

**Dr.SNS RAJALAKSHMI COLLEGE OF ARTS AND SCIENCE
(Autonomous)**

Accredited by NAAC - UGC with 'A+ Grade (Cycle IV)
(Recognised by UGC, Approved by AICTE & Affiliated to Bharathiar University)
Coimbatore- 49



**DEPARTMENT OF COMPUTER SCIENCE
(ARTIFICIAL INTELLIGENCE & ROBOTICS)**

What is a robot?

Dr. S.Amudha, M.Sc., M.Phil., Ph.D.,

Assistant Professor,

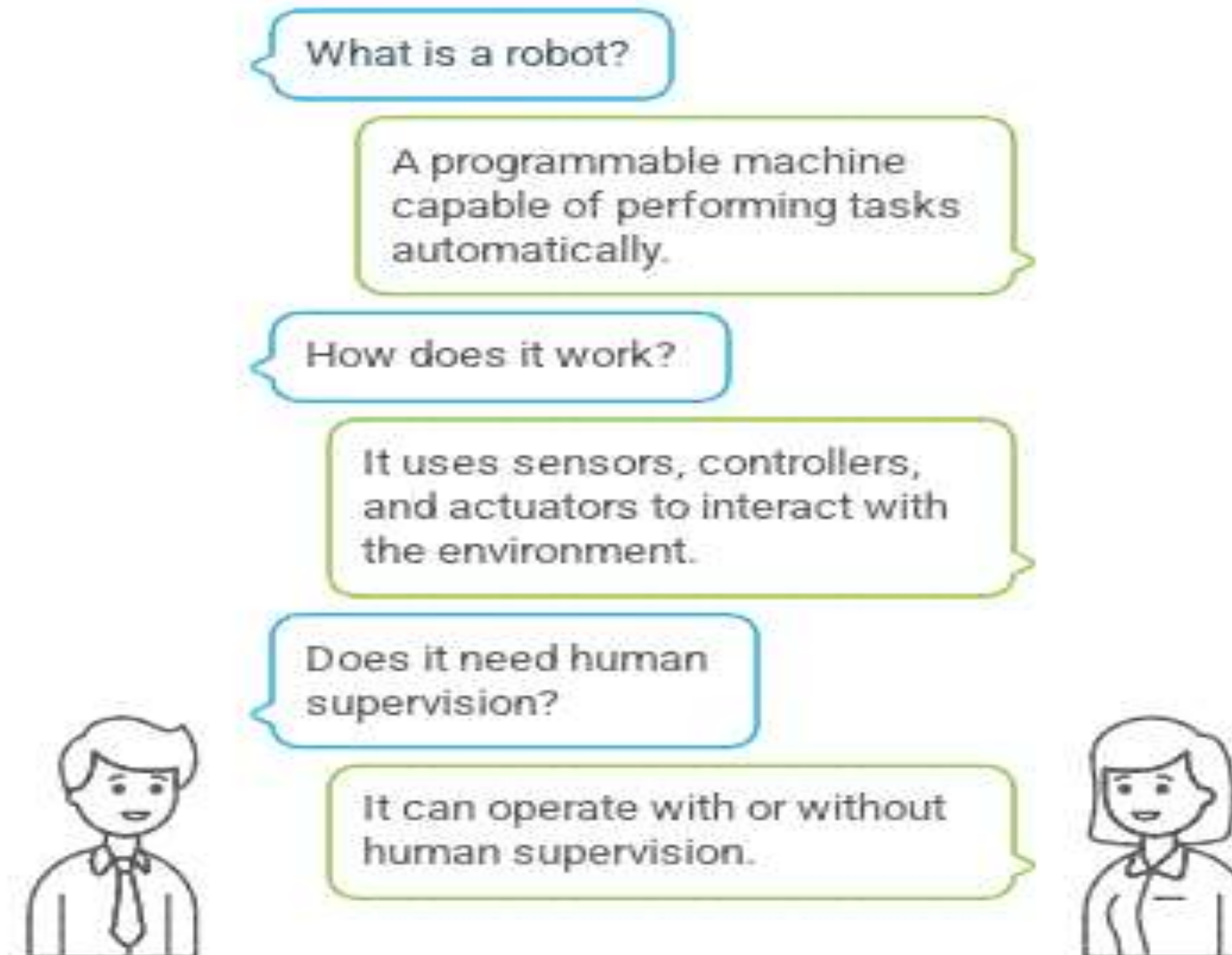
Department of Computer Science (AI&DS)

DT- Stages in robot



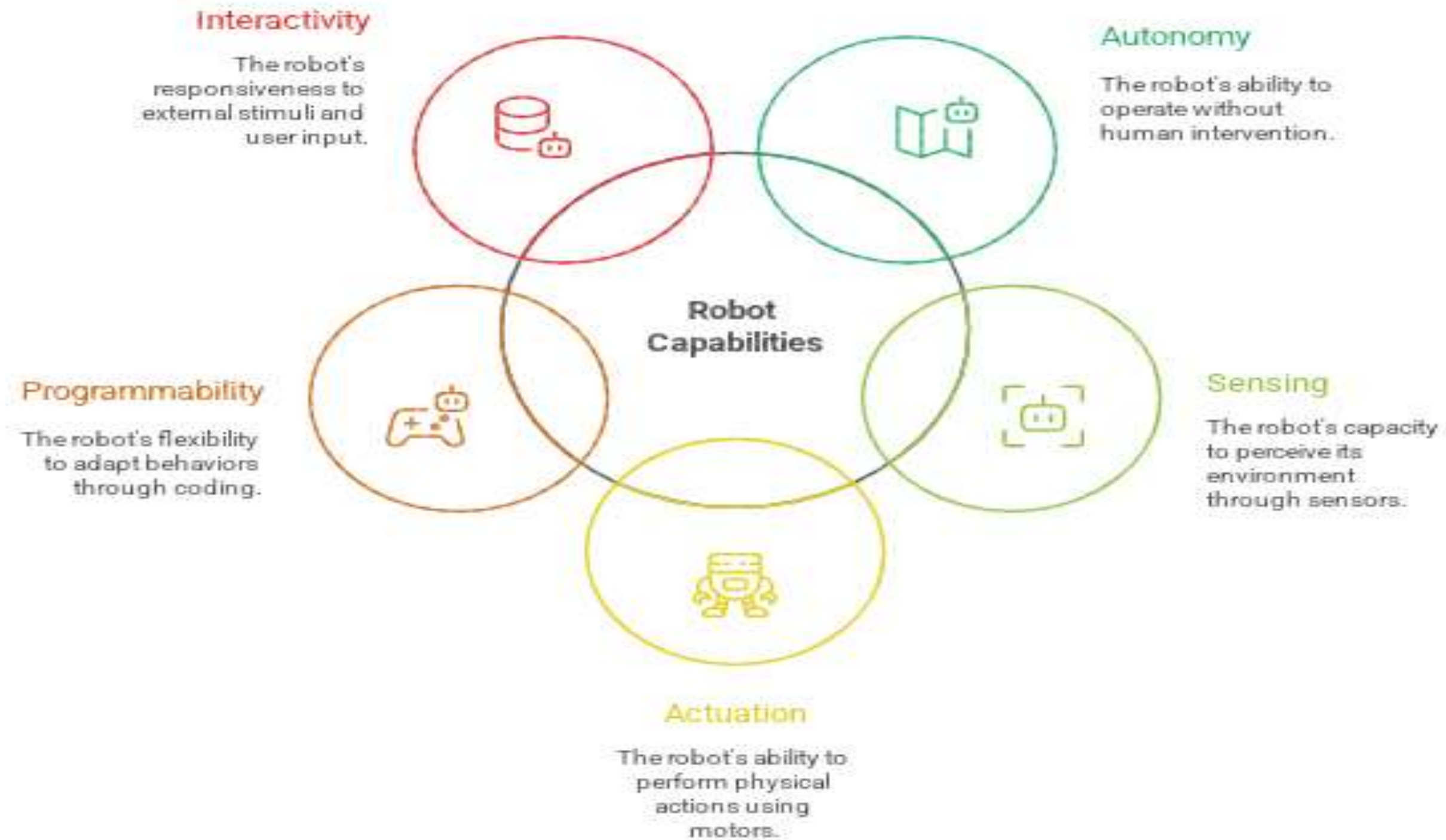
Stage	Purpose / Description	Key Output
Empathize	Understand users' needs through research and observation.	User insights / pain points
Define	Analyze insights and clearly frame the problem.	Problem statement / POV
Ideate	Generate creative ideas and possible solutions.	List of ideas / concepts
Prototype	Build simple models or mockups to visualize solutions.	Prototype / draft model
Test	Test prototypes with users to gather feedback and improve.	Feedback / improved solution

What is a Robot?



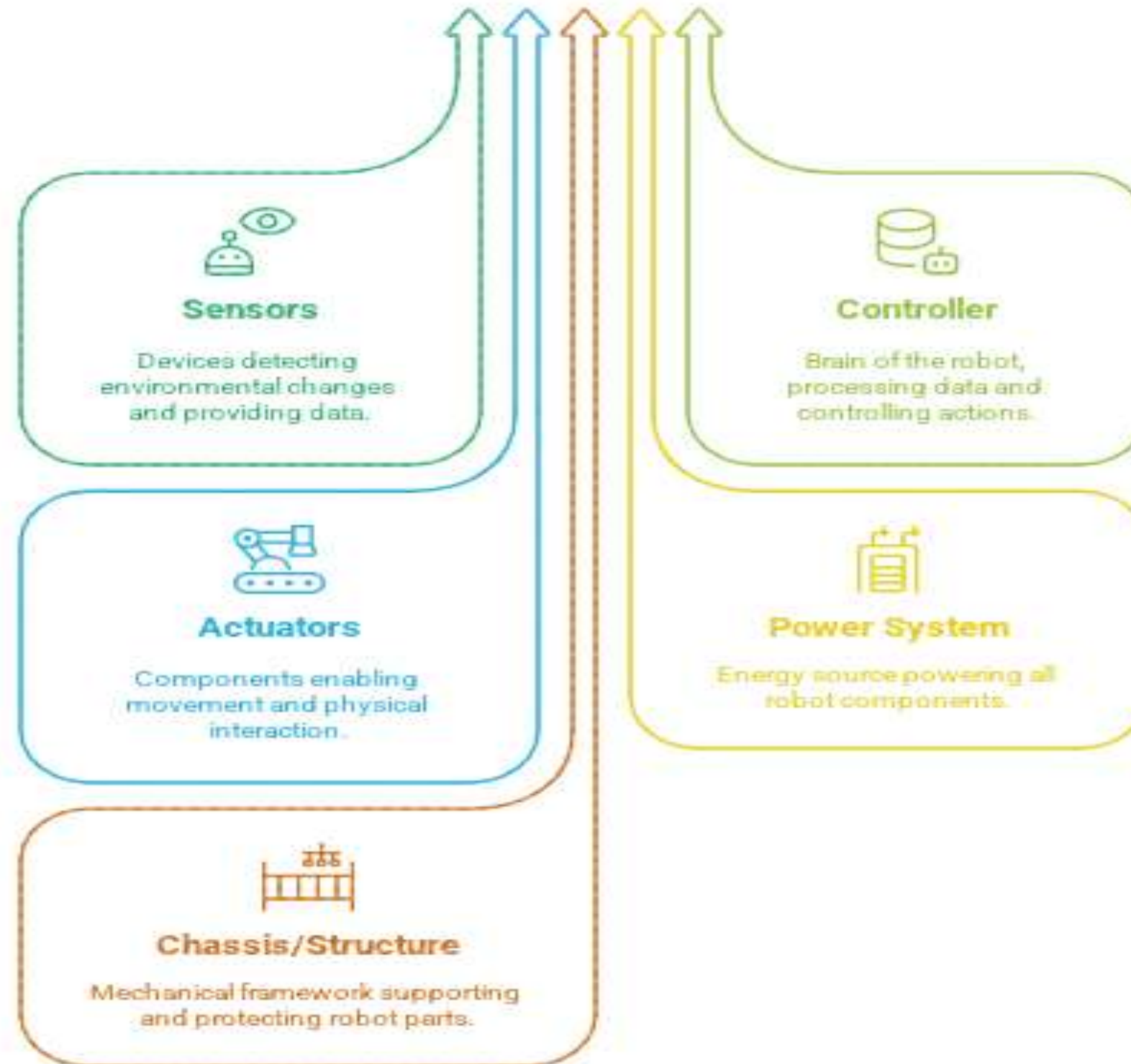
- **Autonomy:** Ability to perform tasks independently.
- **Sensing:** Detects surroundings using sensors.
- **Actuation:** Performs actions through motors and mechanisms.
- **Programmability:** Behaviors can be coded and modified.
- **Interactivity:** Responds to the environment or user input.

Core Robot Capabilities

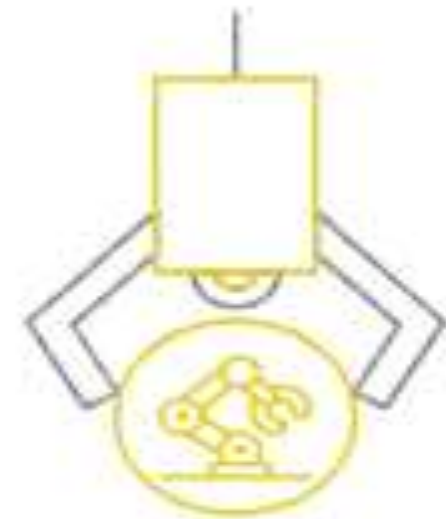


Components of a Robot

Building Blocks of a Robot

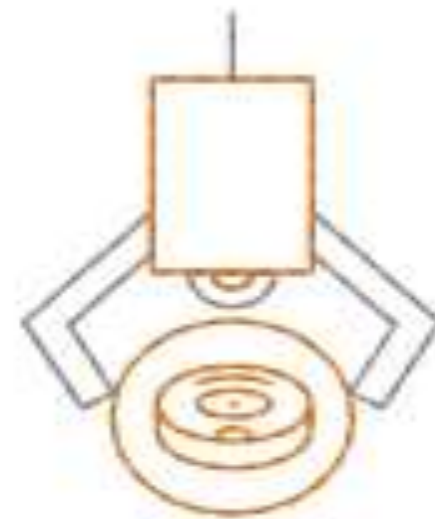


Robot Types



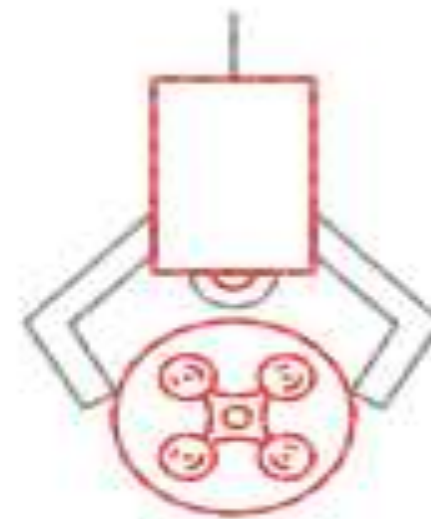
Industrial Robots

Used in manufacturing, welding, and assembly processes.



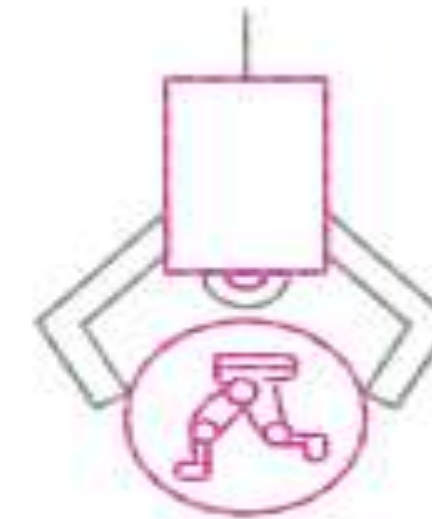
Service Robots

Perform cleaning, delivery, and healthcare tasks.



Mobile Robots

Includes drones, AGVs, and autonomous vehicles.



Humanoid Robots

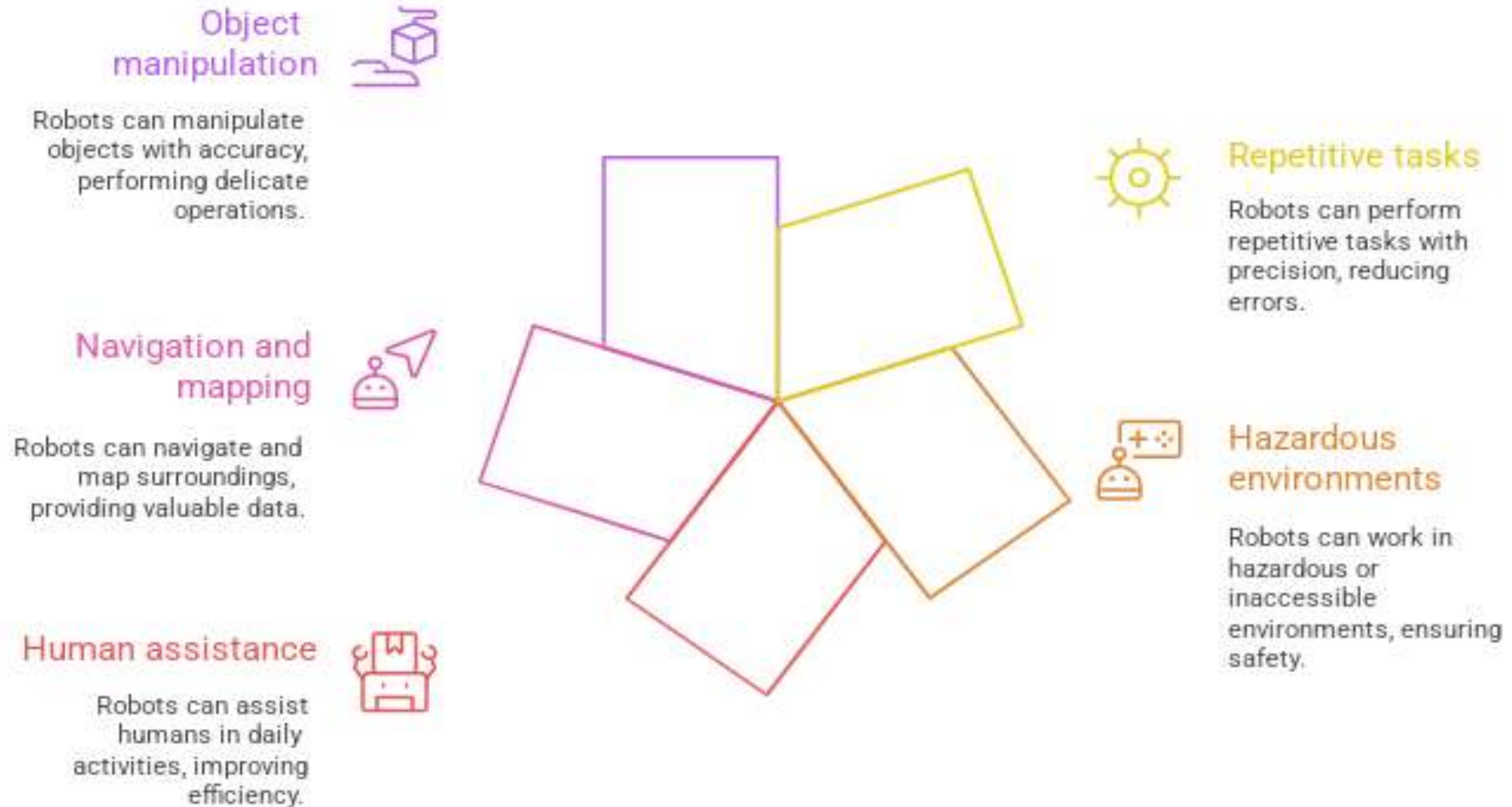
Designed with human-like movement and behavior.



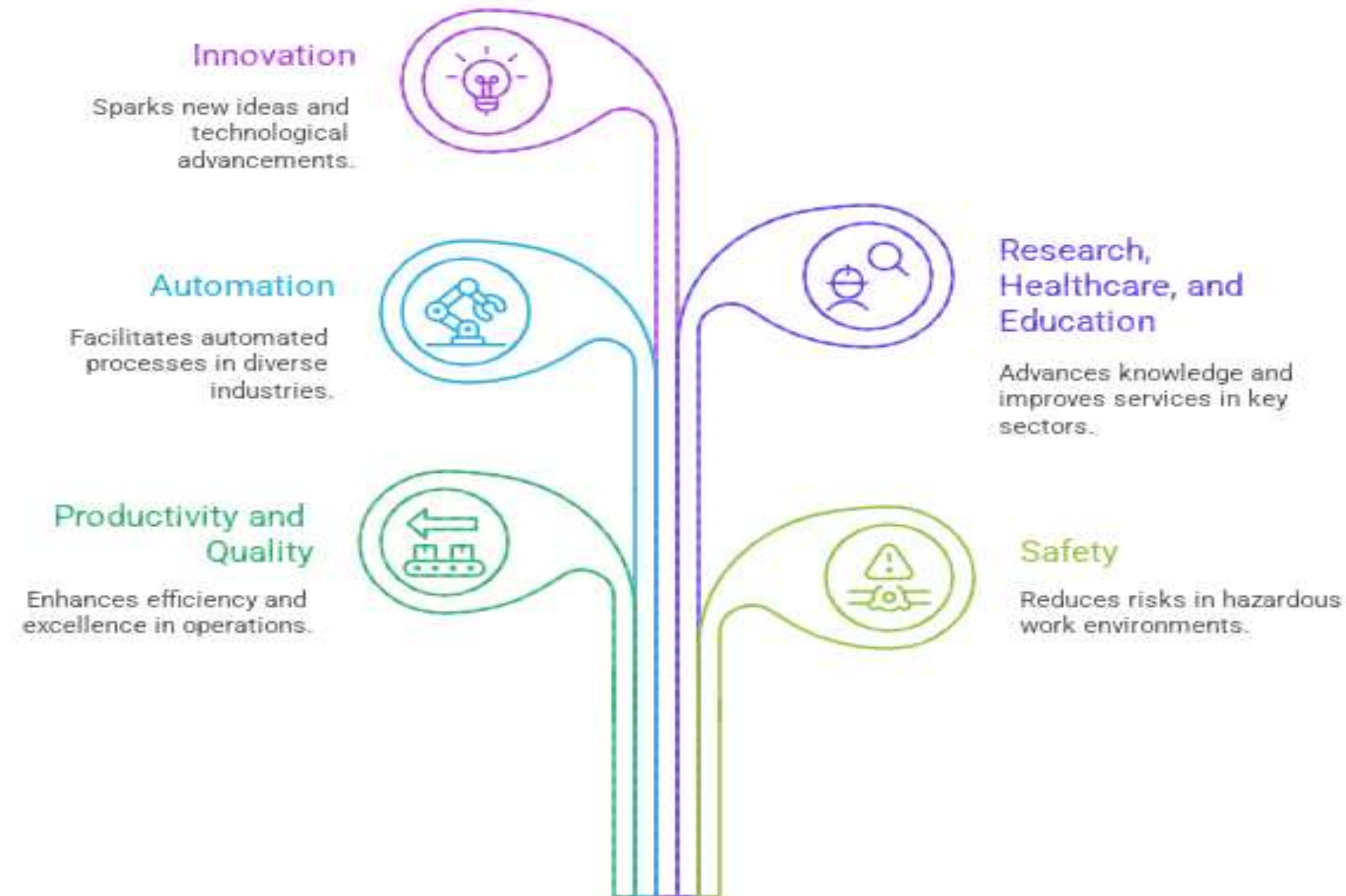
Educational Robots

Used as training and learning tools in education.

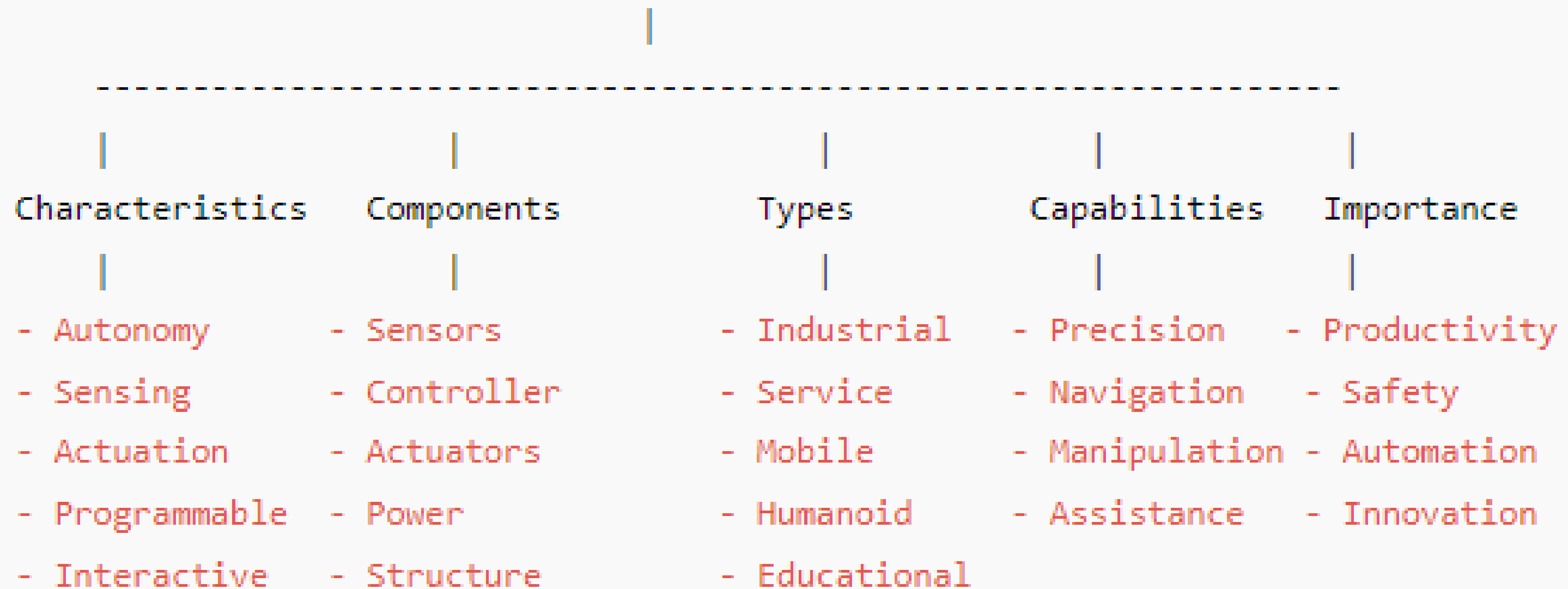
Robot capabilities



Unveiling the Multifaceted Impact of AI



WHAT IS A ROBOT?



1. What is a robot?

- a) A mechanical toy
- b) A programmable machine that performs tasks automatically
- c) A computer game
- d) A remote-control device

Answer: b)

2. Which component allows a robot to sense its environment?

- a) Actuator
- b) Battery
- c) Sensor
- d) Chassis

Answer: c)

3. Industrial robots are mainly used for:

- a) Entertainment
- b) Manufacturing and assembly
- c) Playing games
- d) Cooking

Answer: b)

4. Which is a key characteristic of a robot?

- a) Only manual control
- b) Always humanoid
- c) Programmability
- d) Only remote-operated

Answer: c)

5. Why are robots important?

- a) They reduce safety
- b) They slow down work
- b) c) They increase productivity and automation
- d) They increase manual labour

Answer: c)

THANK YOU