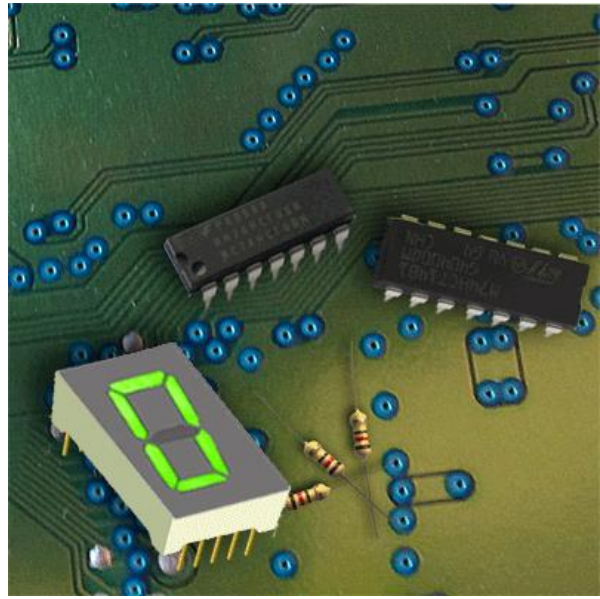
Introduction to Robotics

What is Robotics

Robotics is an interdisciplinary branch of engineering and science that includes mechanical engineering, electronic engineering, computer science, Communication Engineering, Mathematics and others. Robotics deals with the design, construction, operation, and use of robots, as well as computer systems for their control, sensory feedback, and information processing.

What is Robotics

Robotics is an interdisciplinary branch of engineering and science that includes mechanical engineering, electronic engineering, computer science, Communication Engineering, Mathematics and others. Robotics deals with the design, construction, operation, and use of robots, as well as computer systems for their control, sensory feedback, and information processing.

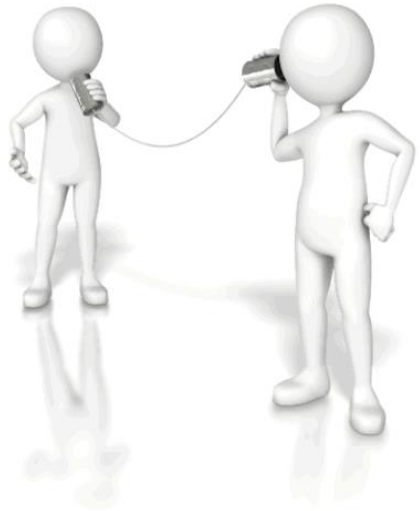


What is Robotics

Robotics is an interdisciplinary branch of engineering and science that includes mechanical engineering, electronic engineering, computer science, Communication Engineering, Mathematics and others. Robotics deals with the design, construction, operation, and use of robots, as well as computer systems for their control, sensory feedback, and information processing.

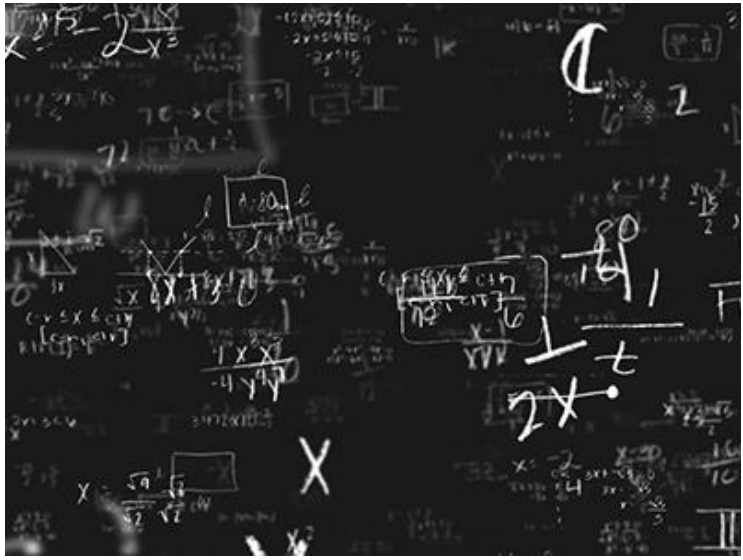
What is Robotics

Robotics is an interdisciplinary branch of engineering and science that includes mechanical engineering, electronic engineering, computer science, Communication Engineering, Mathematics and others. Robotics deals with the design, construction, operation, and use of robots, as well as computer systems for their control, sensory feedback, and information processing.



What is Robotics

Robotics is an interdisciplinary branch of engineering and science that includes mechanical engineering, electronic engineering, computer science, Communication Engineering, Mathematics and others. Robotics deals with the design, construction, operation, and use of robots, as well as computer systems for their control, sensory feedback, and information processing.



What is Robotics

Robotics is an interdisciplinary branch of engineering and science that includes mechanical engineering, electronic engineering, computer science, Communication Engineering, Mathematics and others. Robotics deals with the design, construction, operation, and use of robots, as well as computer systems for their control, sensory feedback, and information processing.

Robotics is the study of robots. Robots are machines that can be used to do jobs. Some robots can do work by themselves. Other robots must always have a person telling them what to do.

What is Robot

"A reprogrammable, multifunctional manipulator designed to move material, parts, tools, or specialized devices for performing different tasks."

Wiki- A **robot** is a machine—especially one programmable by a computer— capable of carrying out a complex series of actions automatically.

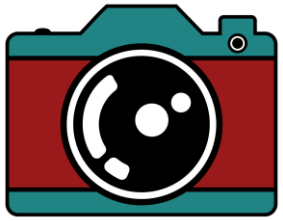
A robot is a machine that has the ability to mimic and augment human efficiency.

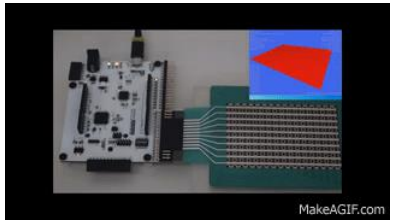
A machine or device that operates automatically or by remote control to perform various tasks.

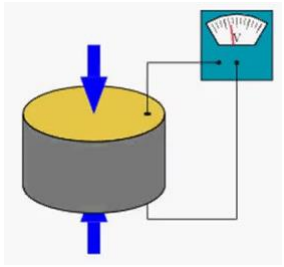
Characteristics of Robots

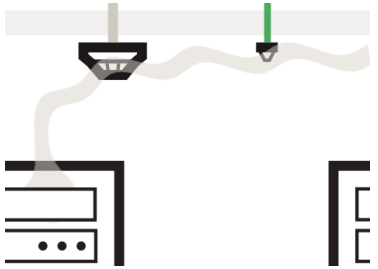
There are four essential characteristics robot must have:

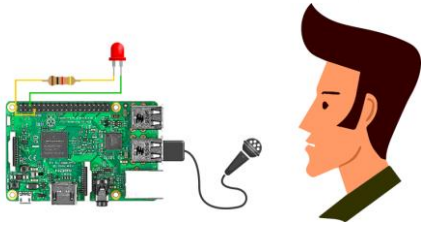
- ✓ **Sensing** First of all robot would have to be able to sense its surroundings. It would do this in ways that are similar to the way that you sense your surroundings. Such as camera (eyes), touch and pressure sensors (hands), chemical sensors (nose), microphone and sonar sensors (ears), and taste sensors (tongue) will give your robot awareness of its environment.

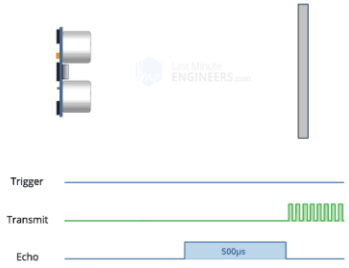












Characteristics of Robots

There are four essential characteristics robot must have:

- ✓ **Sensing** First of all your robot would have to be able to sense its surroundings. It would do this in ways that are not similar to the way that you sense your surroundings. Giving your robot sensors: light sensors (eyes), touch and pressure sensors (hands), chemical sensors (nose), hearing and sonar sensors (ears), and taste sensors (tongue) will give your robot awareness of its environment.

- ✓ **Movement** A robot needs to be able to move around its environment. Whether rolling on wheels, walking on legs or propelling by thrust a robot needs to be able to move.

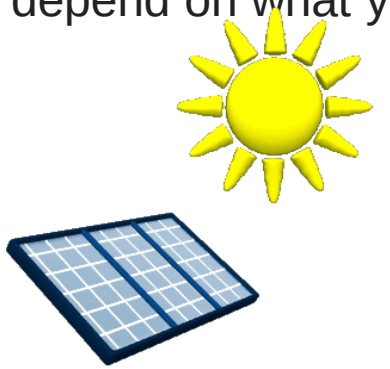
Characteristics of Robots

There are four essential characteristics robot must have:

- ✓ **Sensing** First of all your robot would have to be able to sense its surroundings. It would do this in ways that are not similar to the way that you sense your surroundings. Giving your robot sensors: light sensors (eyes), touch and pressure sensors (hands), chemical sensors (nose), hearing and sonar sensors (ears), and taste sensors (tongue) will give your robot awareness of its environment.

- ✓ **Movement** A robot needs to be able to move around its environment. Whether rolling on wheels, walking on legs or propelling by thrusters a robot needs to be able to move.

- ✓ **Energy** A robot needs to be able to power itself. A robot might be solar powered, electrically powered, battery powered. The way your robot gets its energy will depend on what your robot needs to do.



Characteristics of Robots

There are four essential characteristics robot must have:

- ✓ **Sensing** First of all robot would have to be able to sense its surroundings. It would do this in ways that are not similar to the way that you sense your surroundings. Giving your robot sensors: light sensors (eyes), touch and pressure sensors (hands), chemical sensors (nose), hearing and sonar sensors (ears), and taste sensors (tongue) will give your robot awareness of its environment.

- ✓ **Movement** A robot needs to be able to move around its environment. Whether rolling on wheels, walking on legs or propelling by thrusters a robot needs to be able to move.

- ✓ **Energy** A robot needs to be able to power itself. A robot might be solar powered, electrically powered, battery powered. The way your robot gets its energy will depend on what your robot needs to do.

- ✓ **Intelligence** A robot needs some kind of “intelligence." This is where programming enters the pictures. A programmer is the person who gives the robot its “intelligence”

So what is a robot?

Well it is a system that contains sensors, control systems, manipulators, power supplies and software all working together to perform a task. Designing, building, programming and testing a robots is a combination of physics, mechanical engineering, electrical engineering, structural engineering, mathematics and computing.

Some basic robots that are practice in education

Android control Robot

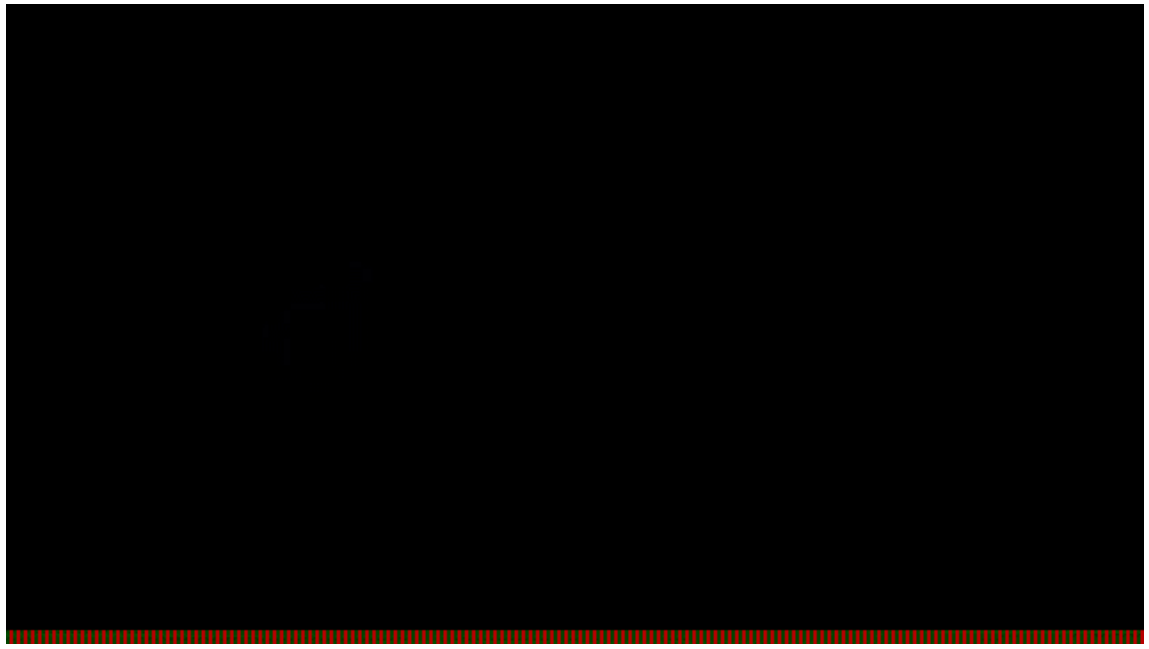
Obstacle avoiding Robot

Line following Robot

Some Humanoid Robot

Some Humanoid Robot

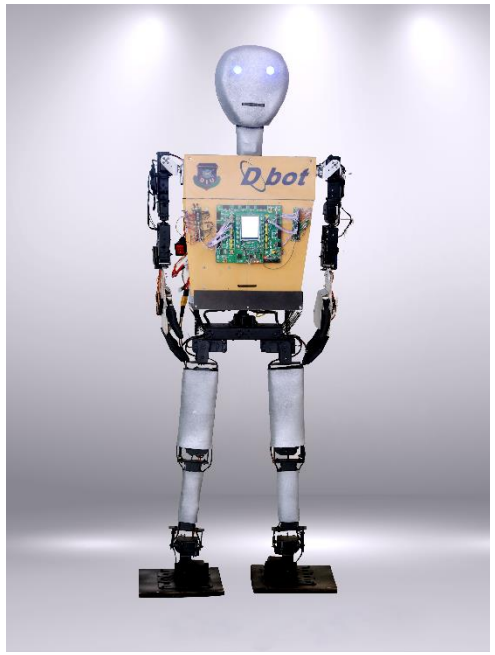
Nao



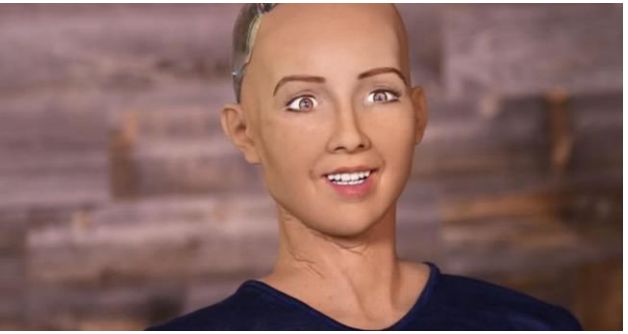
Some Humanoid Robot

valkyrie

Some Humanoid Robot



Dbot



Sophia

Thank You