

**Dr.SNS RAJALAKSHMI COLLEGE OF ARTS AND SCIENCE
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Coimbatore- 49



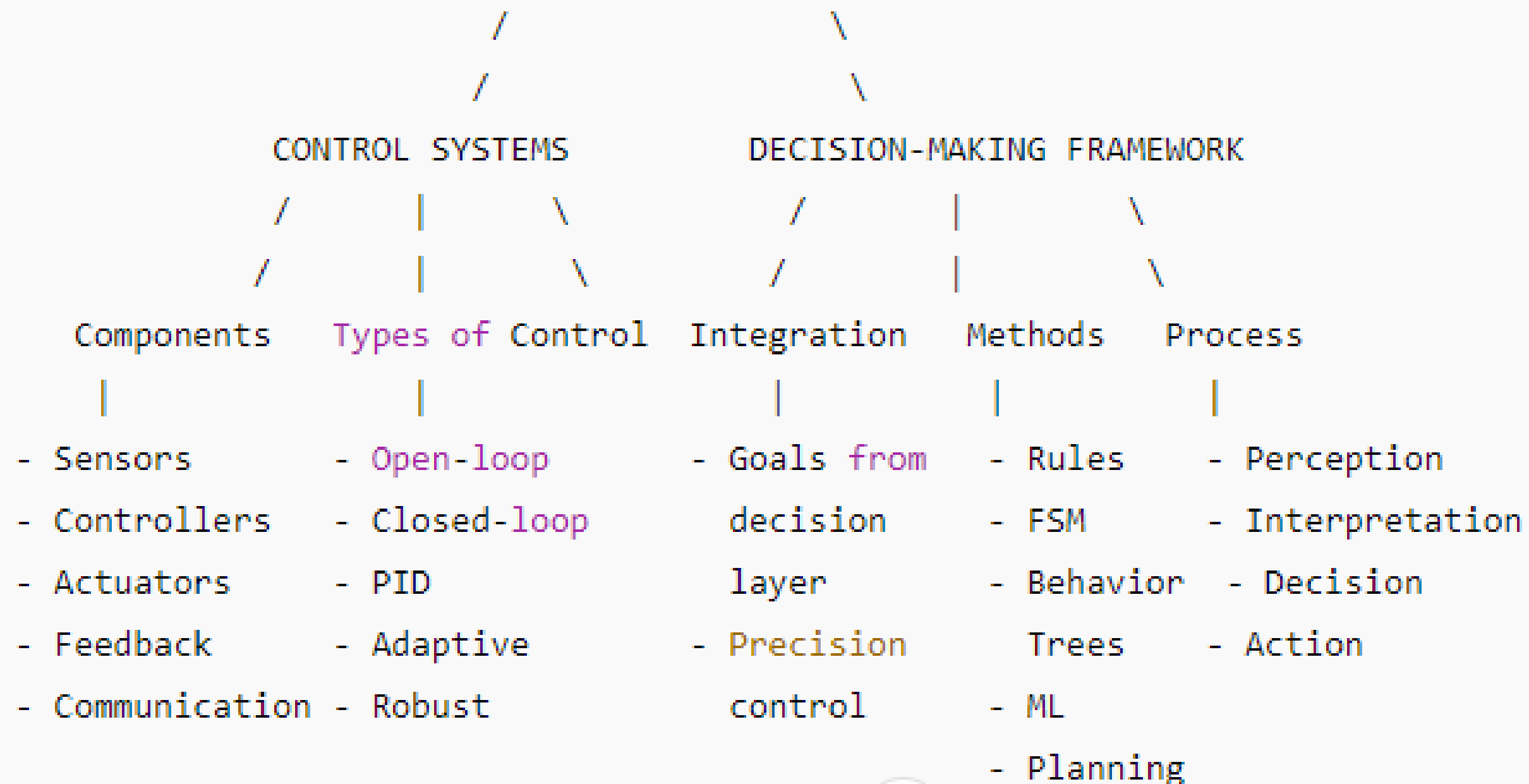
**DEPARTMENT OF COMPUTER SCIENCE
(ARTIFICIAL INTELLIGENCE & ROBOTICS)**

Robot control systems and a decision-making framework

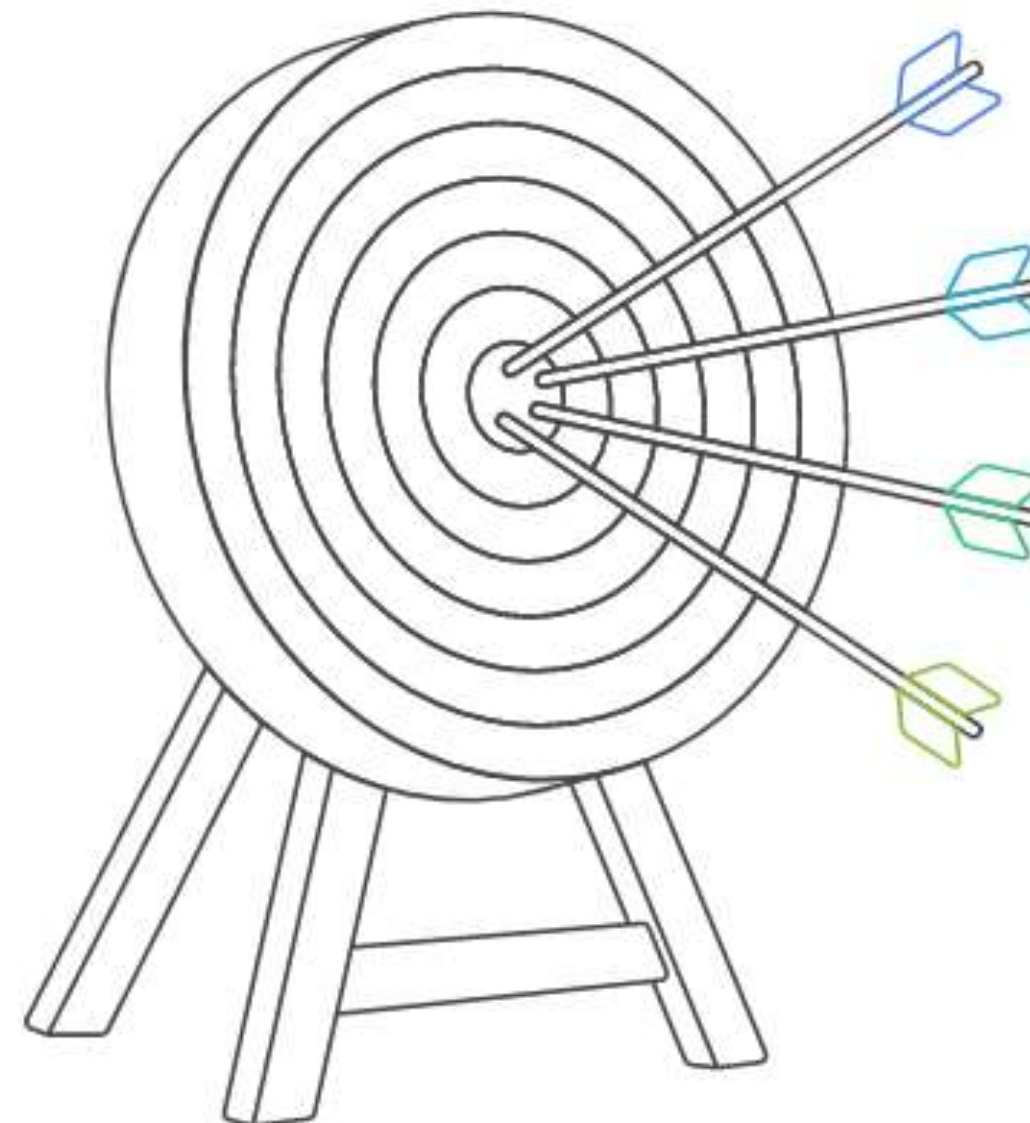
**Dr. S.Amudha, M.Sc., M.Phil., Ph.D.,
Assistant Professor,
Department of Computer Science (AI&DS)**

DT- Stages in a Robot control systems and a decision-making framework

ROBOT CONTROL SYSTEMS & DECISION-MAKING



Robot Control System Architecture



Robot Control System

Core management and regulation



Command Conversion

Translates instructions into motion



Stability, Accuracy, Safety

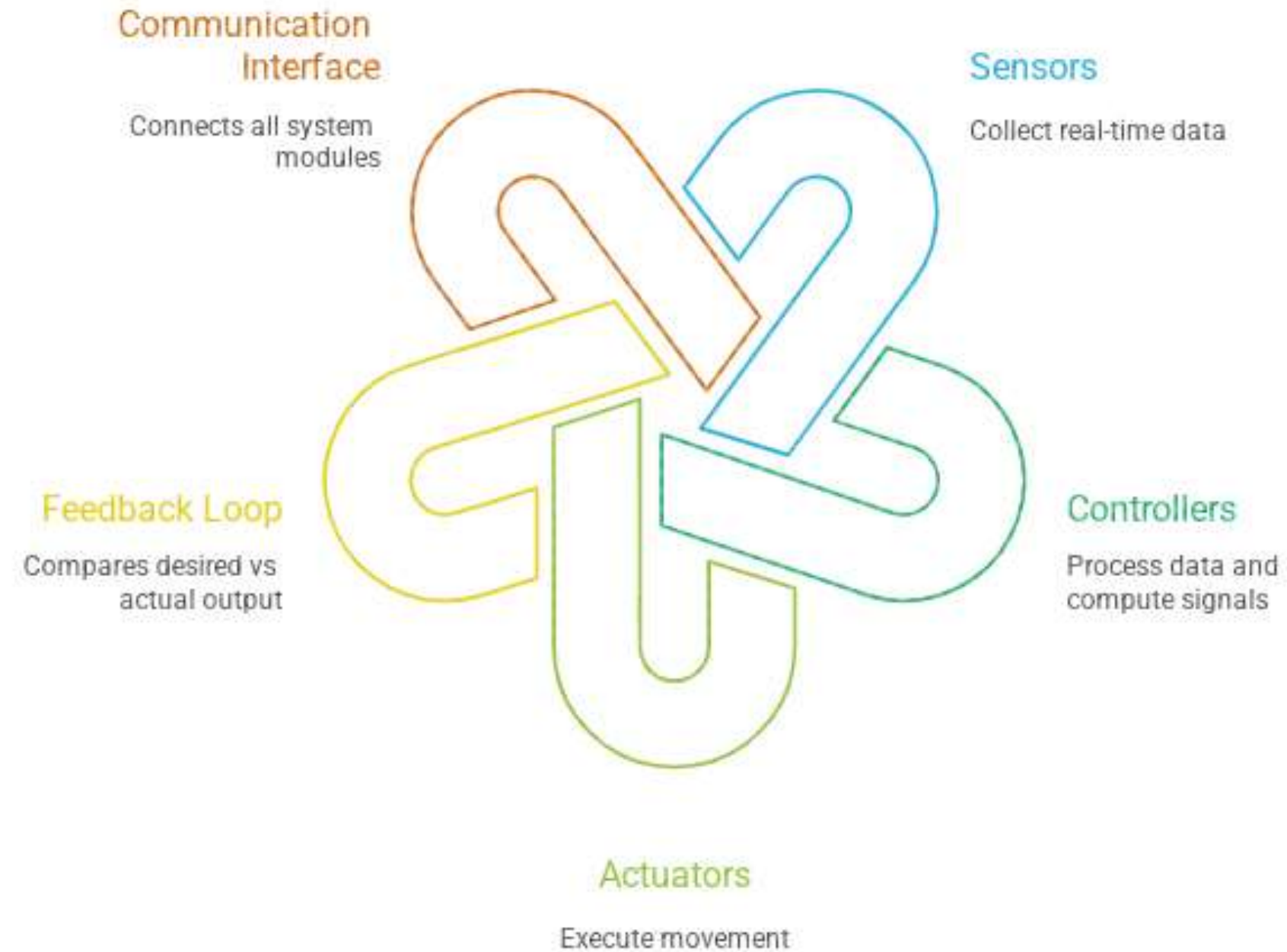
Ensures reliable robot operation



Sensors and Actuators

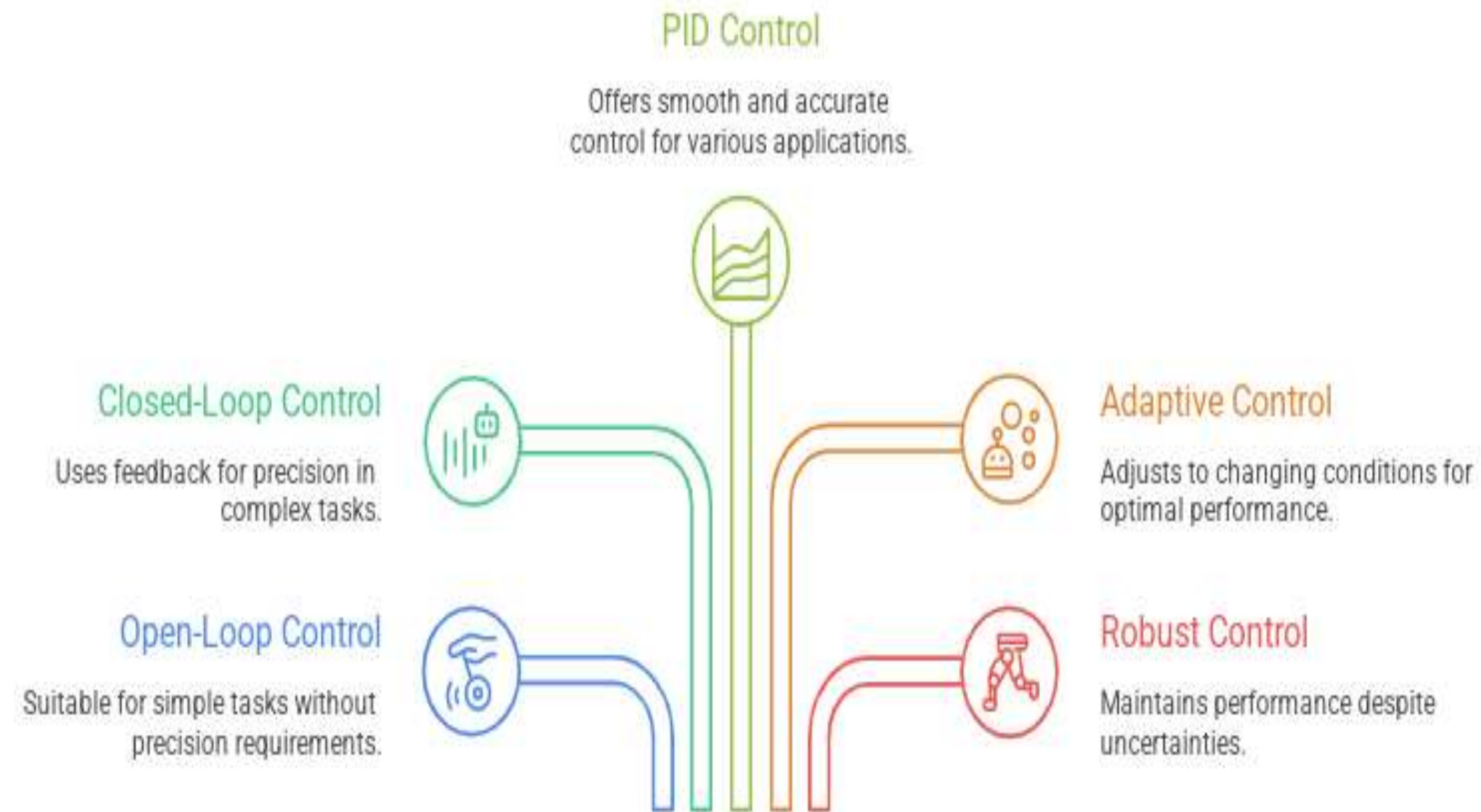
Enables interaction with the environment

Components of a Robot Control System

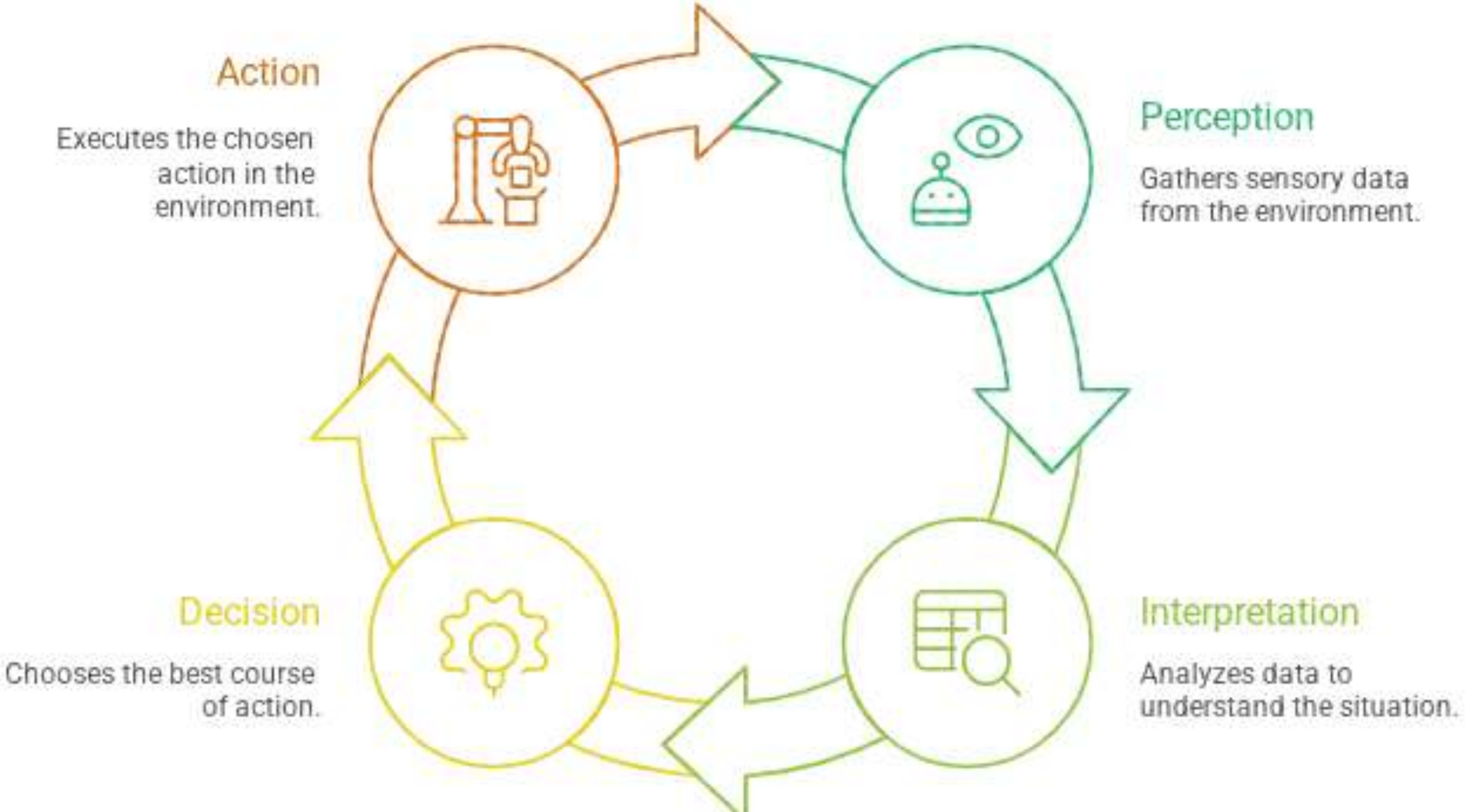


Types of Robot Control

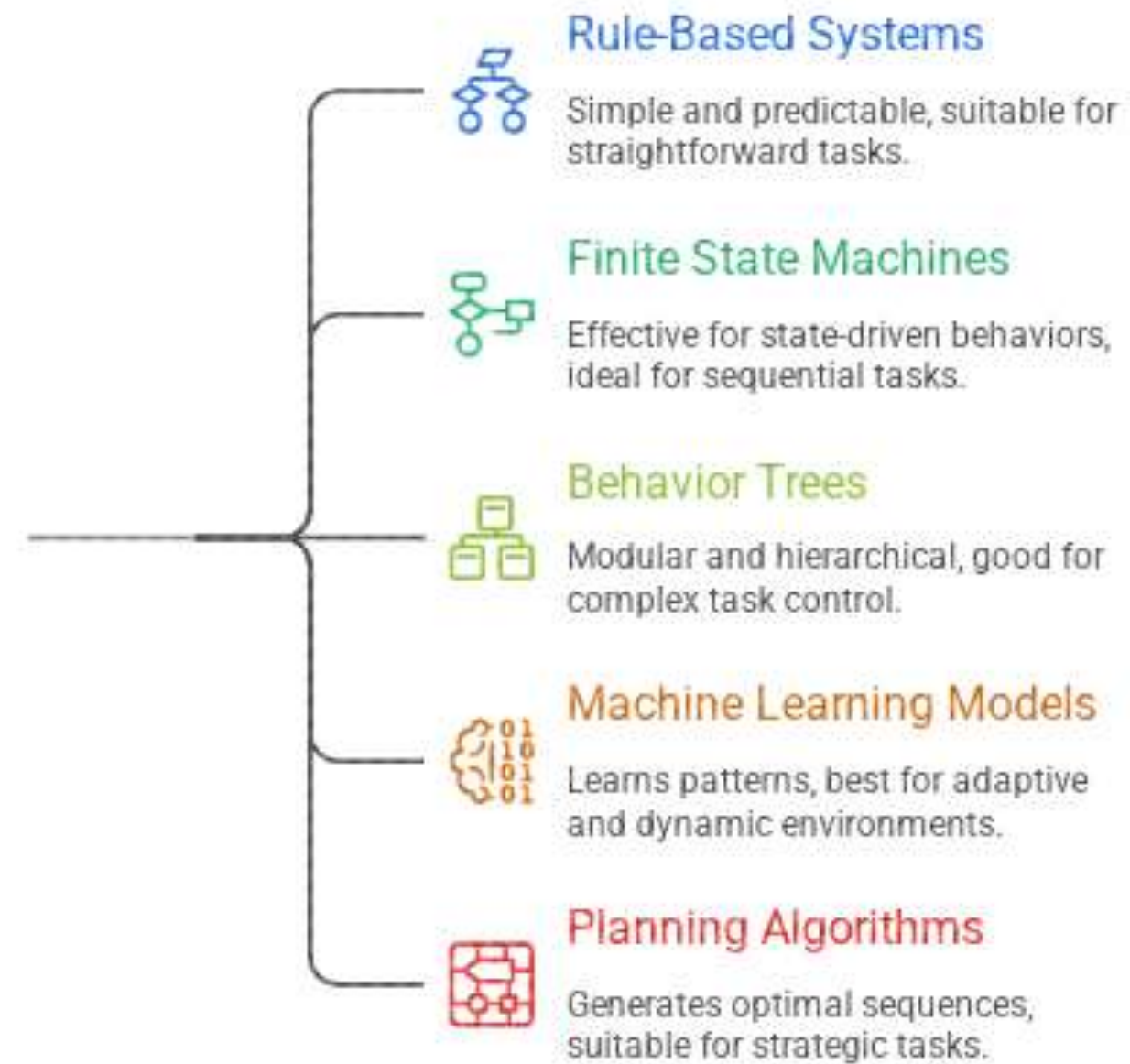
Which control method should be used for the robot?



Robotics Software Cycle

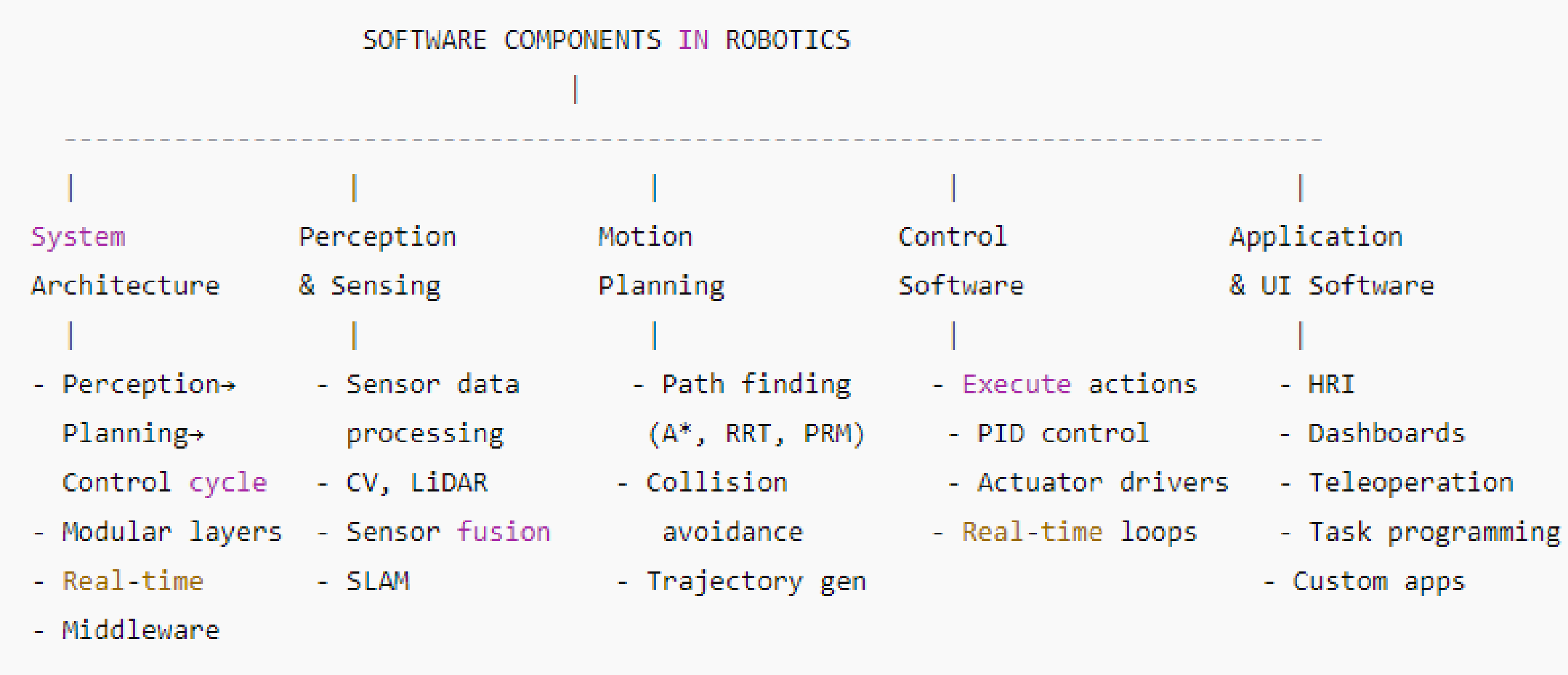


Which decision-making method should be used for the robot?



Robotics Control Hierarchy





1. ****Which component of a robot control system collects real-time data?***
a) Actuator b) Controller c) Sensor d) Driver
****Answer: c) Sensor****

2. ****Which control method uses feedback to maintain accuracy?***
a) Open-loop b) Closed-loop c) Manual control d) Feedforward only
****Answer: b) Closed-loop****

3. ****PID control mainly helps to achieve:***
a) Random movement b) Faster programming
c) Smooth and accurate motion d) Communication between robots
****Answer: c) Smooth and accurate motion****

4. ****Which method is commonly used for robot behavior decision-making?***
a) Manual coding b) Behavior Trees c) File sharing d) Power control
****Answer: b) Behavior Trees****

5. ****Which step comes first in the decision-making process?***
a) Action b) Decision c) Interpretation d) Perception
****Answer: d) Perception****

THANK YOU