

# Exploring Logo on a Turtle Robot

## Part II: Conditionals

Sreepathi Pai

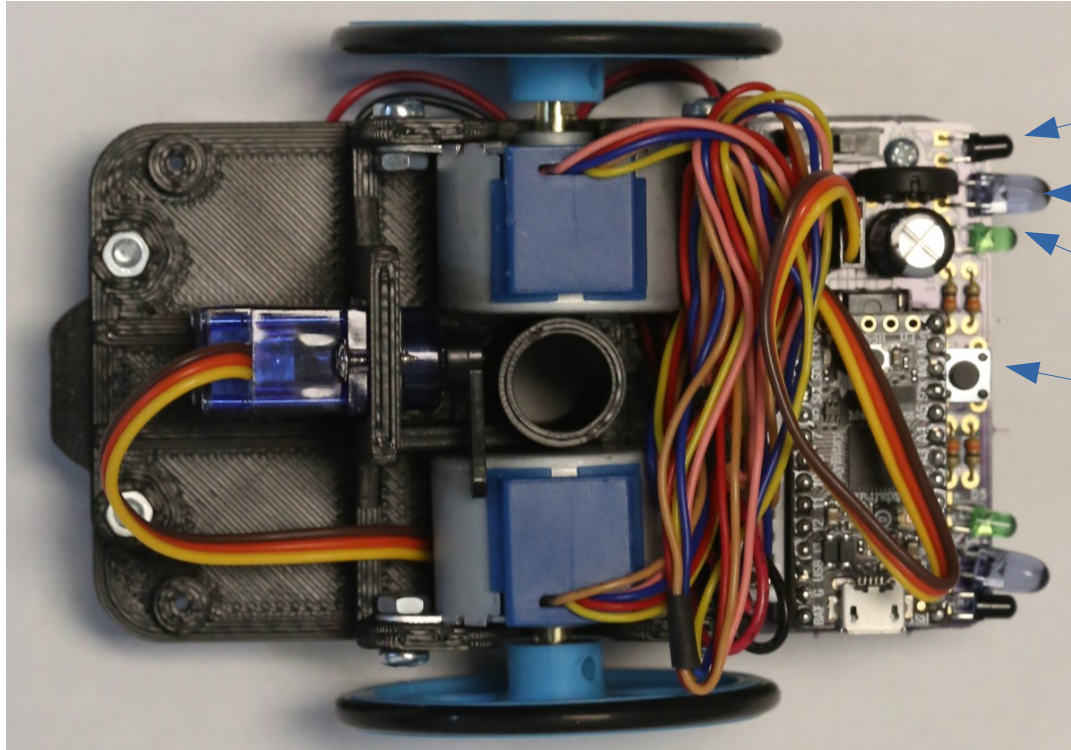
[sree@cs.rochester.edu](mailto:sree@cs.rochester.edu)

Department of Computer Science  
University of Rochester

# New Link

- <https://bit.ly/rocturtle24>

# Turtle Robot



Left IR Detector (Input)

Left IR Emitter/LED (Output)

Left Green LED (Output)

Button (Input)

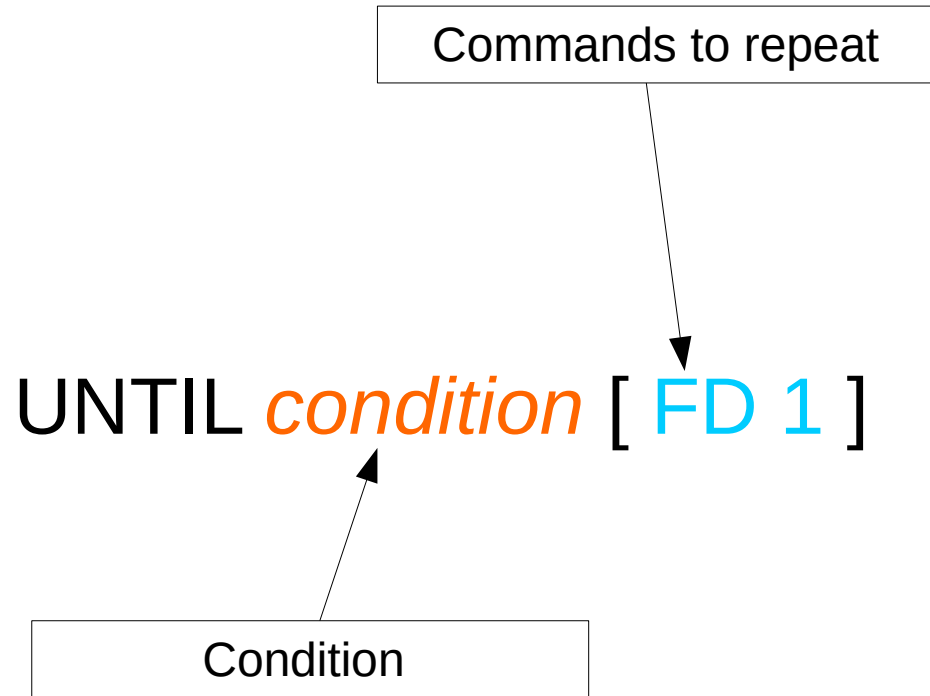
# Conditions

- A condition is a formula that is either false (0) or true (not 0)
- $3 < 5$
- $100 > 50$
- $3 = 3$
- $3 <> 4$

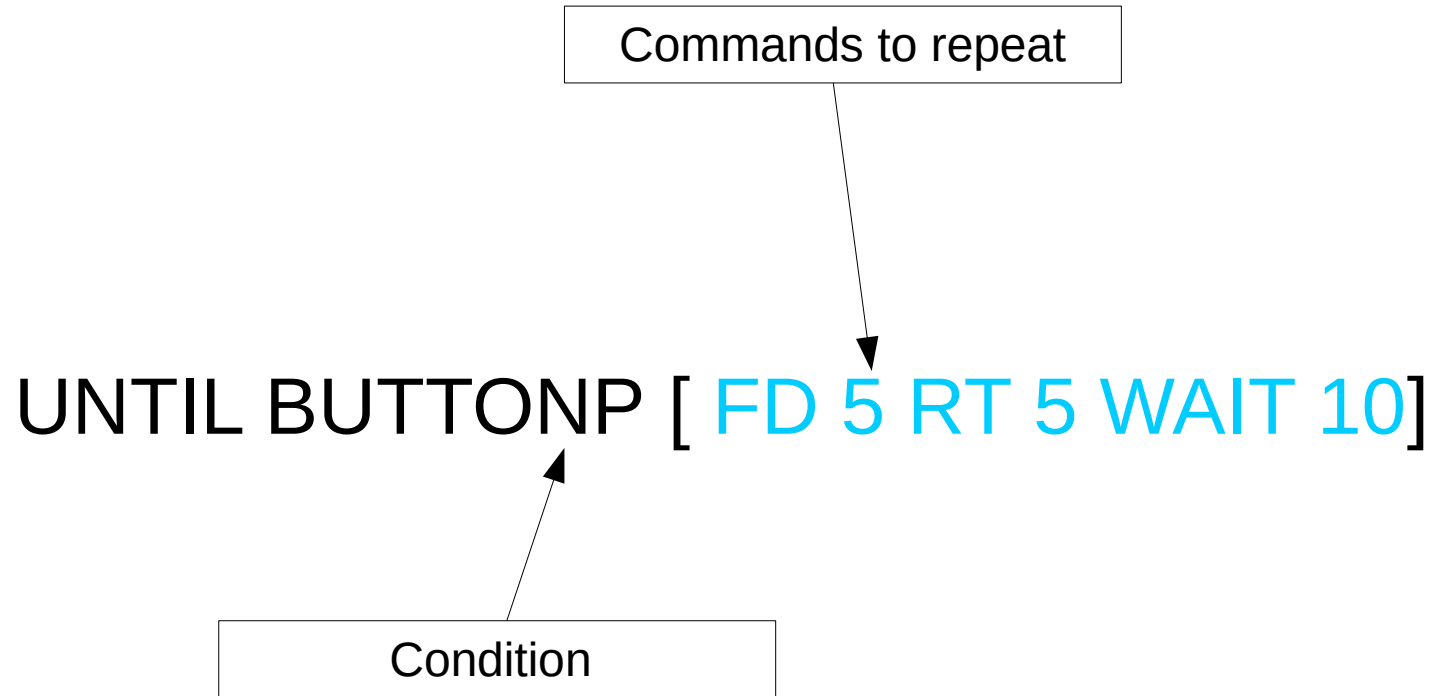
# BUTTONP

- Returns True if button is pressed
- On computer
  - If mouse button is pressed
- On robot
  - If button is pressed

# The UNTIL Command



# UNTIL Example

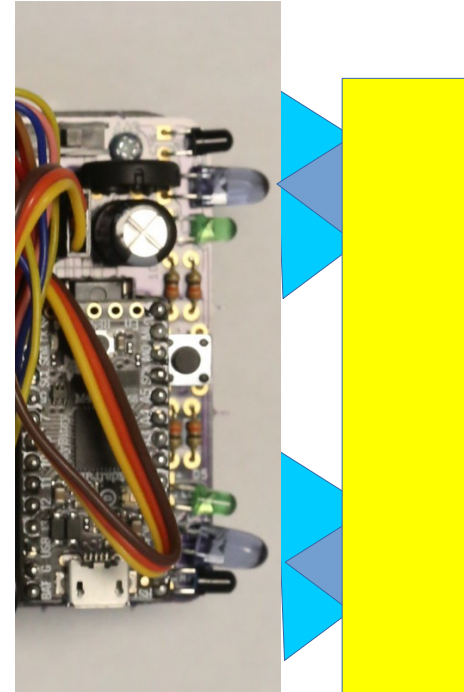
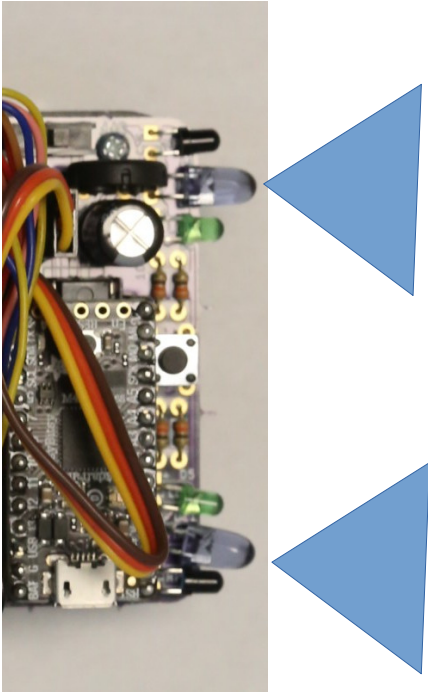


# SHOW

- SHOW is a command to show a value
- SHOW 5
- SHOW BUTTONP



# Detecting An Obstacle



# EMITTER

- EMITTER turns on the infra-red LEDs
- MAKE 'EMITTER TRUE
  - Will turn both the infra-red LEDs on
- MAKE 'EMITTER FALSE
  - Will turn both the infra-red LEDs off
- Shows up as the blue circle in the browser

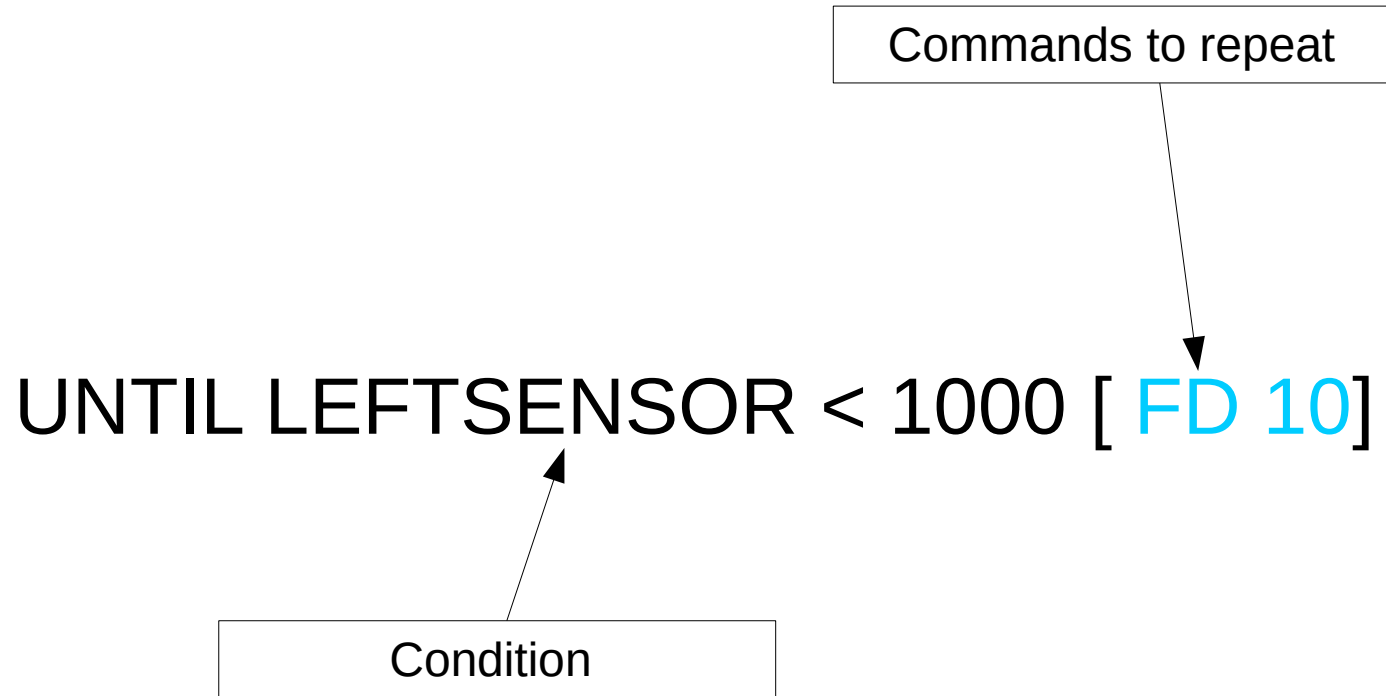
# At the walls

- MAKE 'EMITTER TRUE
- SHOW LEFTSENSOR
- FD 400
- SHOW LEFTSENSOR

# LEFTSENSOR and RIGHTSENSOR

- LEFTSENSOR returns the light detected from the infra-red LED on the left side of the robot
  - It is a high value if no infra-red light is being detected
  - It is a low value if infra-red light is being detected
- Likewise for RIGHTSENSOR

# What will this program do?



# Putting all the pieces together

```
MAKE 'EMITTER TRUE
UNTIL BUTTONP [ FD 10
  UNTIL LEFTSENSOR > 5000 [ RT 5 ]
  UNTIL RIGHTSENSOR > 5000 [ LT 5 ]
]
MAKE 'EMITTER FALSE
```

# Survey

