Tasks

- Task split
- Stop tasks
- Start tasks

Tasks are like programs. Multi-tasking means you can run more than one program at a time.

Task Split

All tasks must end with their own stoplight
Resource conflicts

Both tasks can access the sensor values

Tasks will conflict over motor control

Sharing Control of Motors

Motor A goes forward for 2 sec, backwards for 2 sec and forward for 10 sec
Tasks & Containers

User containers 32-47 are "local" and are not shared between tasks.

Stopping tasks

Stopping all tasks is equivalent to ending the entire program. The sound is never played!
Stopping One Task

Start Tasks

The upper task can be restarted by the lower task
Task Priority

Putting it all together
Getting Stuck

Realizing You Are Stuck

- forward
- left touch?
- left avoid
- reset timer
- bump = 1
- etc.
- right touch?
- right avoid
- react timer
- incr. bump
- bump = 0
- random avoid
Random Motion Occasionally

Events
What is an Event?

- An **Event** is like a combination of a **Wait For** and a **Jump**.

Types of Events

- 16 Event conditions and 3 Event Colors
Setting up an Event

Step 1: set-up event
Step 2: start monitoring event(s)
Step 3: Event landing

event color (green wire)
event source (blue wire)
event value (blue wire)

Stopping & Re-starting Events

• You can stop monitoring an event and then restart it later
Restarting Events

• Restarting can be after the Event Landing
• Program will jump backwards on the Event

Multiple Events

• 3 standard color Events
• Up to 16 Events
• All Events share same Event Landing
Multiple Events & Tasks

- One Event Landing per Task
- 16 total Events for all Tasks

Obstacle avoidance using only the light sensor
**Communication:(handshaking**

- Cannot send & receive Mail at same time
- Need to work out handshaking

**Challenge**

- Build a robot that wanders the room (randomly or systematically) using touch and/or light sensors
- Use Events to detect if you might be stuck (too much time has elapsed since anything has happened)
- Call for help if you are stuck