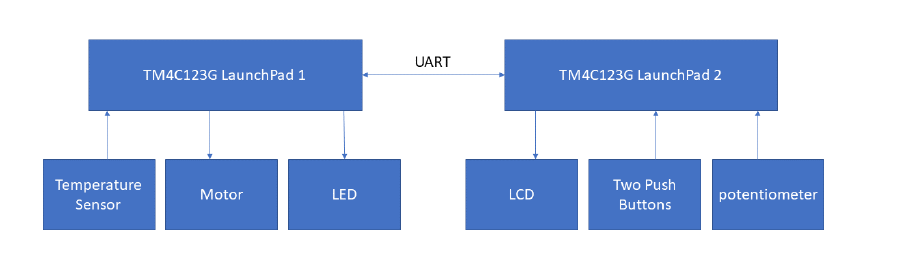


**Smart Home**

**By: Group 8**

**Abstract:**

Smart Home consists of 3 subsystems using two Tiva C as shown in figure.

****

**Components used:**

1-Two TM4C123G Launchpads

2-LCD

3-ServoMotor

4-Potentiometer

**Drivers:**

**Port Drivers:**

|  |  |
| --- | --- |
| Name | Port\_Init |
| Input | uint8\_t port\_index |
| Return | void |
| Description | Initialize port based on port index |

|  |  |
| --- | --- |
| Name | Port\_SetPinDirection |
| Input | uint8\_t port\_index,  uint8\_t pins\_mask, Port\_PinDirectionType pins\_direction |
| Return | void |
| Description | Change the direction of the selected pins |

|  |  |
| --- | --- |
| Name | Port\_SetPinPullUp |
| Input | uint8\_t port\_index,  uint8\_t pins\_mask,  uint8\_t enable |
| Return | void |
| Description | Make the Pins chosen pulled up internally with resistance |

|  |  |
| --- | --- |
| Name | Port\_SetPinPullDown |
| Input | uint8\_t port\_index, uint8\_t pins\_mask, uint8\_t enable |
| Return | void |
| Description | Make the Pins chosen pulled down internally with resistance. |

**ADC Drivers:**

|  |  |
| --- | --- |
| Name | ADC0\_init |
| Input | uint8\_t channel\_num,  triggerType trig\_type |
| Return | void |
| Description |  |

|  |  |
| --- | --- |
| Name | ADC0\_channelConfig |
| Input | uint8\_t channel\_num |
| Return | void |
| Description |  |

|  |  |
| --- | --- |
| Name | ADC0\_start\_conversion |
| Input | void |
| Return | void |
| Description |  |

|  |  |
| --- | --- |
| Name | ADC0\_digital\_toVoltage |
| Input | uint16\_t digital\_value |
| Return | float |
| Description |  |

**Temperature Sensor Driver:**

|  |  |
| --- | --- |
| Name | TempSensor\_init |
| Input | void |
| Return | void |
| Description | Initialize temperature sensor |

|  |  |
| --- | --- |
| Name | TempSensor\_readTemp |
| Input | void |
| Return | Float |
| Description | Return temperature read from sensor |

**Potentiometer Driver:**

|  |  |
| --- | --- |
| Name | Read\_Potentiometer |
| Input | void |
| Return | float |
| Description | Return potentiometer value |

**Interrupt Driver:**

|  |  |
| --- | --- |
| Name | Initalize\_PORTF\_interrupt |
| Input | uint8\_t pinsmask |
| Return | void |
| Description | Initialize interrupt on the pins of ports F selected by pinsmask |