

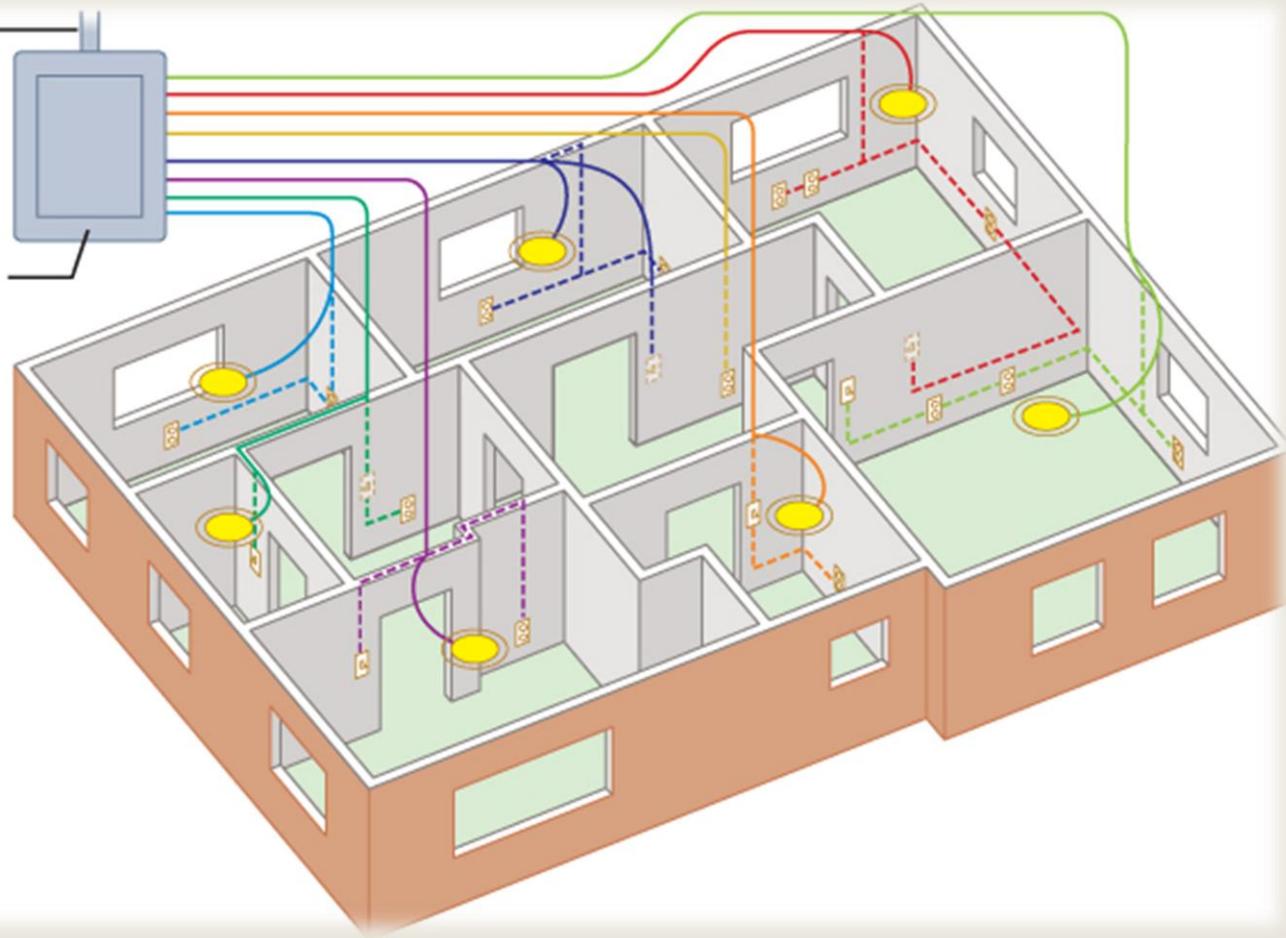
Practical Wiring for a Building has Many Parallel Circuits

- ▶ A house, apartment building, school, or any building must have many electrical outlets, because many electrical devices are used in it.
- ▶ As a result it is much safer and more practical to install many separate parallel circuits in the building to avoid a large amount of current flowing through a common wire which would become extremely hot and would most certainly start a fire.
- ▶ However, all of the current flowing into a building comes from a power company. These companies use large cables designed to carry large current without becoming too hot.
- ▶ These large cables are connected to many different circuits inside the house in a box labeled the “circuit panel”.

A Look at a Wired Building

large cable
from power
company

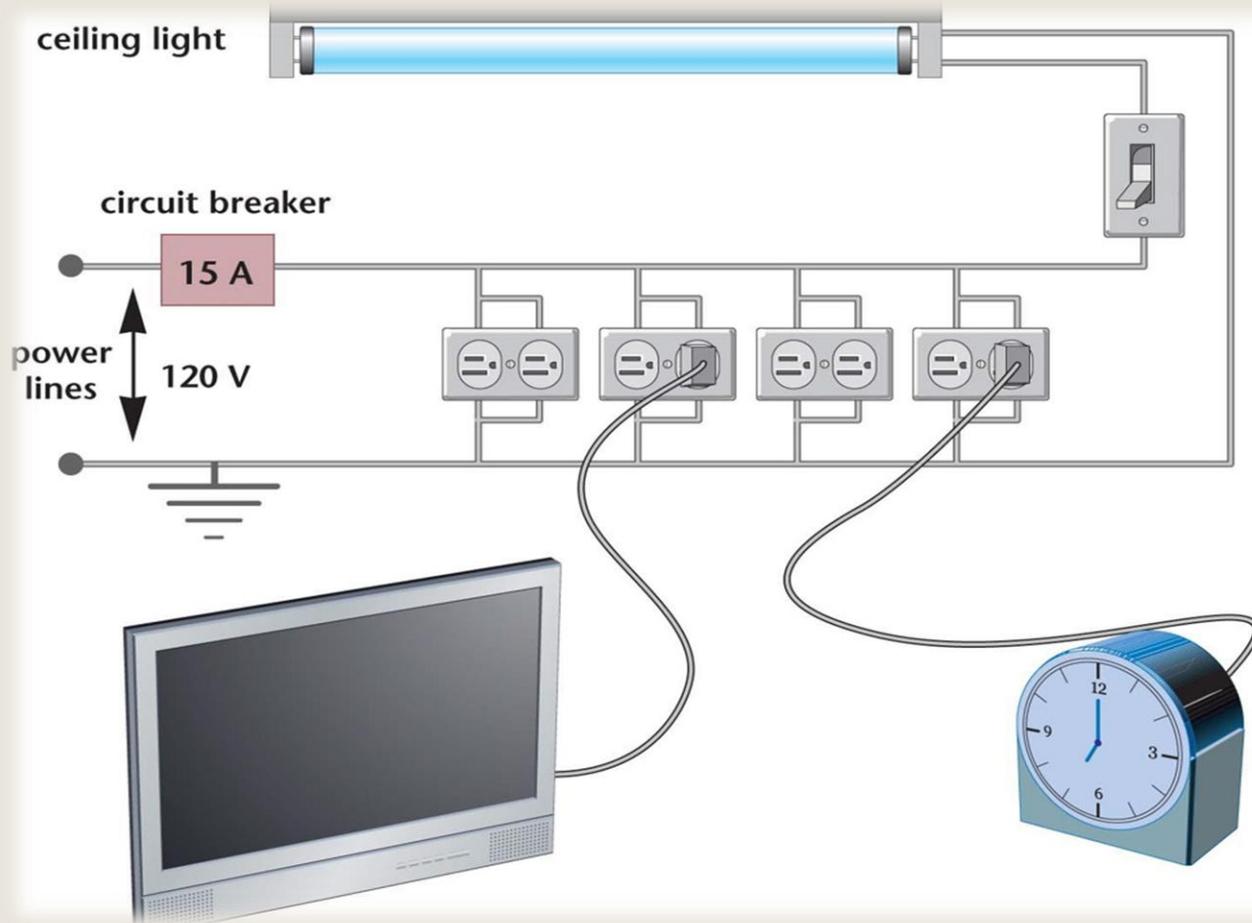
circuit panel



Circuit Breakers

- ▶ All houses have circuit breakers designed to control the flow of electricity.
 - ▶ A circuit breaker automatically shuts off if a circuit is carrying too much current and prevents a fire from starting.
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A Look at Circuit Breakers



Fuses

- ▶ A fuse is an older safety device that opens a circuit if the current gets too high.
- ▶ Once opened, the fuse must be replaced.

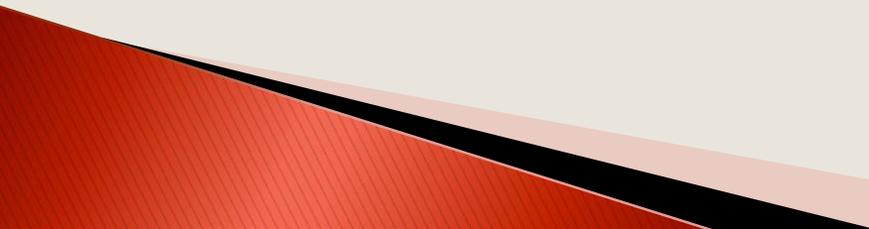


Safety with Larger Cords

- ▶ Some appliances require more current in order to operate.
- ▶ You might have seen these electrical devices in your home designed to prevent the wires from becoming too hot.



Safety with Grounding

- ▶ Grounding of some wires is also a safety feature.
 - ▶ Of the two wires for every parallel circuit, one is grounded at the source.
 - ▶ Any excess current will go to the ground.
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Safety with Outlets

- ▶ There are three types of outlets commonly found in homes:
 1. Two-holed outlets found in older homes and buildings.
 2. Three-holed outlets found in newer homes (and required by law). The 3rd hole is for grounding excess current.
 3. GFI (ground fault interrupter) outlets which are very sensitive and commonly found in bathrooms or other rooms that are within 2m of water.

A Look at Common Outlets

A



B



C

