Activity 4 : Having Fun with Arduino

Group No : 03
Group Member :

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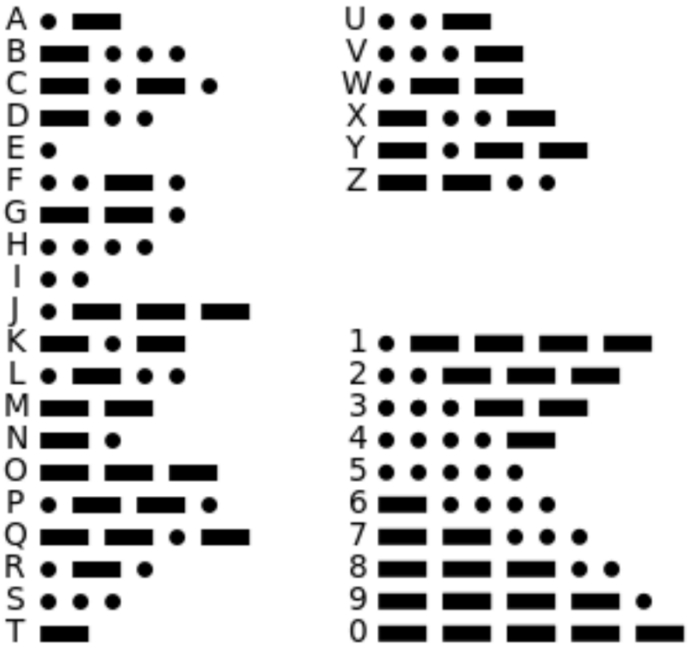
“Outstanding Factor”

Prerequisite: All of your team members have to complete all parts before doing this part.

Write Arduino code to decode “Morse Code”. The input of the “Morse Code” is the push button. As shown in the figure, a dot is represented by a short push, a dash is represented by a long push. You may determine short and long push by yourself.
There are 3 types of command for the serial input
‘s’ to start input “Morse Code” for a character.
‘n’ to stop input “Morse Code” of a character. Also, output the character to the serial output and replay the “Morse Code” of that character with LED.
‘r’ to show the result of all the characters you entered.
After you have finished, call a TA or an instructor to check your output. Also, put the code in the answer box.
Example Video Clip : https://youtu.be/rD7mwFlDQbQ




```
int ledpin = 2;
int button = 3;
int buttonState = 0;
String accStr ="";
String curStr ="";
String accMorse ="";


String decode(String morse){
      if(morse == ".-")
      {return "a";}
      else if(morse == "-...")
      {return "b";}
      else if(morse == "-.-.")
      {return "c";}
      else if(morse == "-..")
      {return "d";}
      else if(morse == ".")
      {return "e";}
      else if(morse == "..-.")
      {return "f";}
      else if(morse == "--.")
      {return "g";}
```

```
else if(morse == "....")
{return "h";}
else if(morse == "..")
{return "i";}
else if(morse == ".---")
{return "j";}
else if(morse == "-.-")
{return "k";}
else if(morse == ".-..")
{return "l";}
else if(morse == "--")
{return "m";}
else if(morse == "-.")
{return "n";}
else if(morse == "---")
{return "o";}
else if(morse == ".--.")
{return "p";}
else if(morse == "--.-")
{return "q";}
else if(morse == ".-.")
{return "r";}
else if(morse == "...")
{return "s";}
else if(morse == "-")
{return "t";}
else if(morse == "..-")
{return "u";}
else if(morse == "...-")
{return "v";}
else if(morse == ".--")
{return "w";}
else if(morse == "-..-")
{return "x";}
else if(morse == "-.--")
{return "y";}
else if(morse == "--..")
{return "z";}
else if(morse == "-----")
{return "0";}
```

```
        else if(morse == ".----")
        {return "1";}
        else if(morse == "..---")
        {return "2";}
        else if(morse == "...--")
        {return "3";}
        else if(morse == "....-")
        {return "4";}
        else if(morse == ".....")
        {return "5";}
        else if(morse == "-....")
        {return "6";}
        else if(morse == "--...")
        {return "7";}
        else if(morse == "---..")
        {return "8";}
       else if(morse == "----.")
        {return "9";}
        else{return " ";}
}


void pushButton(){
  buttonState = digitalRead(button);
  if(buttonState == 1){
    digitalWrite(ledpin, HIGH);
  }
  if(buttonState == 0){
    digitalWrite(ledpin, LOW);
  }
}

void inputLoop(){
  unsigned long threashold = 4000;
  unsigned long duration = 0;
  Serial.println("## Recording ##");
  while(true){
    if(Serial.available() > 0) {//exit
      char inChar = Serial.read();
     if(inChar == 'n'){
```

```
      curStr = decode(accMorse);
       accStr += curStr;
       Serial.println("You Entered -> "+accMorse);
       Serial.println("Decoded : " + curStr);
       accMorse = "";
       break;
      }
    }// recording
    pushButton();
    if(buttonState){
     duration++;
     }
    else if(duration){
     if(duration > threashold){
      accMorse += "-";
     Serial.println("-");
     }
     else {
      accMorse += ".";
      Serial.println(".");
     }
     duration = 0;
    }
  }
}


void setup()
{
  pinMode(ledpin, OUTPUT);
  pinMode(button, INPUT);
  Serial.begin(115200);
  Serial.println("\n\nMorse Decoder");

}

void loop()
{
   if(Serial.available() > 0) {
       char inChar = Serial.read();
```

```
        if(inChar == 's') inputLoop();
    else if(inChar == 'r'){
     Serial.println("You typed : "+accStr);
                accStr = "";
                curStr = "";
    }
  }
}
```

Project Link :

https://www.tinkercad.com/things/0zUs5dbBvws-fantabulous-waasa/editel?sharecode=HXVq3w_BQnmon0BWHyhKBdd3jqWoTDSYhq3n9YjWoXg

When you are done show it to the instructor or TA.