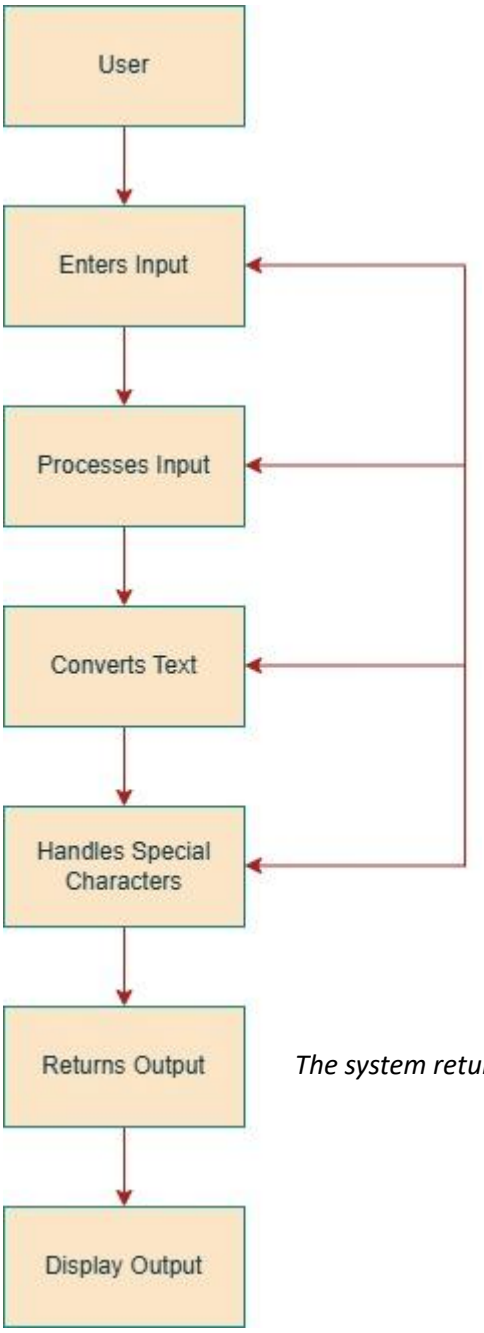
Use Case Diagram



The user enters a keypad input.

The system reads and interprets the input sequence.

The system converts numeric input into corresponding letters.

*The system processes special characters: * (backspace), # (send), and space (pause).*

The system returns the final converted text.

Logic

1. The function starts by initializing necessary variables.
2. It loops through each character of the input string.
3. It processes special characters (#, *, and space " ").
4. It checks whether the current key is the same as the last key to determine letter selection.
5. It appends the correct letter to the output.
6. Finally, it returns the constructed string.

Implementation

```
using System;
using System.Collections.Generic;
using System.Text;

public class KeypadTxtConverter
{
   public static string ConvertKeypadInput(string input)
   {
      Dictionary<char, string> keypad = new Dictionary<char, string>
      {
         {'2', "ABC"}, {'3', "DEF"}, {'4', "GHI"}, {'5', "JKL"}, {'6', "MNO"},
         {'7', "PQRS"}, {'8', "TUV"}, {'9', "WXYZ"}, {'0', " "}
      };

      StringBuilder output = new StringBuilder();
      int count = 0;
      char lastChar = '\0';

      foreach (char c in input)
```

```
    {
        if (c == '#') break;
        if (c == '*')
        {
            if (output.Length > 0)
                output.Length--;
            continue;
        }
        if (c == ' ')
        {
            count = 0;
            continue;
        }

        if (c == lastChar)
            count++;
        else
            count = 0;

        if (keypad.ContainsKey(c))
        {
            string letters = keypad[c];
            output.Append(letters[count % letters.Length]);
        }

        lastChar = c;
    }

    return output.ToString();
}
```

```
    public static void Main()
    {
        Console.WriteLine(ConvertKeypadInput("33#")); // Output: E
        Console.WriteLine(ConvertKeypadInput("227*#")); // Output: B
        Console.WriteLine(ConvertKeypadInput("4433555 555666#")); // Output: HELLO
        Console.WriteLine(ConvertKeypadInput("8 88777444666*664#")); // TUR SING
    }
}
```