ARDUINO PROGRAMMING

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BASIC STRUCTURE

• Fairly simple, C-based programming language
• Runs in 2 parts (functions)
• 2 Functions enclose blocks of statements
• {} define beginning and end of function block
• ; used to end a statement and separate elements of the program
• // used to add comments, or “comment out” for debugging
VARIABLE DECLARATION

• All variables must be declared before they can be used
• To “declare” a variable is to define the type, name, and optionally assign initial value
• `const int LED = 13; //number of LED Pin`
• `const int Button1 = 2; //number of Button Pin`
• `int buttonState = 0; //variable for reading the Button status`
MAIN FUNCTIONS

• Preparation Function
  • void setup()
    {
      statements;
    }

• Execution
  • void loop()
    {
      statements;
    }
VOID SETUP()

• Used to initialize pin modes, begin serial communication

• void setup()

{  
    pinMode(LED, OUTPUT);
    pinMode(Button1, INPUT_PULLUP);
}
VOID LOOP()

• Actual program to be run in a loop
• Allows program to change, respond and control Arduino
void loop()
{
  buttonState = 0;  //reads state of Button HIGH or LOW
  if (buttonState == HIGH) { //check if Button is pressed, if so buttonState is HIGH
    digitalWrite(LED, HIGH);  //turns on LED
  }
  else{ //if buttonState is LOW (button not pressed)
    digitalWrite(LED, LOW);  //turn off LED
  }
}