

The Exciting World of Robotics

Introduction to Robotics

- What is Engineering?
- What is a Robot?
- Controllers
- Actuators
- Sensors
- Remotely Operated vs. Autonomous

What is Engineering?

- An ENGINEER is somebody who designs and builds something using science.
- What are some types of engineers?



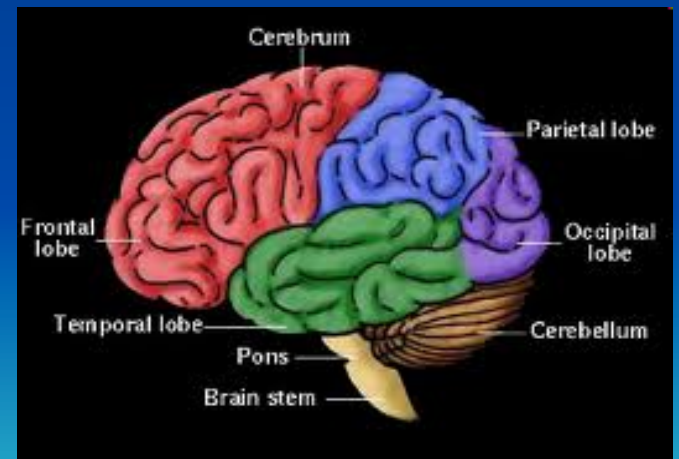
What is a Robot?



- A ROBOT is anything that has the following 3 things:
 - Controller
 - Sensor(s)
 - Actuator(s)

Controllers

- Something that makes decisions and processes information.
- Here are examples of different types of Controllers



Actuators



- These are things that allow movement, they light up or make noise.



- Examples of Actuators that we use daily.

Sensors



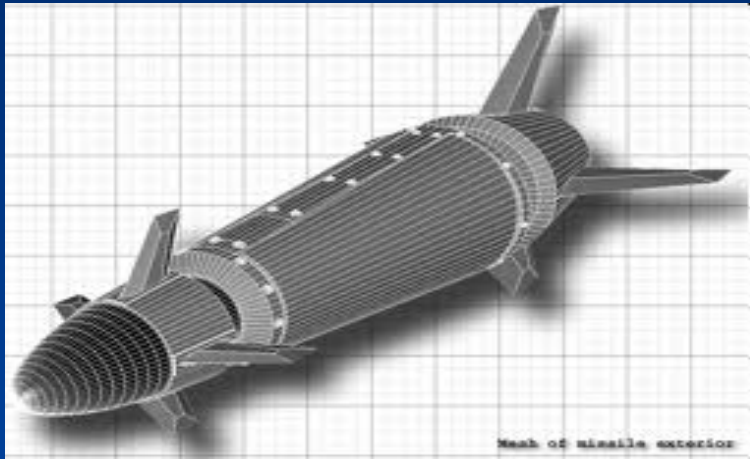
- Sensors interact with the external (outside) environment through...
 - Sight
 - Touch
 - Sound
 - Examples include...
 - Sound sensor: human ear
 - Motion sensor: supermarket doors
 - Light sensor: street lights
 - Touch sensor: touch pads/screens



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 - Moves things, lights up or makes noise
 - Sensor(s)
 - Interacts with the outside environment
 - Sight, Touch, Sound

Remote Controlled vs. Autonomous



- What is Autonomy? It can do it on it's own
- What is Controlled? It is being told what to do
- What are some advantages to being Autonomous?
- What are disadvantages of being Autonomous?

Lego Robotics



Building Your Robot

- Get into groups of 2 or 3
- Following the instructions inside your kit.
- Work together (Communicate)
- Have fun while building
- Your final product will represent a Robot Rover that will travel on a planet to collect data.