



Practical Robot Strategy

Project Bucephalus Robot Planning

1. Basic Robot Dimensions
2. Identify Useful Sensors
3. Discover the Highways
4. Plot Navigation Points
5. Analyse Mission Models
6. Plan Robot Runs
7. Robot Layout

Step #5: Analyse Mission Models

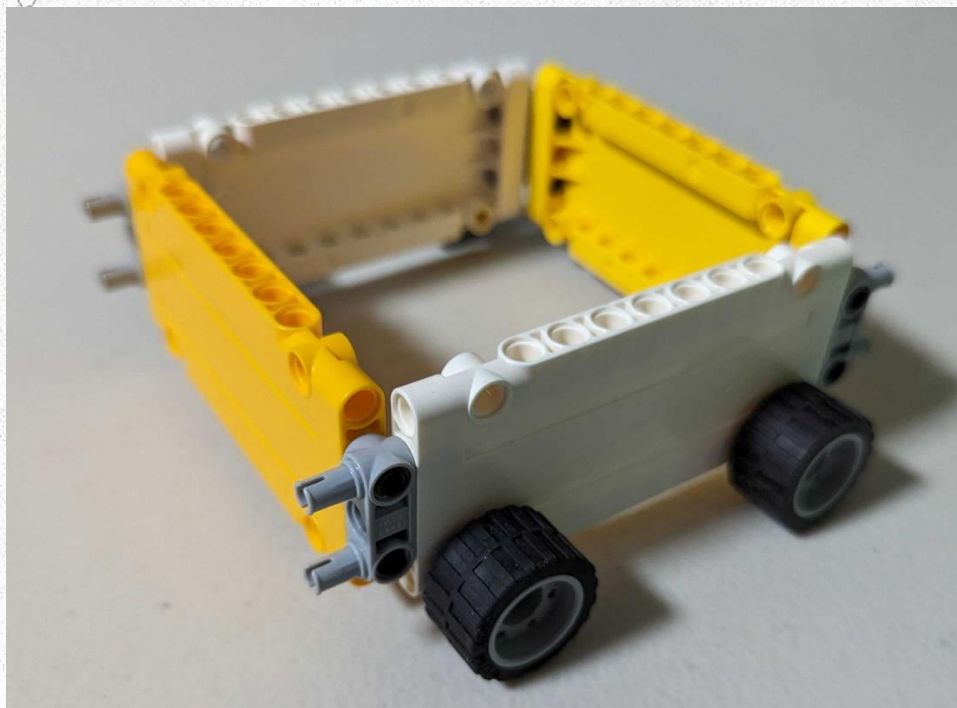
Assign each Mission Model to a Team Member:

- What Movement(s) activate the missions?
- How many directions can you approach the Mission?
- Is the Mission near any others? Could they be clustered?
- Could the Mission be activated without a motor?
- What's the best way to reach the Mission?

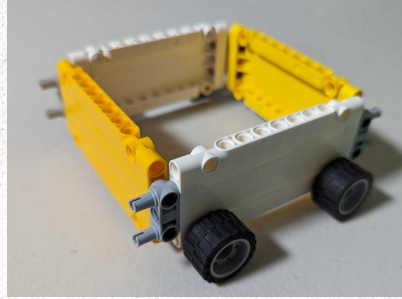
Compare notes:

- What are the common movements the robot has to make?
- **Use this information to plan your robot**

Practical Application

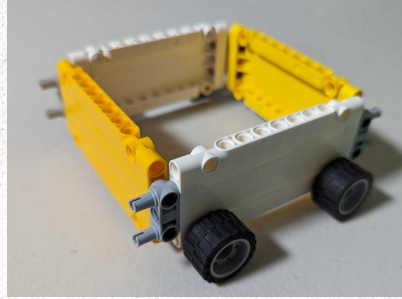


Robot Cart



What's The Point?

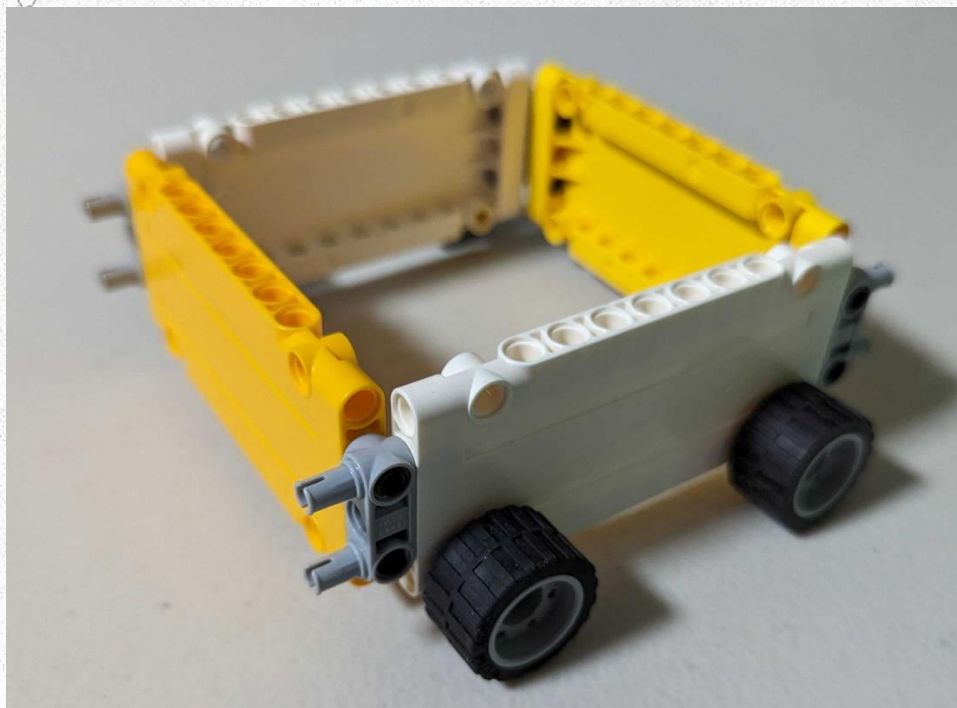
- Stable base
- No squabbling over robot
- Rapid development of Proof of Concept and Prototypes
- Eliminates “wishful thinking” and maps out needed functions
- Forces students to think beyond the immediate mission



Making It Work...

- Identify path and “Drive” to the Mission
- Simple Machines First! (especially Lever and Inclined Plane)
- Test how far a robot can reach
- Identify tools that can be reused
- Identify needed motion
- Remember Motor Limit

Practical Application



Demonstration

Project Bucephalus Robot Planning

1. Basic Robot Dimensions
2. Identify Useful Sensors
3. Discover the Highways
4. Plot Navigation Points
5. Analyse Mission Models
6. Plan Robot Runs
7. Robot Layout

Practical Application



Whiteboard Demonstration

Project Bucephalus Robot Planning

1. Basic Robot Dimensions
2. Identify Useful Sensors
3. Discover the Highways
4. Plot Navigation Points
5. Analyse Mission Models
6. Plan Robot Runs
7. Robot Layout

FIRST IN SHOWSM

PRESENTED BY Qualcomm



PRESENTED BY  Raytheon Technologies



PRESENTED BY  HMS
Genova Mass Foundation

2023-2024 SEASON