Robocup:
Test for Success

Roskilde 2022

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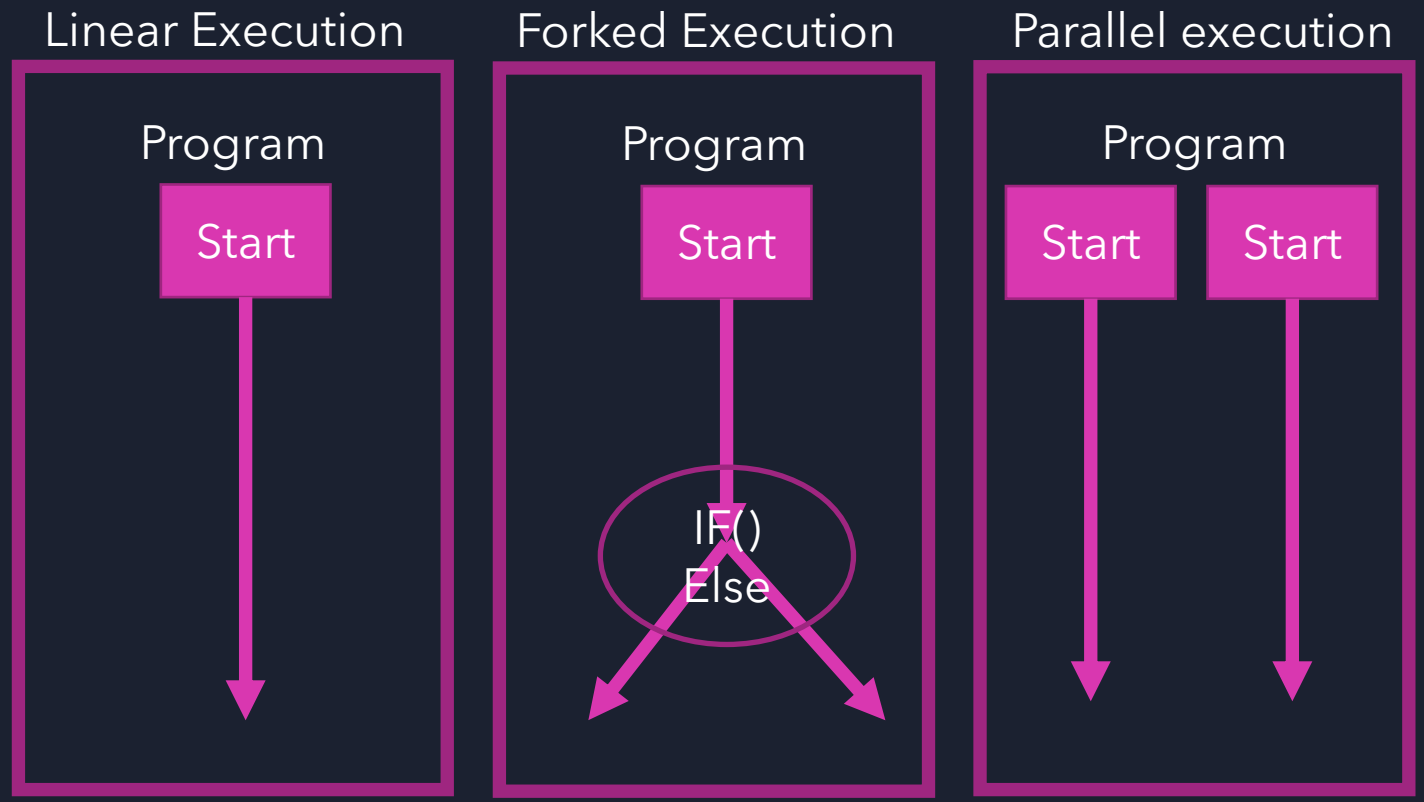
Tekniske
Skole

Logic and program flow of control

- Logic is binary, why?
- Flow is build with logic
- Logic is determined by data
- Data is defined by the programmer
- While() loops the section
- What is Logic gates and Boolean algebra



Variables

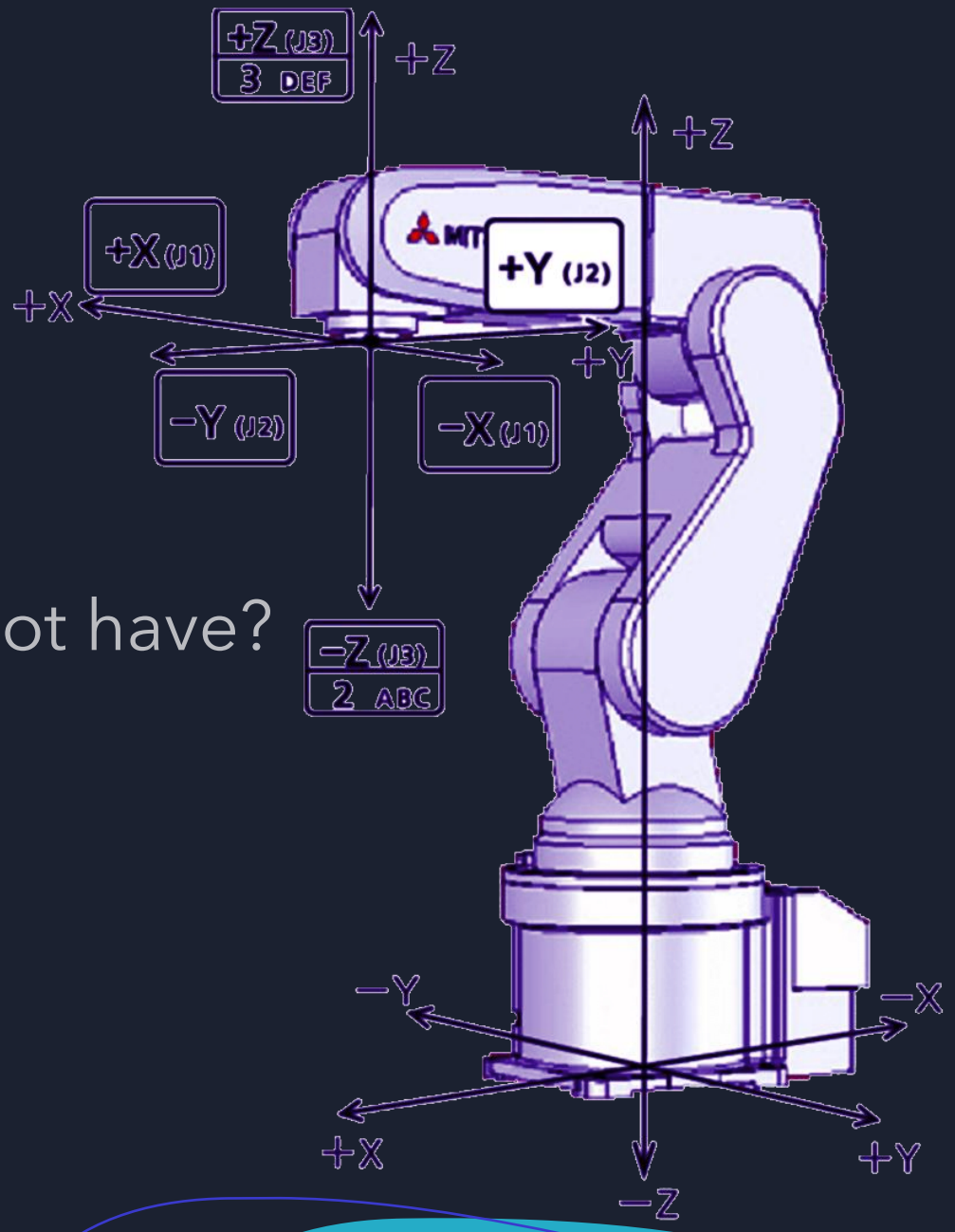
- A way to store and manipulate data
- Will lock into it’s defined datatype
- Can be accessed anywhere within the same program

Data types

- Boolean, logical
- Integer, all whole numbers
- Float, all real numbers
- String, text and text operations
- Arrays, integers or floats in succession
- Pose, a special type which will be discussed later

Coordinate systems, and vector types

- Base & Flange coordinate systems
- How many axis does an articulated robot have?
- What is a vector?



Movement and Waypoints

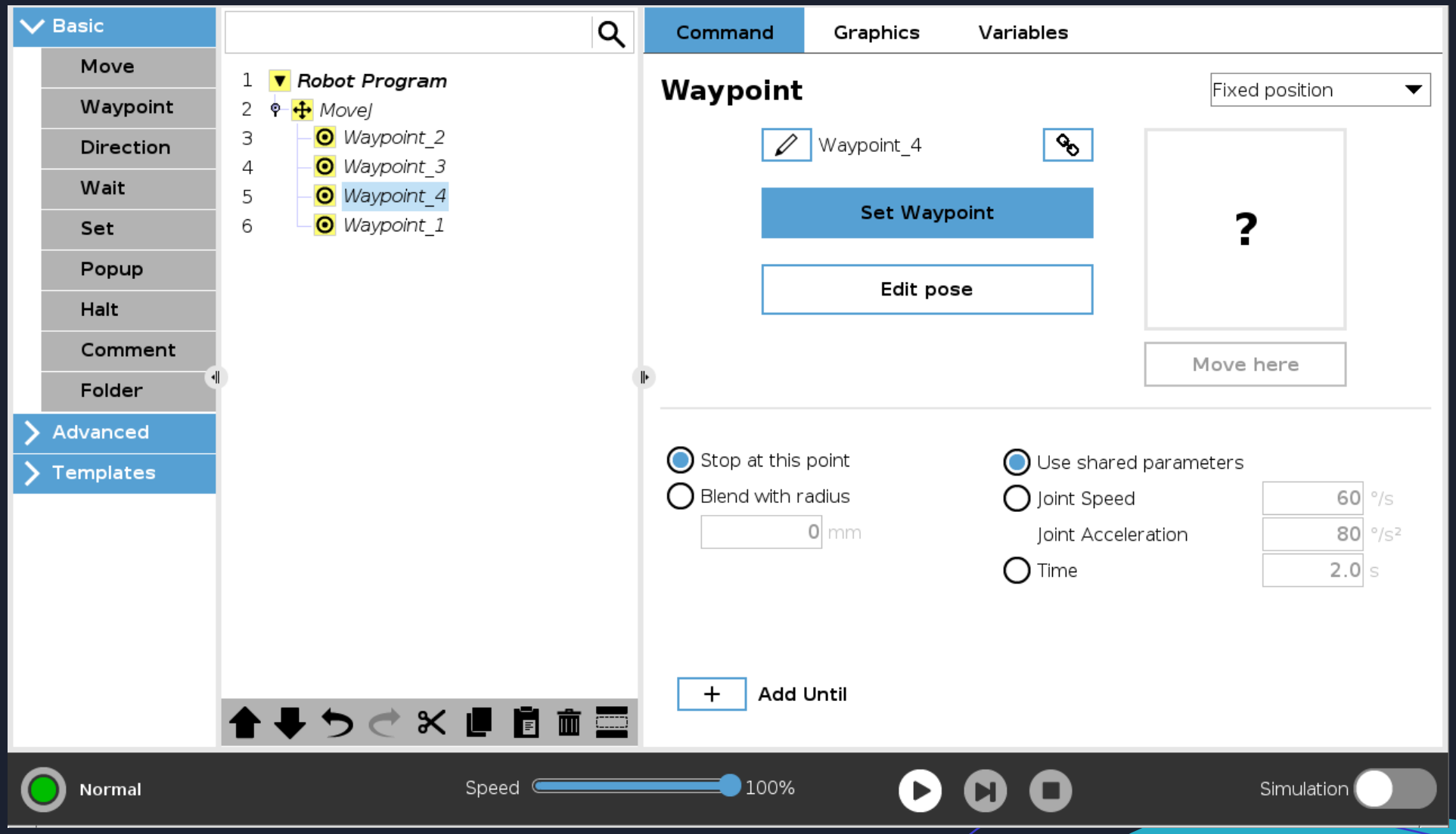
- MoveJ, MoveL & MoveC
- A waypoint is defined by a Pose.
- A Pose is defined by the six-dimensional vector p[X, Y, Z, Xr, Yr, Zr]
- XYZ is a coordinate in 3D space, defined in Meters.
- XrYrZr is a coordinate in the arms rotational space defined in radians.

MoveL pattern

MoveC pattern

MoveJ pattern is irregular

UR e-series visual programming interface



Scripting

- Used for advanced robot programming
- Algorithms are easier to implement
- More flexible
- Easier to port and implement the program across robots
- Based on Lua script