



Faculty of Information Technology  
Computer Systems Engineering Department

ENCS412, INTERFACING LABORATORY

EXP #8 .Report

# Introduction to Raspberry Pi

Name : Ra'fat Ahmad

ID: 1120521

Section#: 1

Dr. Wasel Ghanem

TA. Eng. Mohammed Mudalal

Date: 17/12/2016

## • **Abstract**

in this report I will talk about Raspberry PI, it's concept it's uses and show how we us it.

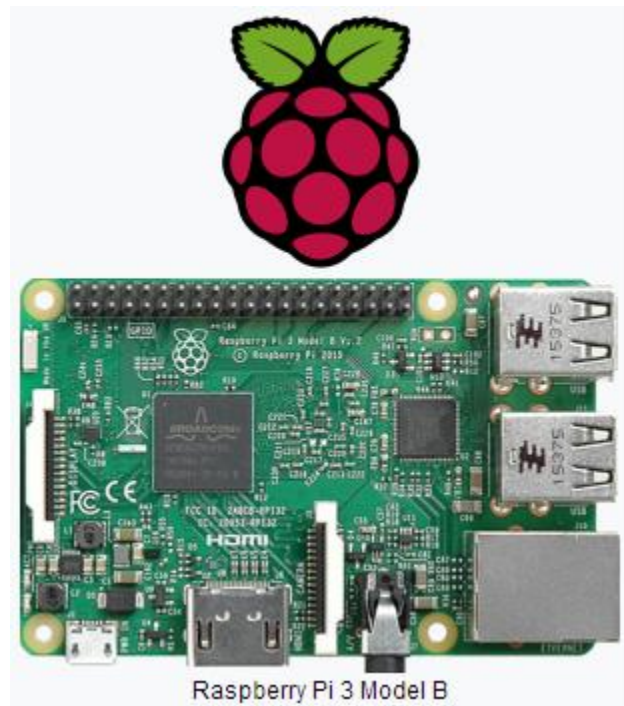
## • **Introduction & Theory**

### **1. Introduction**

In this report we will discuss the basic operations and components that can be used on Raspberry PI , and we will do some task on it to become familiar with it.

### **2. Theory**

The Raspberry Pi is a series of credit card-sized single-board computers developed in the United Kingdom by theRaspberry Pi Foundation to promote the teaching of basic computer science in schools and in developing countries.



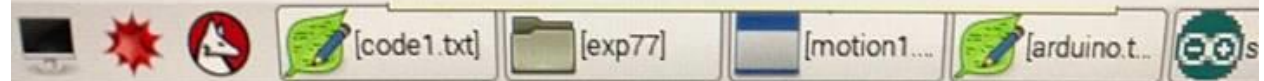
The Raspberry Pi is a computer, very like the computers with which you're already familiar. It uses a different kind of processor you can install several versions of the Linux operating system that look and feel very much like Windows. If you want to, you can use the Raspberry Pi to surf the internet, send an email or write a letter using a word processor. But you can also do so much more.

In 2006, early concepts of the Raspberry Pi were based on the Atmel ATmega644 microcontroller. Its schematics and PCB layout are publicly available. Foundation trustee Eben Upton assembled a group of teachers, academics and computer enthusiasts to devise a computer to inspire children. The computer is inspired by Acorn's BBC Micro of 1981. The Model A, Model B and Model B+ names are references to the original models of the British educational BBC Micro computer, developed by Acorn Computers. The first ARM prototype version of the computer was mounted in a package the same size as a USB memory stick. It had a USB port on one end and an HDMI port on the other.

## • Procedure and Discussion

First of all, we build a system compute the distance between the sensor and an object by sending signals and receive it when it reflected.

) - VNC Viewer



- interfaces
- ordetection.py
- c1.py
- second.py
- c.py
- Exam.py
- New
- p2.py

sketch\_apr19a | Arduino 1.0.1

File Edit Sketch Tools Help

sketch\_apr19a 5

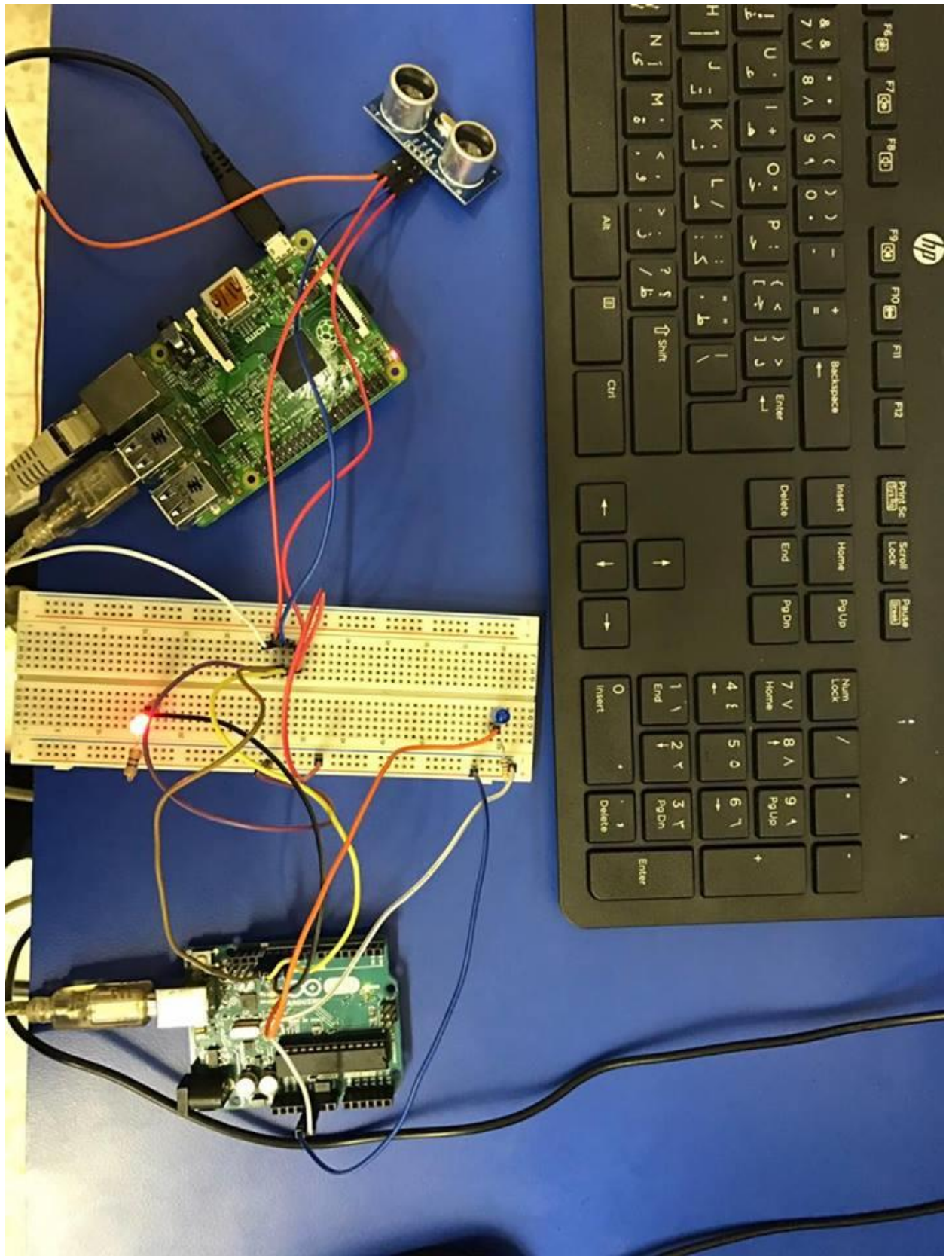
```
Serial.begin(9600);
pinMode(trigPin, OUTPUT);
pinMode(echoPin, INPUT);
pinMode(led, OUTPUT);
pinMode(led2, OUTPUT);
}
void loop() {
  long duration, distance;
  digitalWrite(trigPin, LOW);
  delayMicroseconds(2);
  digitalWrite(trigPin, HIGH);
  delayMicroseconds(10);
  duration = pulseIn(echoPin, HIGH);
  distance = (duration/2) / 29.1;
  if (distance >= 500 || distance <= 0)
    Serial.println("Out of range");
  digitalWrite(led, HIGH);
  digitalWrite(led2, LOW);
}
else {
  Serial.print(distance);
```

37 cm  
57 cm  
Out of range  
42 cm  
6 cm  
1 cm  
1 cm  
2 cm  
2 cm  
2 cm  
5 cm  
103 cm  
104 cm  
Out of range  
56 cm

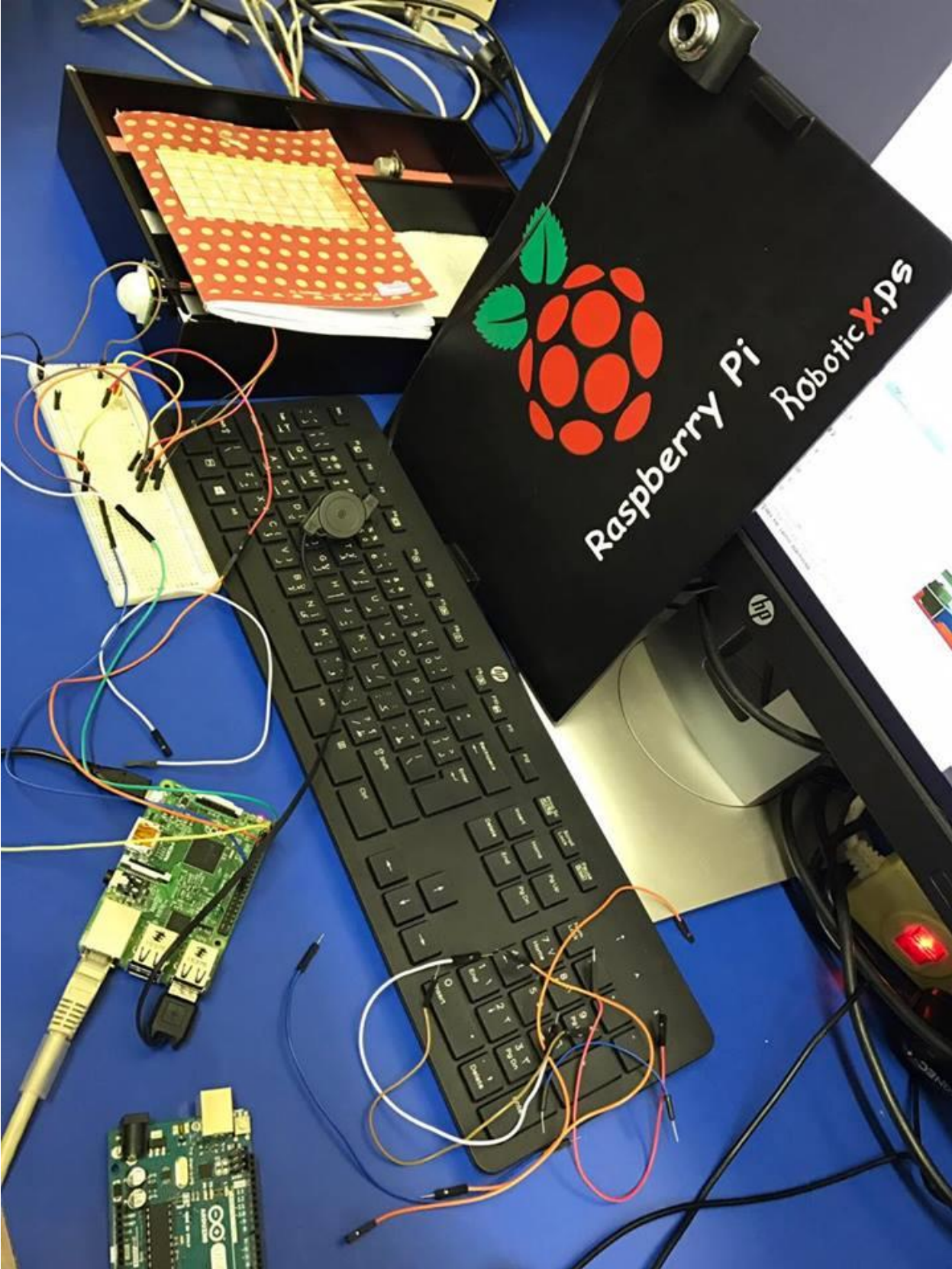
Autoscroll

Done uploading.  
Binary sketch size: 3,916 bytes (of a 32,256 byte maximum)

10 Arduino Uno on AlevIttyACMO



Then we build a system that take photo if there is a motion and save it in the Raspberry PI.







## **Conclusion:**

In this experiment we illustrate the use of **Raspberry PI** and the basic operation used on **it** like reading from sensor and writing tasks to devices such camera, so it is very useful to use for simple application and complex application since it has good resources and it's capable to handle multiple sensors.

## • **References:**

1. Manual Report.
2. [https://en.wikipedia.org/wiki/Raspberry\\_Pi#History](https://en.wikipedia.org/wiki/Raspberry_Pi#History) Accessed At 17-12-2016
3. [https://en.wikipedia.org/wiki/Raspberry\\_Pi](https://en.wikipedia.org/wiki/Raspberry_Pi) Accessed At 17-12-2016