PHYSICS Project

Electrical circuits

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1. Living Room

Knowing that the area of the living room is 12 m^2: 12 *250= 3000 Lux

3000/ 800= 4

We will use:

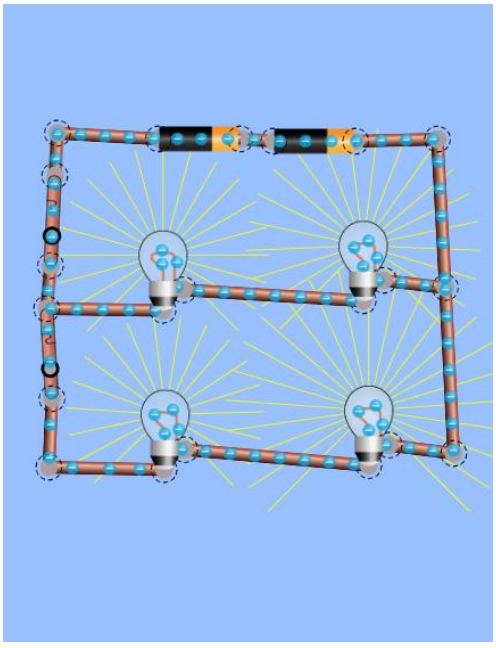
4 LED lamps, each **1.5 JD,** total of **6 JD**. Each two lamps turns on using the same switch.

2 automatic switches each **of 1 JD,** total of **2 JD**

2 Sockets each of **0.5,** total of **1 JD**

30 m wires that cost 30 JD

The total cost for the living room = 6+2+1+30= 39 JD



2. Kitchen

Knowing that the area of the kitchen is 10 m^2: 10 *250= 2500 Lux

2500/ 1200= 2 lamps

We will use:

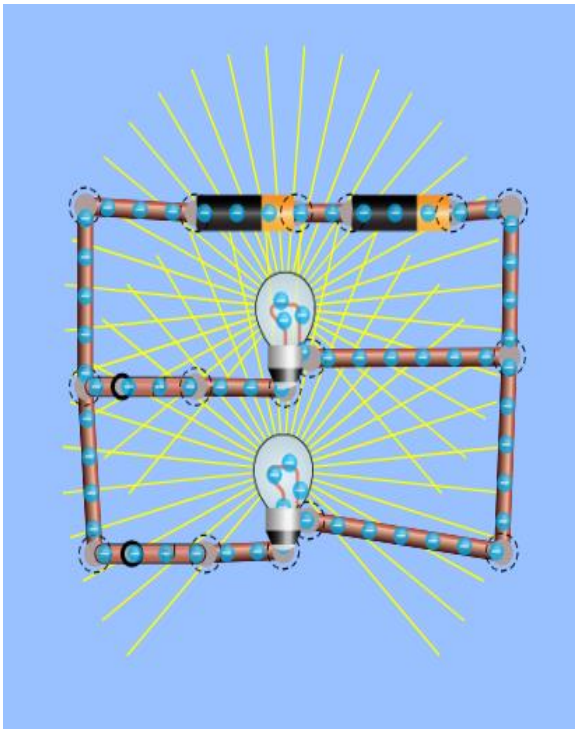
2 LED lamps, each **1.5 JD,** total of **3 JD**. Each lamp turns on by using a different switch.

2 automatic switches each **of 1 JD,** total of **2 JD**

2 Sockets each of **0.5,** total of **1 JD**

24 m wires that cost 24 JD

The total cost for the Kitchen= 6+2+1+24= 33 JD



3. Bathroom

Knowing that the area of the kitchen is 6 m^2: 6 *250= 1500 Lux

1500/1400= 1 lamp

We will use:

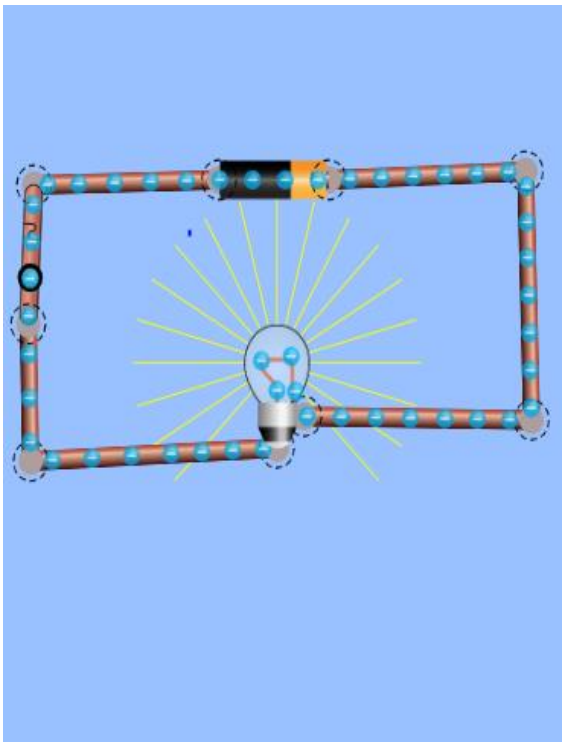
1 CFL lamp, **1 JD,** total of **1 JD**. The lamp turns on by using a switch.

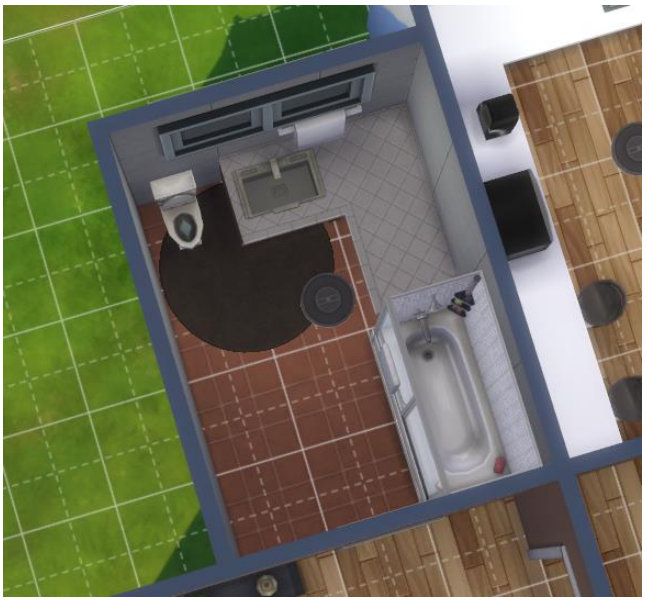
1 automatic switches each **of 1 JD,** total of **1 JD**

1 Sockets each of **0.5,** total of **0.5 JD**

8 m wires that cost 8 JD

The total cost for the living room = 1+1+0.5+8= 10.5 JD





4. Bedroom

Knowing that the area of the bedroom is 10 m^2: 10 *250= 2500 Lux

2500/ 1400= 2 lamps

We will use:

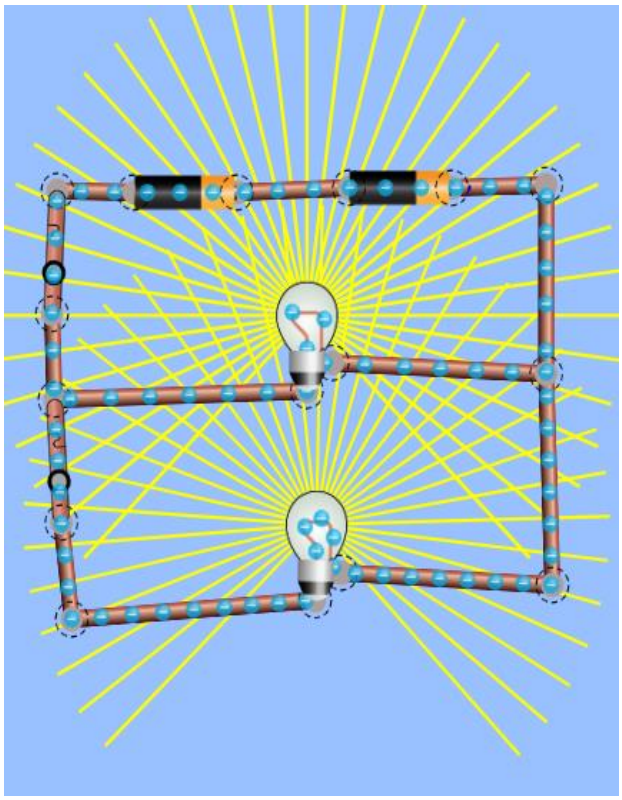
2 LED lamps, each **1.5 JD,** total of **3 JD**. Each lamp turns on by using a different switch.

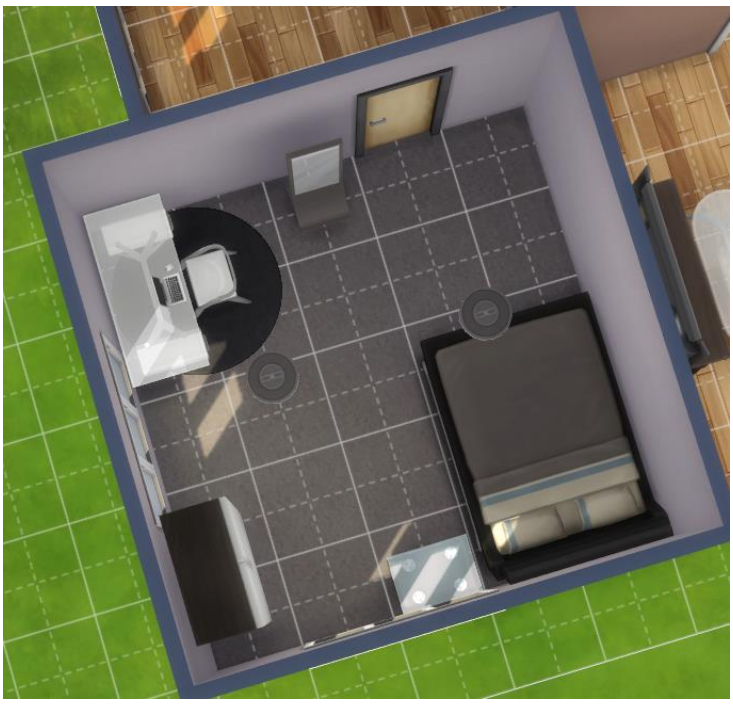
2 automatic switches each **of 1 JD,** total of **2 JD**

2 Sockets each of **0.5,** total of **1 JD**

24 m wires that cost 24 JD

The total cost for the living room = 6+2+1+24= 33 JD





Total cost for constructing the lighting of the four rooms = 132 JD

Power usage in the living room= 4 lamps* 0.07 KW= 0.28 KW per hour

In average, we light the living room for 3 hours a day

Energy used = power * time

= 0.28*3= 0.84 KW per day

Power usage in the kitchen= 2 lamps* 0.07 KW = 0.14 KW per hour

In average, we light the kitchen for 3 hours a day

Energy used = power * time

= 0.14*3= 0.42 KW per hour

Power usage in the bedroom= 2 lamps* 0.07= 0.14 KW per hour

In average, we light the bedroom for 2 hours a day

Energy used = power * time

= 0.14*2= 0.28 KW= 0.28 KW per day

Power usage in the bathroom= 1 CFL lamp* 0.1 KW= 0.1 KW per hour

In average, we light the bathroom for 1 hour a day

Energy used = power * time

= 0.1*2= 0.2 KW= 0.2 KW per day

Total usage in one day = 0.84+0.42+0.28+0.2= 1.74 KW /day

In one month= 30*1.74 = 52.2 KW

Total monthly cost= 5+ 0.12 (52.2)= 11.264 JD