```cpp
    int UpperThreshold = 100;    //Thresholding of where
to read "beats" based on your signal input
    int LowerThreshold = 80;
    int reading = 0;
    int BPM = 0;
    bool IgnoreReading = false;
    bool FirstPulseDetected = false;
    unsigned long FirstPulseTime = 0;
    unsigned long SecondPulseTime = 0;
    unsigned long PulseInterval = 0;
    int LED = 13;

    void setup(){
      Serial.begin(74880);
      pinMode(LED, OUTPUT); // Declares the LED as an
output
    }


    void loop(){
      reading = analogRead(A0);
      // Heart beat leading edge detected.
      if(reading > UpperThreshold && IgnoreReading ==
false){
        digitalWrite(LED, HIGH); // Turns the LED on
        if(FirstPulseDetected == false){
          FirstPulseTime = millis();
          FirstPulseDetected = true;
        }
        else{
          SecondPulseTime = millis();
```

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            PulseInterval = SecondPulseTime -
FirstPulseTime;
            FirstPulseTime = SecondPulseTime;
        }
        IgnoreReading = true;
      }

      // Heart beat trailing edge detected.
      if(reading < LowerThreshold && reading > 2){
        digitalWrite(LED, LOW); // Turns the LED off
        IgnoreReading = false;
      }

      BPM = (1.0/PulseInterval) * 60.0 * 1000;
      //Serial.println(A0);
      Serial.print("BPM = ");
      Serial.println(BPM);
  delayMicroseconds(3900);
  {
  // read the input on analog pin 0:
  int sensorValue = analogRead(A0);
  // Convert the analog reading (which goes from 0 -
1023) to a voltage (0 - 5V):
  float voltage = sensorValue;{
  // read the input on analog pin 0:
  //int sensorValue = analogRead(A0);
  // Convert the analog reading (which goes from 0 -
1023) to a voltage (0 - 5V):

  // print out the value you read:
  Serial.println(voltage);
```

```
};
  // print out the value you read:
  Serial.println(voltage);
}

      }
```