

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

**Accredited by NAAC - UGC with 'A+ Grade (Cycle IV)  
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Coimbatore- 49**



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

## **Software Setup**

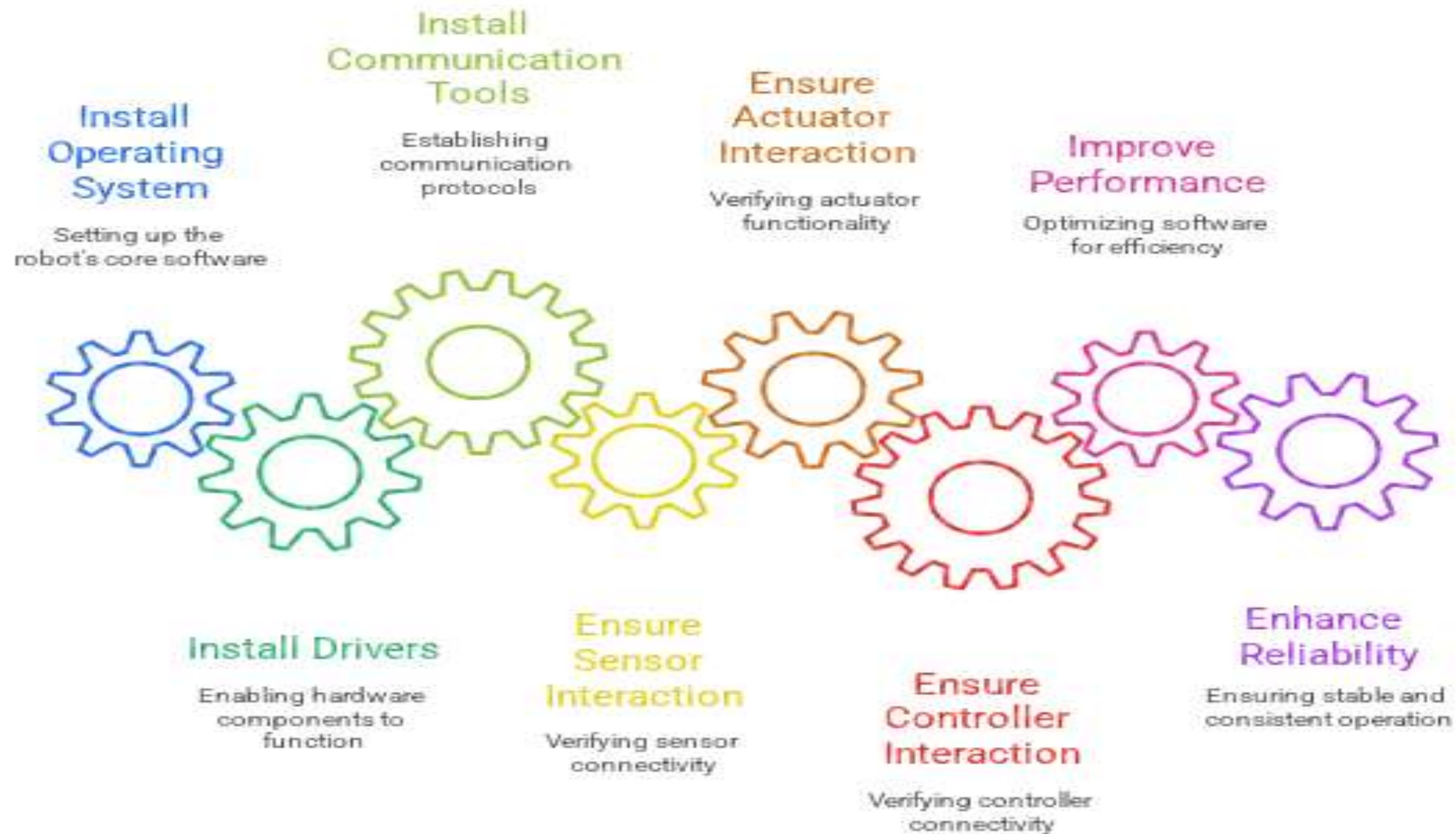
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# DT- Stages in Software Setup

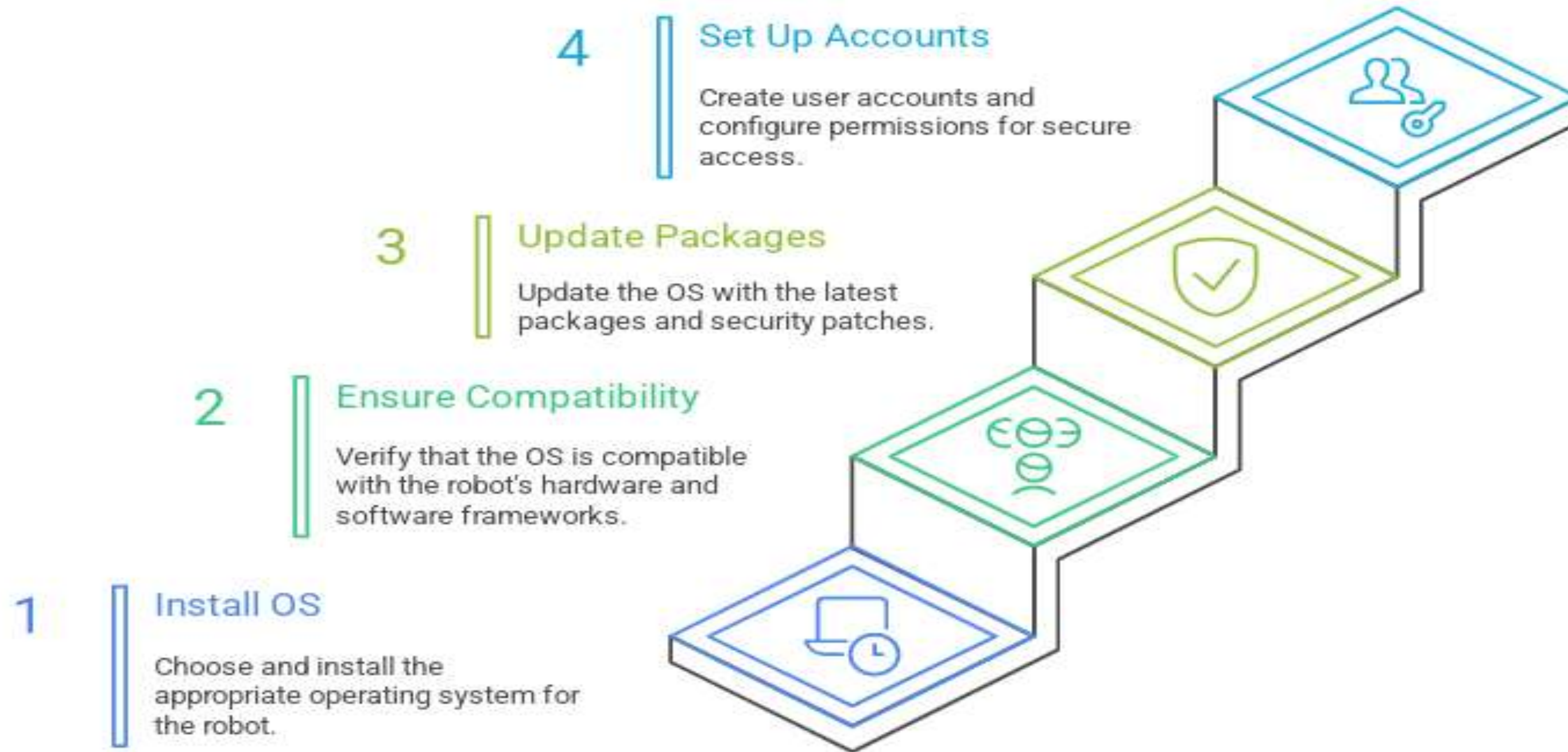


Stage	Short Description	Example Output
Empathize	Understand user needs for easy and error-free software installation.	Users struggle installing ROS due to missing drivers.
Define	Frame the problem clearly.	"Make software setup simpler and more reliable for beginners."
Ideate	Generate ideas to solve the setup issue.	Auto-installer script, setup wizard, step-by-step guide.
Prototype	Build a basic version of the solution.	Create a simple ROS auto-install shell script.
Test	Test solution with users and refine.	Users install ROS successfully → improve UI/steps.

## Robot Software Setup Process

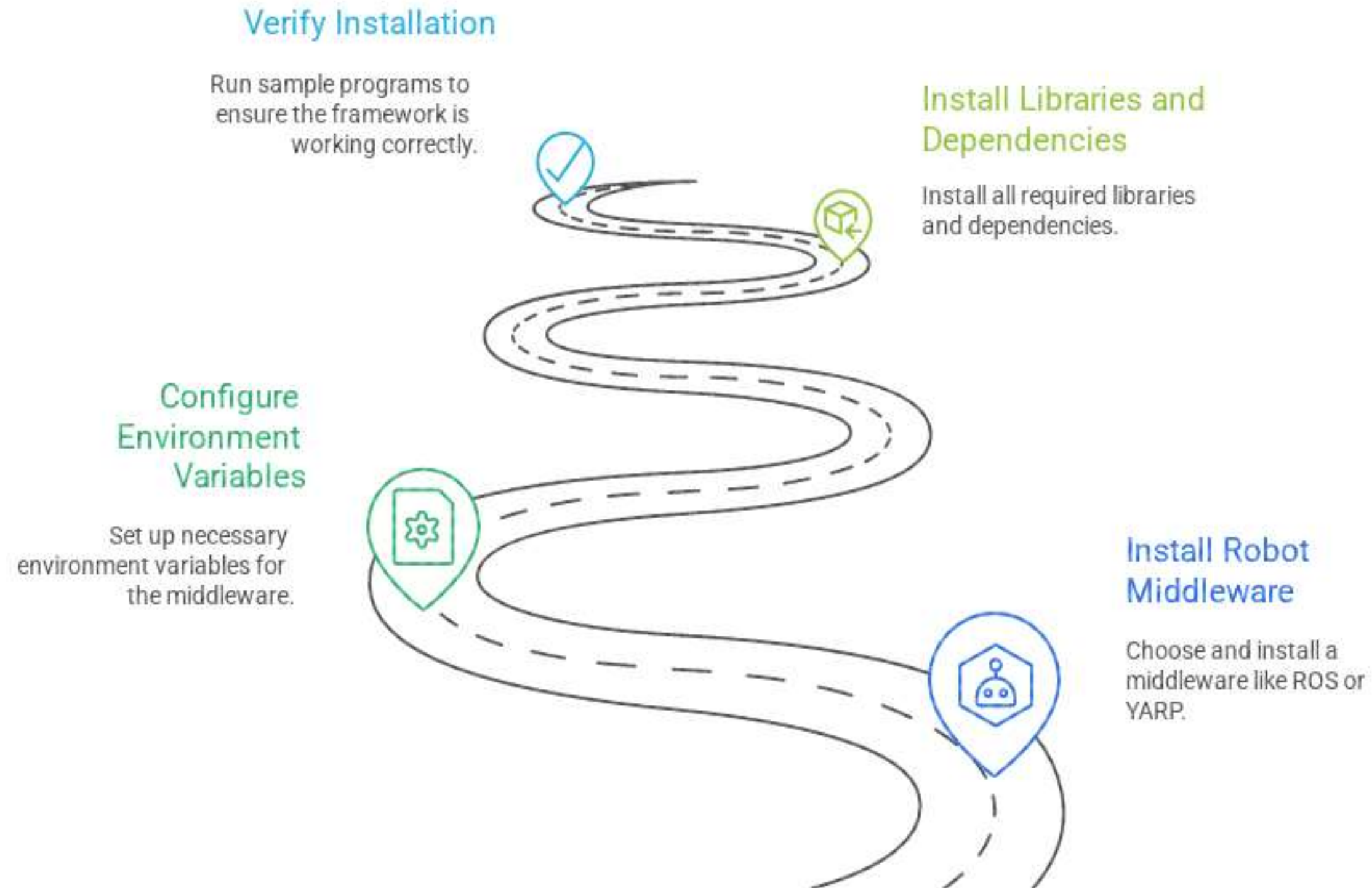


## Setting Up Robot Operating System

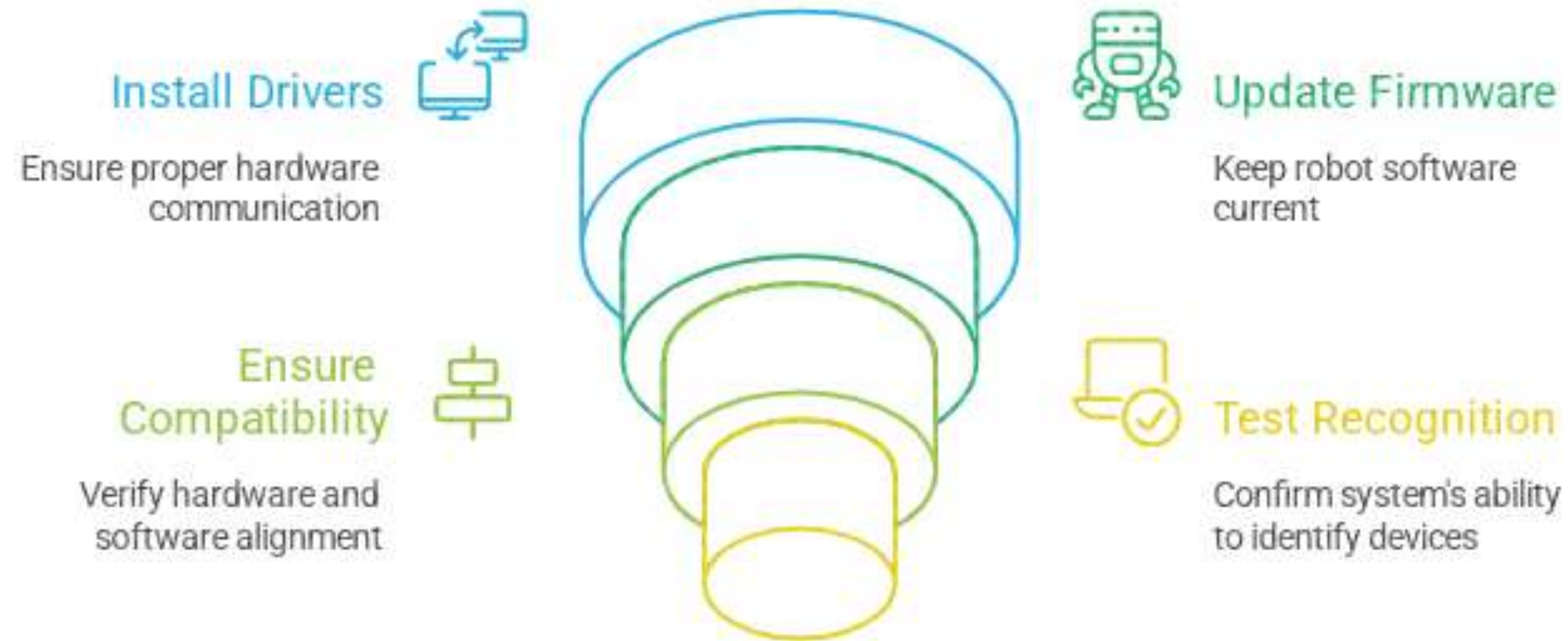


# Installing Robot Frameworks

## Robot Framework Setup Sequence



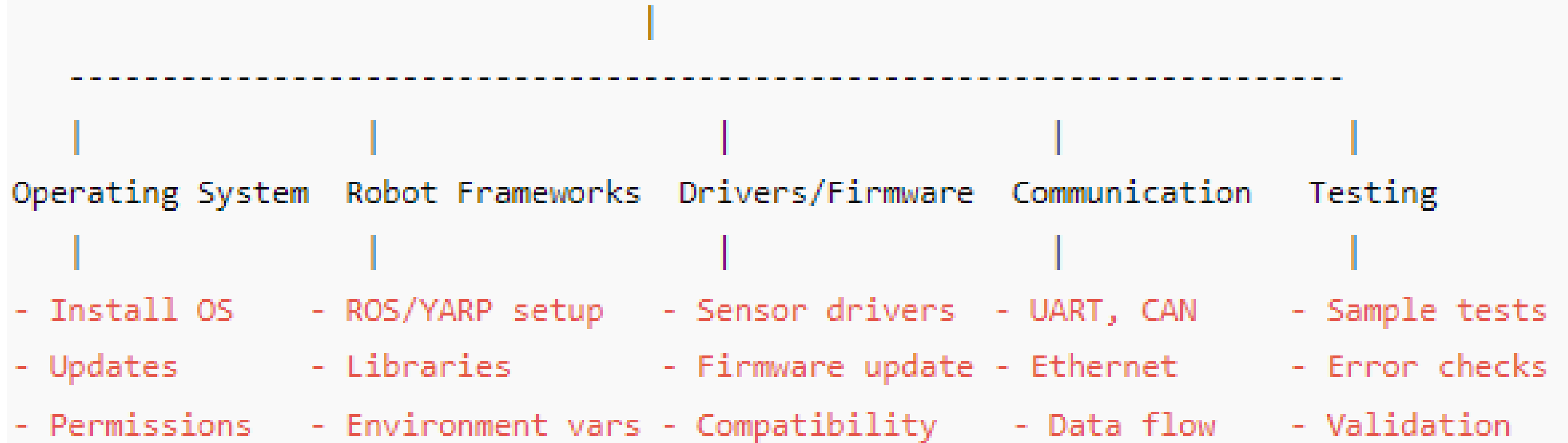
## Robot Setup Process



- Set up communication protocols (UART, CAN, I2C, Ethernet).
- Configure IP addresses for networked robots.
- Establish links between sensors, controllers, and actuators.
- Test data flow using diagnostic tools.

- Run sample motion or sensor tests.
- Check for errors or missing drivers.
- Verify real-time performance and responsiveness.
- Document installation steps for future reference.

## SOFTWARE SETUP



**1. What is the purpose of software setup in a robot?**

- a) Only improve hardware design
- b) Prepare the robot for programming and control
- c) Remove sensors
- d) Reduce robot size

**Answer: b)**

**2. Which operating system is commonly used for robotics?**

- a) Photoshop OS
- b) Ubuntu
- c) Android TV OS
- d) Google Chrome OS

**Answer: b)**

**3. Which framework is widely used for robot development?**

- a) Excel
- b) VLC
- c) ROS
- d) Paint

**Answer: c)**

**4. Firmware update is part of which step?**

- a) Testing only
- b) Driver & firmware setup
- c) Communication setup
- d) OS installation

**Answer: b)**

**5. What validates successful software setup?**

- a) Robot appearance
- b) Sample tests and diagnostics
- c) Changing robot color
- d) Deleting drivers

**Answer: b)**

THANK YOU