Finite Charge/Discharge times of RC circuit smooth out pulsating DC from the Rectifying circuit.

Types of Rectifiers:

- The effect of a single diode rectifying circuit - called a half-wave rectifier - produces the 60 Hz pulsating DC signal that must be smoothed by the filter circuit.
- The action of this circuit removes 1/2 of the AC component from the Power Supply input and increases the difficulty of smoothing.
- The full-wave rectifier saves both halves of the AC input and makes the signal easier to smooth by the filter circuit.
Full-Wave Rectifiers

The full-wave rectifier circuit requires a center tapped transformer in order to function. Transformers are usually the most expensive part of a power supply; with center tapped transformers more expensive than single transformers.

For these reasons, an alternate full-wave circuit is usually used, called a full-wave bridge rectifier.

The operation of all of these circuits is based on the rectifying property of semiconductor diodes.

We saw these effects in the Workbench exercise done earlier.

A plot of diode voltage versus diode current is shown on the next slide.