Temperature Monitoring System

1-Set the threshold temperature from the input given from user
2-Using a loop
 a-get the current temperature reading
 b-check if current temp>= threshold temp
 c-if not, continue
 d-else, trigger an alarm
 e-reset the alarm
3-Repeat step 2

Motor Control System

1-Get the desired speed from user
2-Get the current speed from motor
3-If desired is not equal to current
 a-use PWM to increase/decrease the motor to desired speed
4-Display current speed on LCD

LED Blinking Pattern

1-Get the number of LEDs from user
2-Set a timer for those LEDs to blink
3-Get the blinking pattern from the user
4-Program an interrupt that increase or decrease the speed of the timer
5-Activate the interrupt
6-Display the current blinking pattern
7-Continue steps 3-6

Data Logger

1-Initialize variable for data logging
2-Read the data to those variables
3-Store these data to EEPROM or Flash memory
4-Display these data when required
5-Repeat steps 2-4 after fixed intervals

Calculator

inp1=first element
inp2=second element

```
op=operation(add/sub/mul/div)
switch(op)
case "add":
        result=inp1+inp2
        printf(result)
        break

case "sub":
        result=inp1-inp2
        printf(result)
        break

case "mul":
        result=inp1*inp2
        printf(result)
        break

case "div":
        if(inp==0)
                printf("division by zero not possible")
                break
        else
                result=inp1/inp2
                printf(result)
                break
```

Factorial

```
factorial(inp)
  if inp==1
        return inp
  else
        return inp*factorial(inp-1)

inp=non negative integer
print(factorial(inp))
```

Smart Irrigation System

```
1)threshold= user defined moisture threshold percentage
2)time=current time
3)if(time b/w 6am and 6pm)
        a)current= current soil moisture percentage
        b)if(current<threshold)
                -print("Watering required")
```

```
                -activate water pump
                -print("Pump activated")
                -current= current soil moisture percentage
                -print(current)

        c)else
                -print("Watering not required")
                -print("Pump not activated")
                -print(current)
4)else
        a)print("Pump not activated")
        b)print(current)
5)Repeat steps 2-4
```