ELEC1601 Week * Lab Report

SID: **** (do not include name. It should be anonymous to avoid bias)

Lab Group: ****

Online student: Yes/No

Introduction

The purpose of this lab session was … (what you think we want you to learn/skills we want you to develop)

Brief description of what you did during the lab session to achieve this

Materials

Describe all components used in lab that are used/briefly describe how they work (include all components: LEDs, resistors, diodes). E.g. under what conditions does an LED produce light, what affects it's brightness. Give examples of real world uses of these components. E.g. an LEDs are increasingly used in actual lighting, but also indicators for digital devices

Connection

Task 1:

Example drawing using fritzing
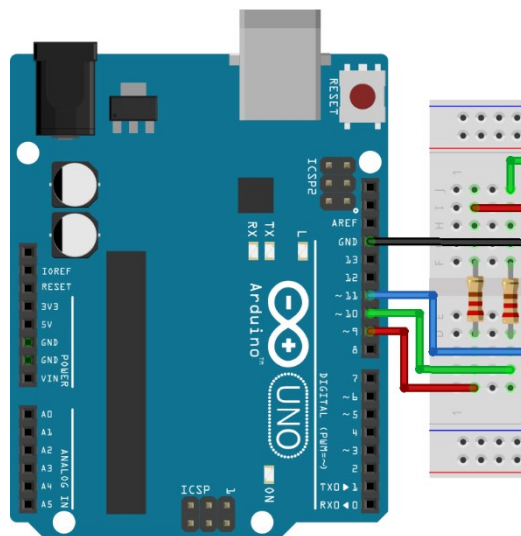
Pseudocode (example)

1) Assign red to pin 9…
2) Initialise red as an OUTPUT
3) Set the red output pin to high
4) Delay for 500 ms
5) Set the red output pin to low
6) Repeat from 3)

Explain what this pseudo code does, how it interacts with your circuit drawing.

Explain any design decisions made (why use LED/how you chose your values to send from Arduino to the LED, why you chose the size of resistor).

Discuss any limitations/successes/unexpected results

Task 2:

Task 3:

Relation to real-world electronics

Description:

How could you use what you learnt in this lab could exists as part of a real devices/products you use (or describe a product you could invent using what you have learn).

E.g. light sensor connected to alarm to remind you to put on sunscreen. (try to elaborate here).

It does not have to be a new product (such light sensors already exist)

You can move beyond an Arduino, but it should be based on related sensors to the lab (e.g. it connects via wifi to your phone and creates a notification)

Connections/Sensors:

Suggest what is required to implement this (use a drawing here again)

Software

Discuss pseudo code required to get it to work (can be very high level (e.g. detect light level -> test against threshold -> send information via wifi to phone)

Risks and Difficulties

Discuss challenges to get it working/what could go wrong (e.g calibration for different environments)/fragility of components.

Also discuss safety issues