HAL first locates the nearest can in her habitat, navigates towards can, secures can, and abstracts it by locating recycle bin and then disposes of the can; all this is done using logic provided by the interactive C programming language.

**Real World Applications**
- Detection and removal of objects in an environment unsafe for humans.
- Recycling task applications.

**Challenges**
- Sensors have a limited range of accuracy (between 6 and 28 inches).
- Weight on front of robot makes turning without front wheels difficult on some surfaces.
- Motors run faster when battery is fully charged.

**Visit HAL at:**
http://mywebpages.comcast.net/ejc

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**Habitat Abstracting Logic**
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- **Manual & Electric Pumps:** provides air pressure for the closed pneumatic system.
- **Servo Valve Switch:** controls the air flow to the cylinders that open and close the gripper.
- **Touch Sensor:** when can hits sensor it lets the robot know that the can is in its gripper.
- **Distance Sensors:** Measures distance by timing how long it takes for light sent by sensor to bounce off an object and return.

- **IR Reflectance Sensors:** used to detect environment boundaries (i.e. white line).