



School of Engineering

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**Course: Diploma in Electrical Engineering with Eco-Design Module:  
Electrical System & Distribution Practices (EG1954)**

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**Adm. No:** \_\_\_\_194806T\_\_\_\_ **Date Submitted:** \_\_\_\_\_

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**ASSIGNMENT: Electrical Installation Design (Bed Room)**

Refer to the floor plan in Fig 1. The Bed Room has the following requirement:

- 1) Floor area of 10m x 15m.
- 2) An air conditioner of 12,000BTU.
- 3) 2 light points.
- 4) 2 two- gang power outlet and 2 one-gang power outlets.

You are required to do the following for the Bed Room:

- 1) Draw internal circuit connection in Distribution Board (DB) used to connect the Bed Room – refer to ANNEX A for reference.
- 2) Draw single line diagram for the lighting circuit-- refer ANNEX B for reference.
- 3) Draw single line diagram for the power outlets circuit. Please specify whether you will be using radial or ring circuit and justify your choices refer ANNEX B for reference.
- 4) Draw the circuit (connection) diagram for the lighting and power outlets circuit - refer ANNEX C for reference.
- 5) Draw electrical devices location diagram for the Bed Room- refer ANNEX D for reference.

You are required to submit by 13 Jan 2020 (week 14) the followings:

- 1) A one page reports describing your design.
- 2) Softcopy for all drawings and others  
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Note: Students are encouraged to do research in the internet for relevant details information. Marks will be awarded for clarity and relevant detail information.

#### Legend

- =lighting point                      s=switch
- ⌀ =one-gang power outlet
- ⌀<sup>2</sup> =two-gang power outlet

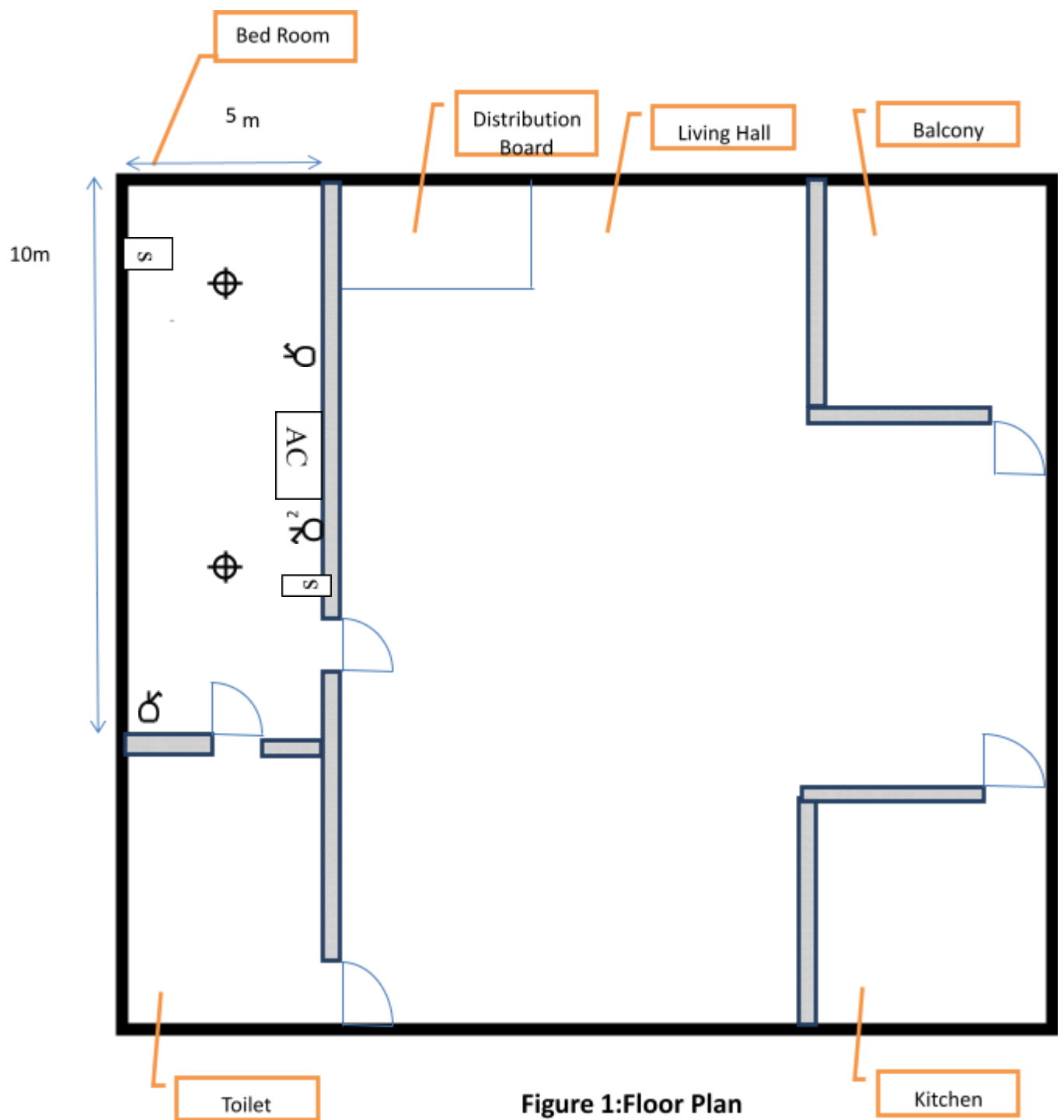
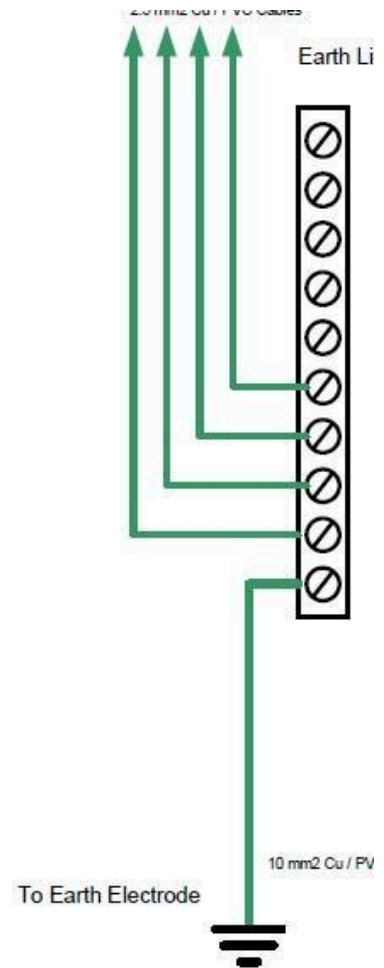
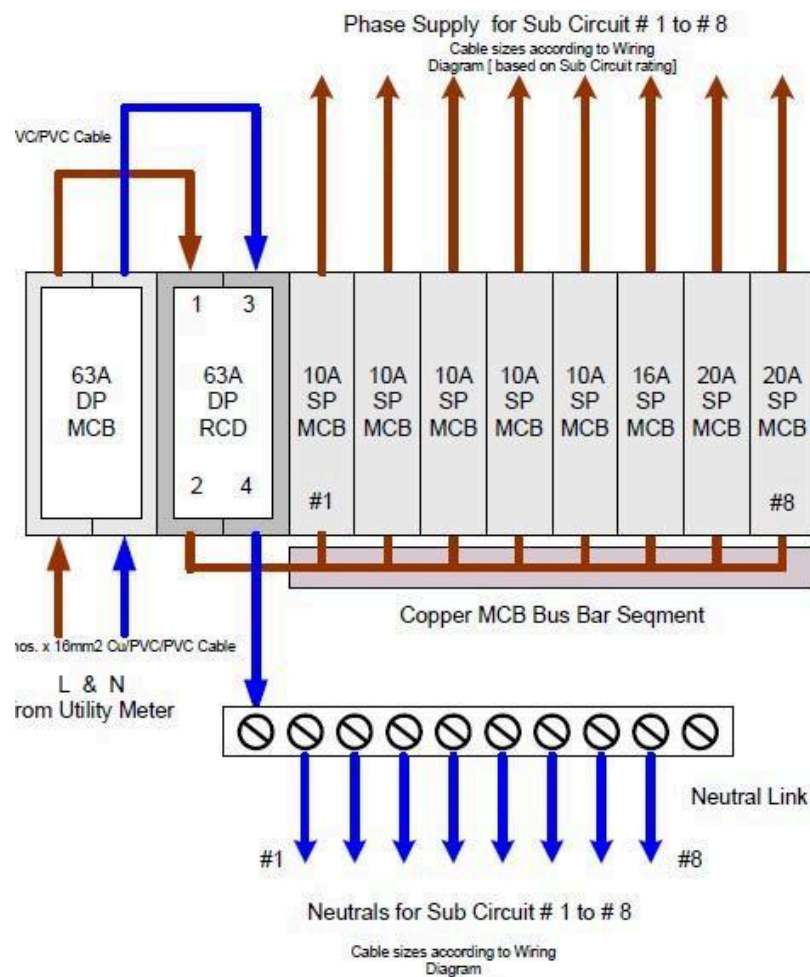
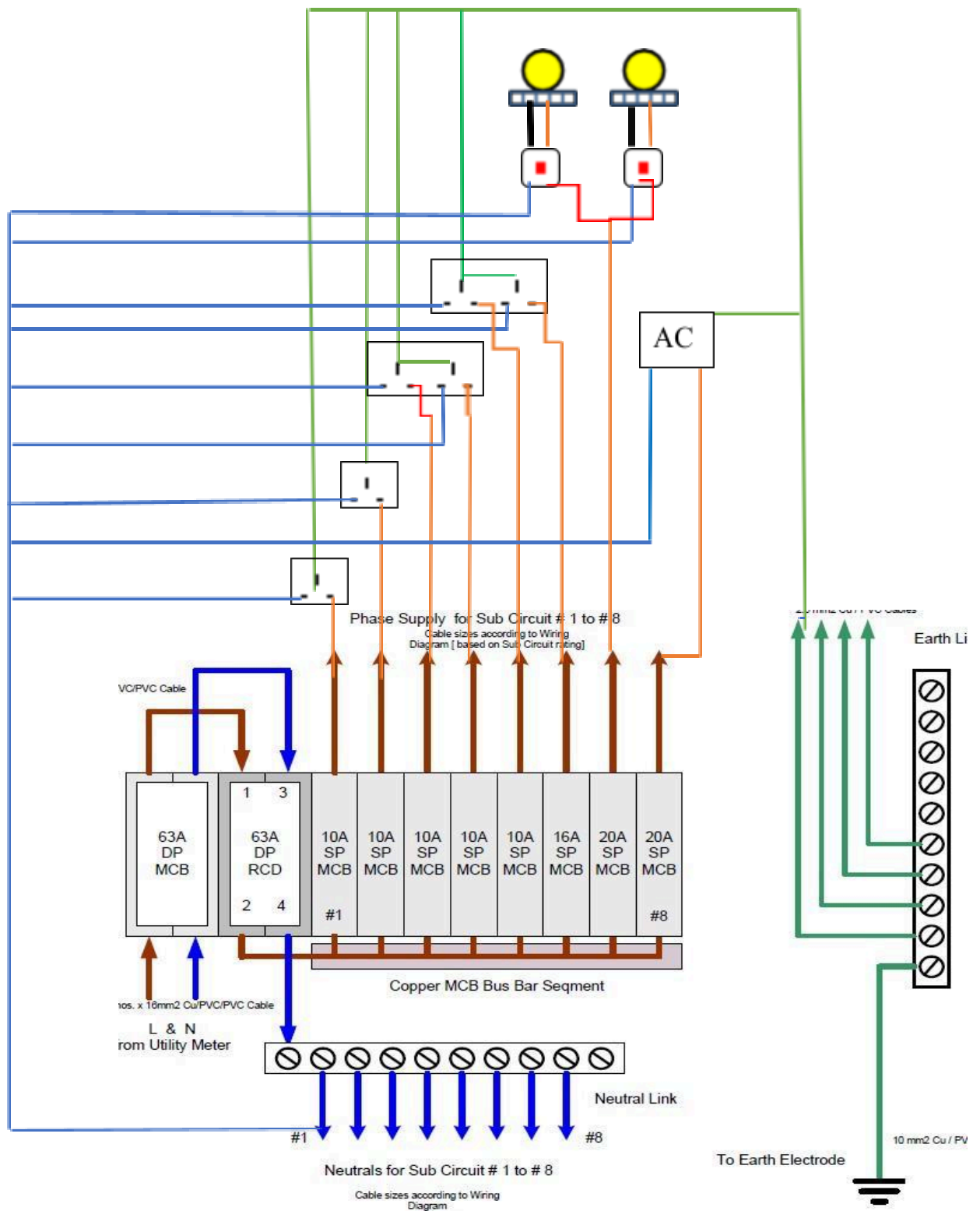


Figure 1:Floor Plan

## ANNEX A





## Single Line Diagram

A single line diagram is a diagram that uses single lines and graphic symbols to indicate the path and components of an electrical circuit. It doesn't show the complete circuit connection.

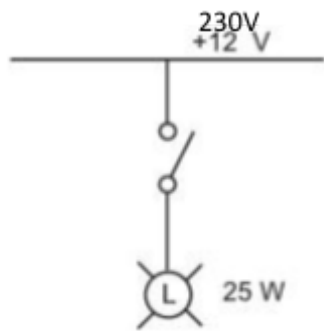
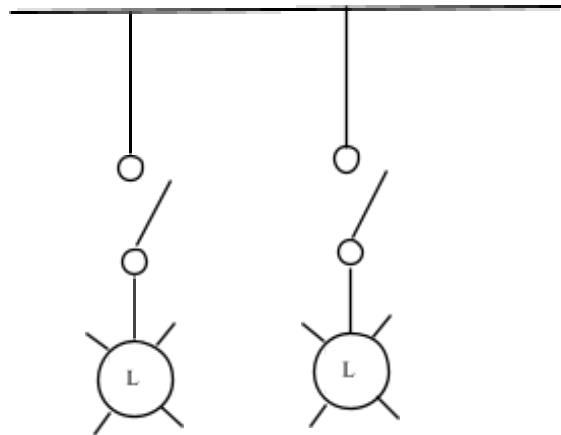


Figure 3—One-line diagram

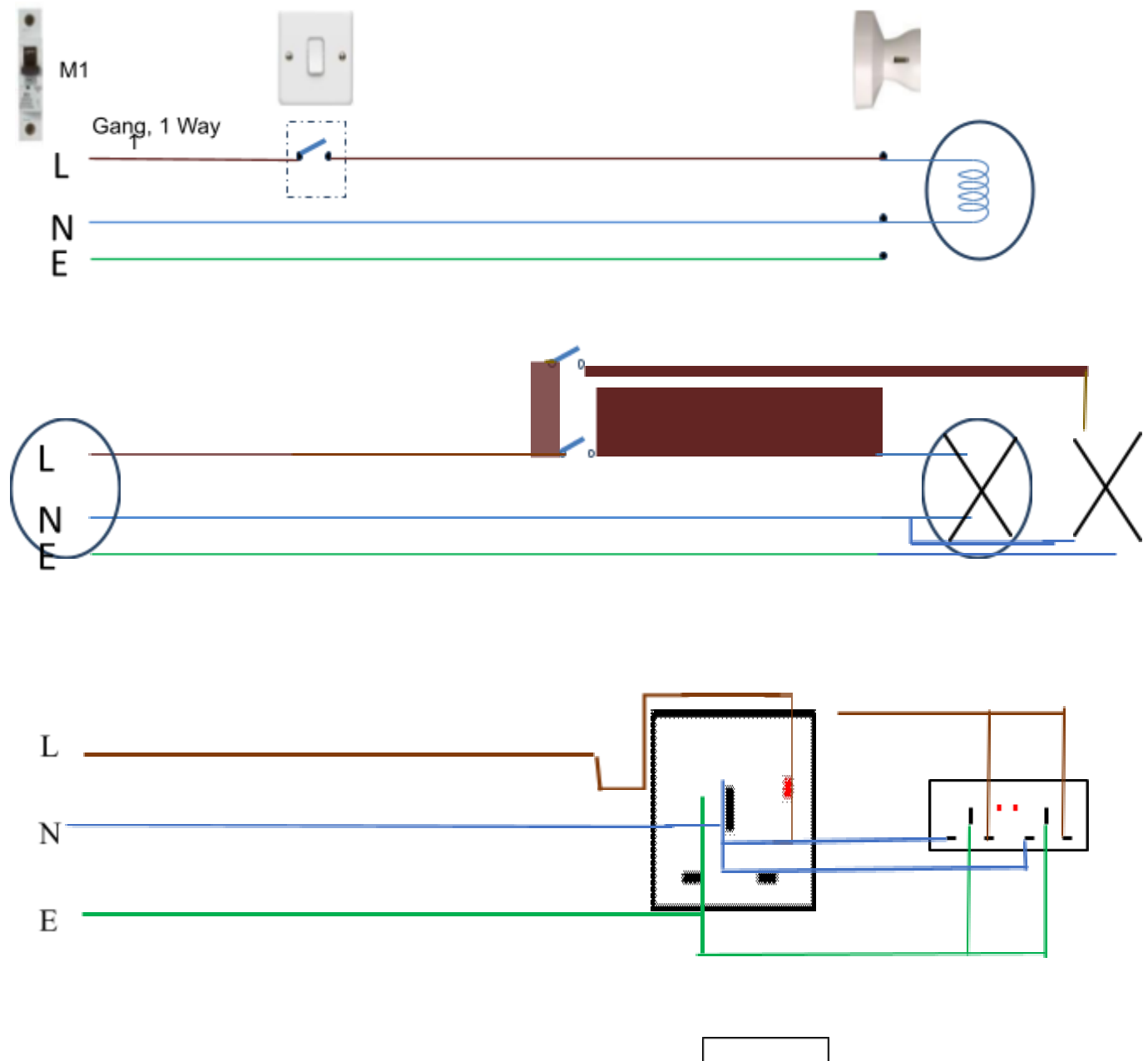


**Radial circuit.** Referring to the drawing, the room has two lights and it is connected this way because if any one of the lighting is down another won't be affected.

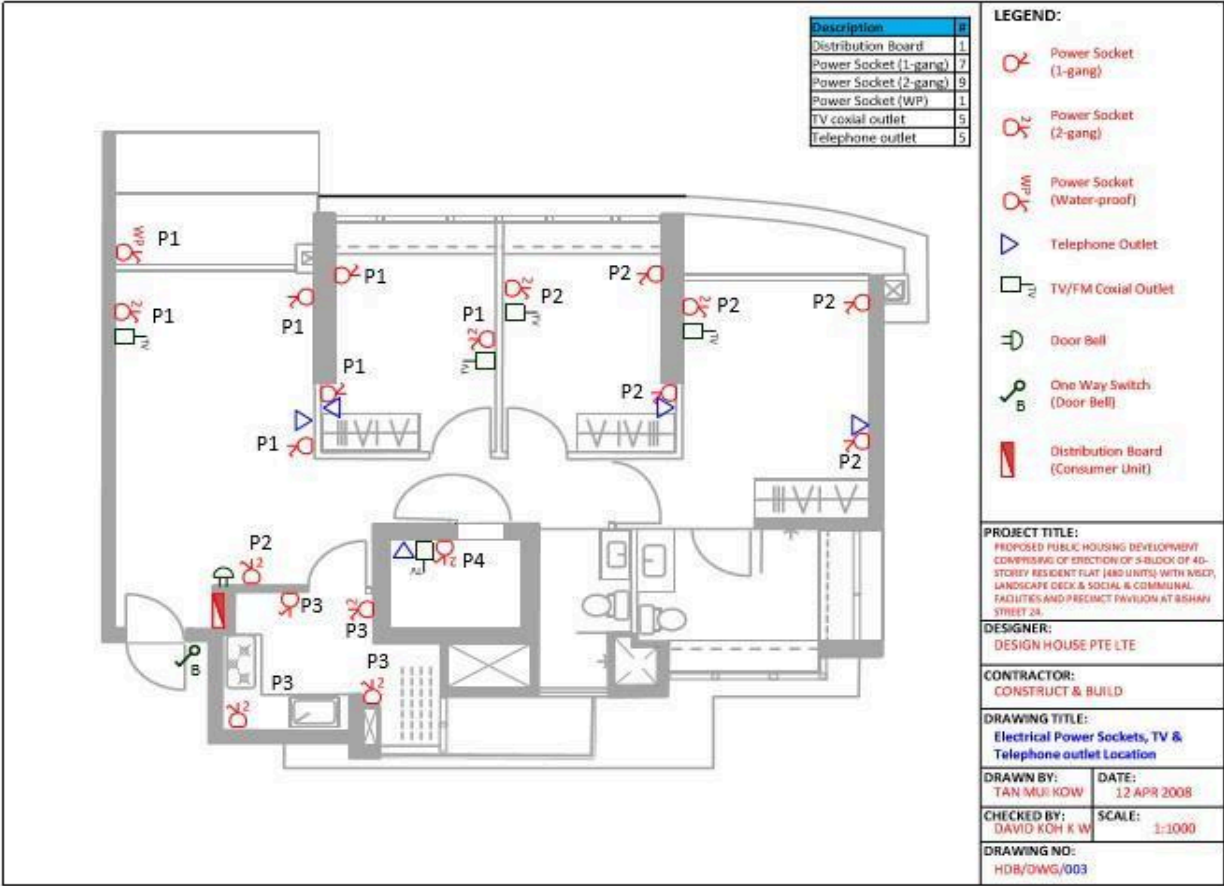
## Circuit (connection) Diagram

A circuit diagram is a diagram that shows the connection of an installation or its component devices or parts. It shows complete circuit connections.

An example of a circuit diagram for the above lighting circuit is:



# Electrical Devices Location Diagram





The objective of this assignment is to create a diagram of a home circuit.

For this assignment, iv chose to use a 5 room HDB flat (bedroom). My bedroom consist of a 2 two-gang and a 1 one-gang socket. Also, I have decided to have 2 lighting points for sufficient lighting in the room and I also decided to use 2 switches at both end of the room to control either light so that it would be convenient for the end user to on and off the lighting if he or she is at the either end of the room.

To add on, I would like to use LED lighting to save energy and also use dimmer switch and touch switch so that end users can brighten up their room or not and also this advocate smart living.

The touch switch will be programmed so that users can also control their switches through their phone or by using artificial intelligence (eg, Alexa)