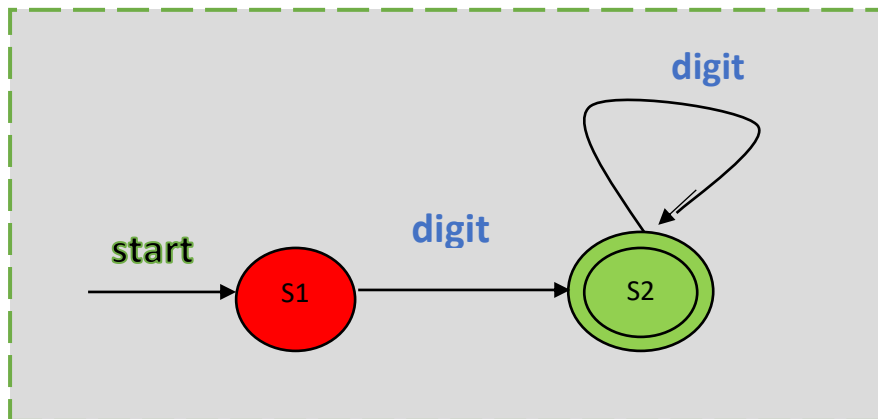
Regular Expression and Transition Diagram for Unsigned Number

Example: signed numbers such as 123, 39.37.

1. 123

Regular Expression \longrightarrow digit digit*

- At first draw the transition diagram of regular expression as follow:



- Write program code for the transition diagram as follow:

The screenshot shows a Windows form titled 'Form1'. It contains several controls: a label 'Unsigned IntNum' (circled in red), a text box, a 'clear' button, a label 'Unsigned RealNum', and a label 'label1'.

```
string input = textBox1.Text;
int k = input.Length;
int i = 0;
int s = 1;
bool t = true;

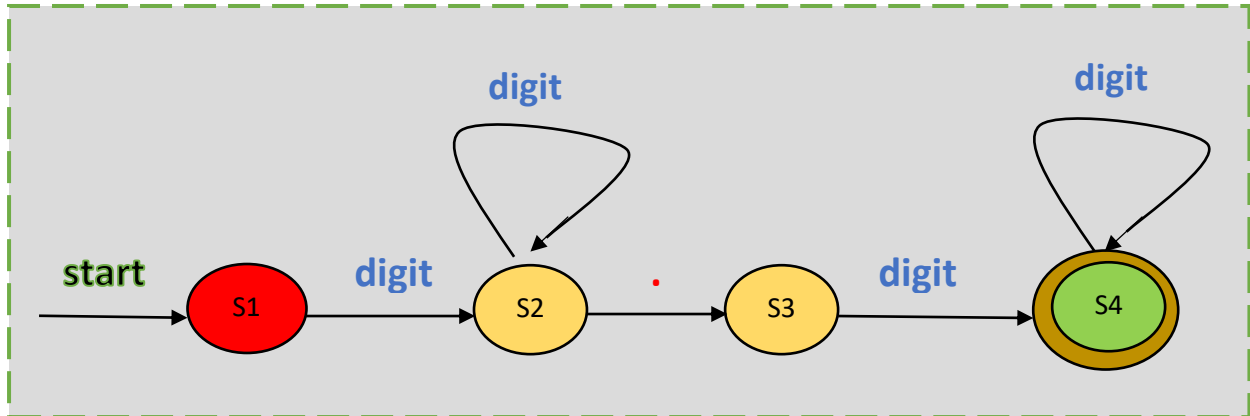
while ((i < k) & t == true)
{
    char ch = input[i];
    switch (s)
    {

        case 1:
            {
                if (ch >= '0' && ch <= '9')
                {
                    s = 2;
                    t = true;
                    i++;
                }
                else
                    t = false;
            }
            break;
        case 2:
            {
                if (ch >= '0' && ch <= '9')
                {
                    t = true;
                    s = 2;
                    i++;
                }
                else
                    t = false;
            }
            break;
    }
    if (s == 2 & t == true)
        label1.Text = "Accepted";
    else
        label1.Text = "Rejected";
}
```

2. 39.37

Regular Expression \longrightarrow digit digit*. digit digit*

- At first draw the transition diagram of regular expression as follow:



- Write program code for the transition diagram as follow:

The screenshot shows a Windows form titled 'Form1'. It contains several controls: a button labeled 'Unsigned IntNum' at the top left; a text box in the center; a button labeled 'clear' at the top right; a button labeled 'Unsigned RealNum' at the bottom left, which is circled in red; and a label 'label1' at the bottom center.

```

string input = textBox1.Text;

int k = input.Length;
int i = 0;
int s = 1;
bool t = true;

while ((i < k) & t == true)
{
    char ch = input[i];
    switch (s)
    {
        case 1:
        {
            if (ch >= '0' && ch <= '9')
            {
                s = 2;
                t = true;
                i++;
            }
            else
                t = false;
        }
        break;
        case 2:
        {
            if (ch >= '0' && ch <= '9')
            {
                t = true;
                s = 2;
                i++;
            }
            else if (ch == '.')
            {
                t = true;
                s = 3;
                i++;
            }
            else
                t = false;
        }
        break;
        case 3:
        {
            if (ch >= '0' && ch <= '9')
            {
                s = 4;
                t = true;
                i++;
            }
            else
                t = false;
        }
        break;
        case 4:
        {
            if (ch >= '0' && ch <= '9')
            {
                s = 4;
                t = true;
                i++;
            }
            else
                t = false;
        }
        break;
    }
}

```

```
}  
    if (s == 4 & t == true)  
        label1.Text = "Accepted";  
    else  
        label1.Text = "Rejected";  
    }  
}
```