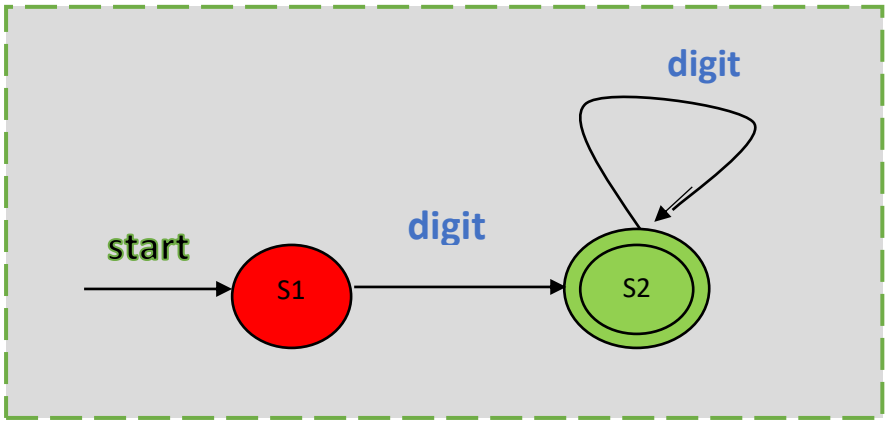
# Regular Expression and Transition Diagram for Unsigned Number

## Example: signed numbers such as 123, 39.37.

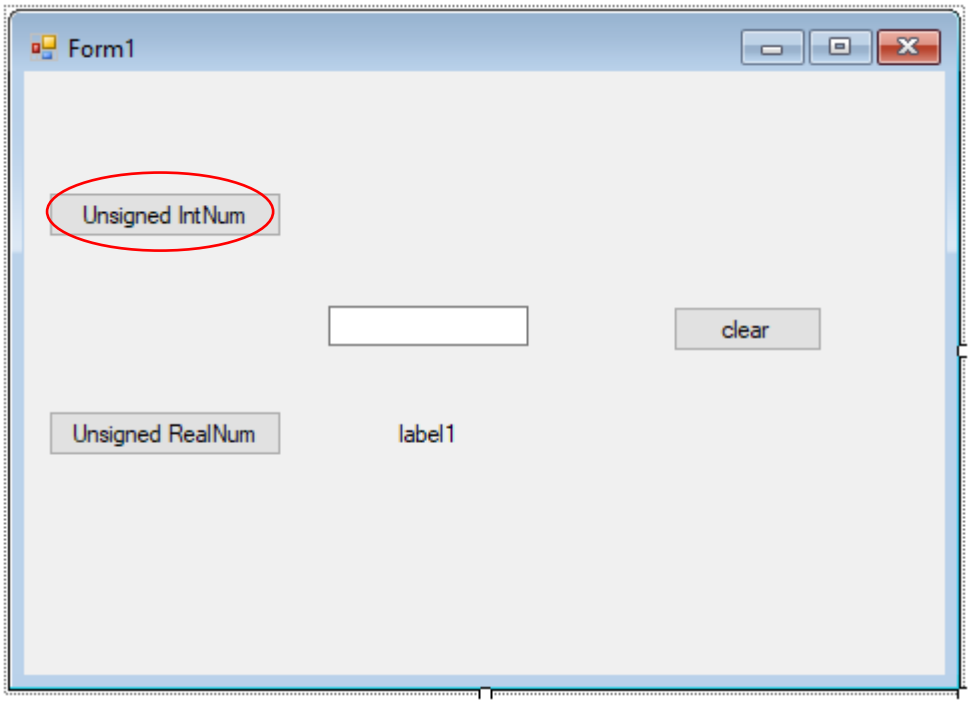
### 1. 123

Regular Expression ⟹ digit digit*

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




- Write program code for the transition diagram as follow:

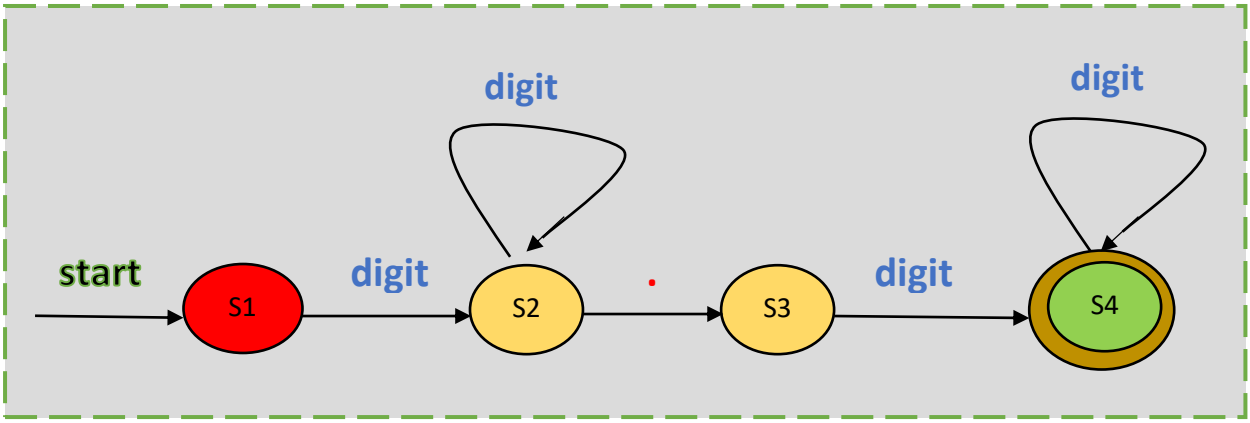


```
string input = textBox1.Text;
        int k = input.Length;
        int i = 0;
        int s = 1;
        bool t = true;

        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";
        }
```

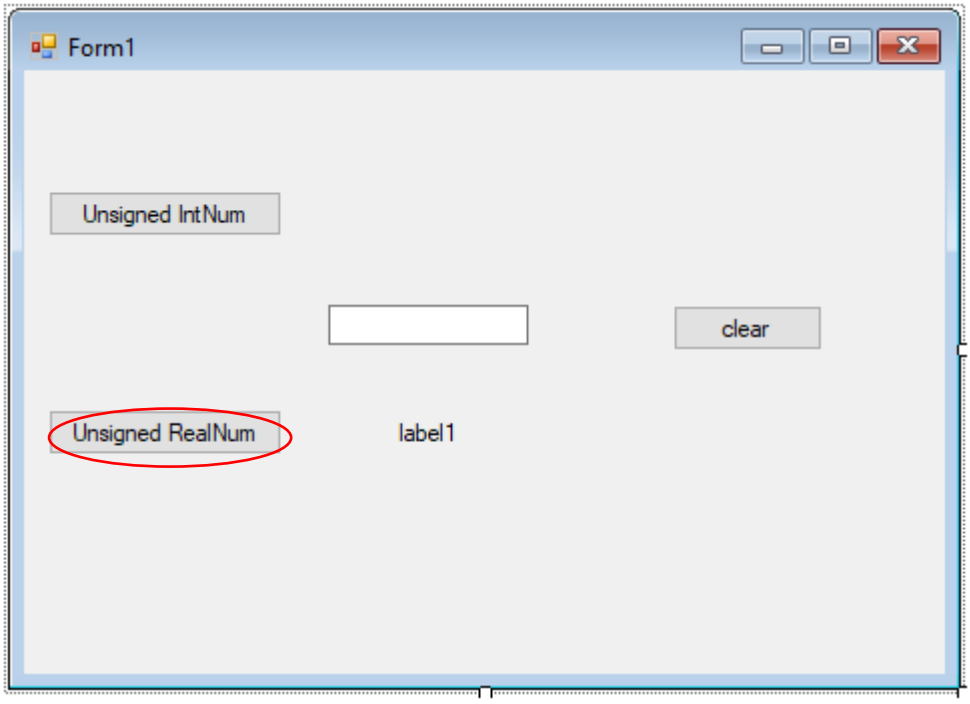
## 2. 39.37

Regular Expression ⟹ digit digit*. digit digit*

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




- Write program code for the transition diagram as follow:



```
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";
            }
        }
```