

Adding Links in URDF

Steps to Build a URDF Model

1. Create a Link

- Add a `<visual>` tag.
- Choose geometry:
 - Use simple shapes like `<box>`, `<cylinder>`, or `<sphere>`, or
 - Use a mesh via the `<mesh>` tag.
- Define the `<origin>` for proper placement of the visual geometry.
- Add a `<collision>` tag using a simplified shape for better performance.
 - Example: replace wheels with `<sphere>` of equivalent radius.
- Add an `<inertial>` tag:
 - Preferably define `xacro:macros` for common shapes.
 - Use shape dimensions to calculate realistic inertia tensors.

2. Add Another Link

- Repeat the same steps: visual, geometry, origin, collision, and inertial.

3. Connect Links with a Joint

- Add a joint to define the parent-child relationship between links.
- Start with a `type="fixed"` joint to verify the placement.
- Set the `<origin>` of the joint correctly.
- Change the joint type as needed: `revolute`, `prismatic`, etc.
- Add joint-specific tags like `<axis>` and `<limit>`.

4. Repeat for Additional Links

- Repeat the above steps for each new link and joint in your robot model.