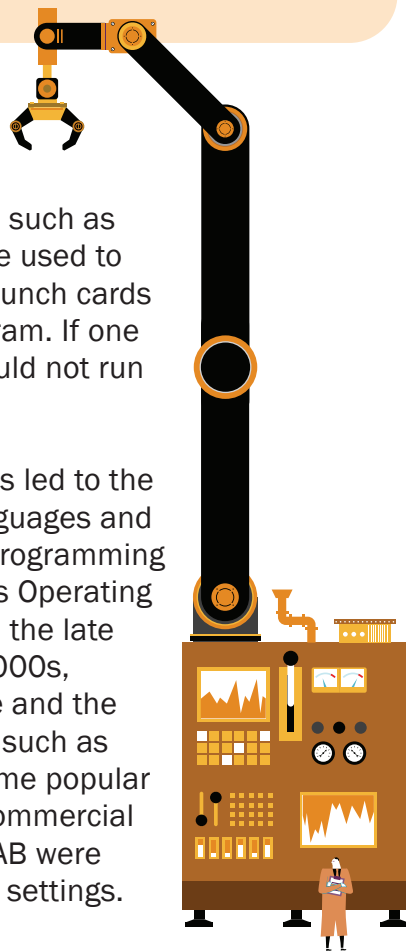# PROGRAMMING PLATFORMS

CONCEPT Programming platforms refers to software tools and frameworks that provide an environment for developers to program and control robots. These platforms offer various programming languages, libraries, and tools that enable the creation of robotic applications.

BACKGROUND

In the 1960s, programming languages such as FORTRAN and assembly language were used to program robots. They used a deck of punch cards input sequentially to compile the program. If one card was out of order, the program would not run properly or error out.

The introduction of personal computers led to the development of new programming languages and tools for robotics. One of the earliest programming platforms for robotics was the Robotics Operating System (ROS), which was developed in the late 1990s at Stanford University. In the 2000s, the popularity of open-source software and the growth of the internet led to platforms such as Arduino and Raspberry Pi, which became popular among hobbyists and makers, while commercial platforms such as LabVIEW and MATLAB were widely used in academic and research settings.

EXAMPLES

ROS is an open-source platform that provides a wide range of tools and libraries for robotics development.

MICROSOFT ROBOTICS DEVELOPER STUDIO is a Windows-based platform that includes a visual programming environment and libraries for building robotic applications.

ARDUINO is a low-cost, easy-to-use platform for building electronic projects, including robots and allow developers to create applications using microcontrollers and single-board computers.

RASPBERRY PI is a small computer that can be used for a variety of projects, including robotics. It includes GPIO pins for controlling sensors and actuators.

V-REP is a 3D simulation environment used for testing and validating robotic applications. It provides a range of robots and sensors, as well as tools for analyzing data from simulations.

BLOCKLY is a web-based visual programming editor that provides a user-friendly interface for creating robotic applications without requiring extensive programming knowledge.

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