PROGRAMMING LOGIC

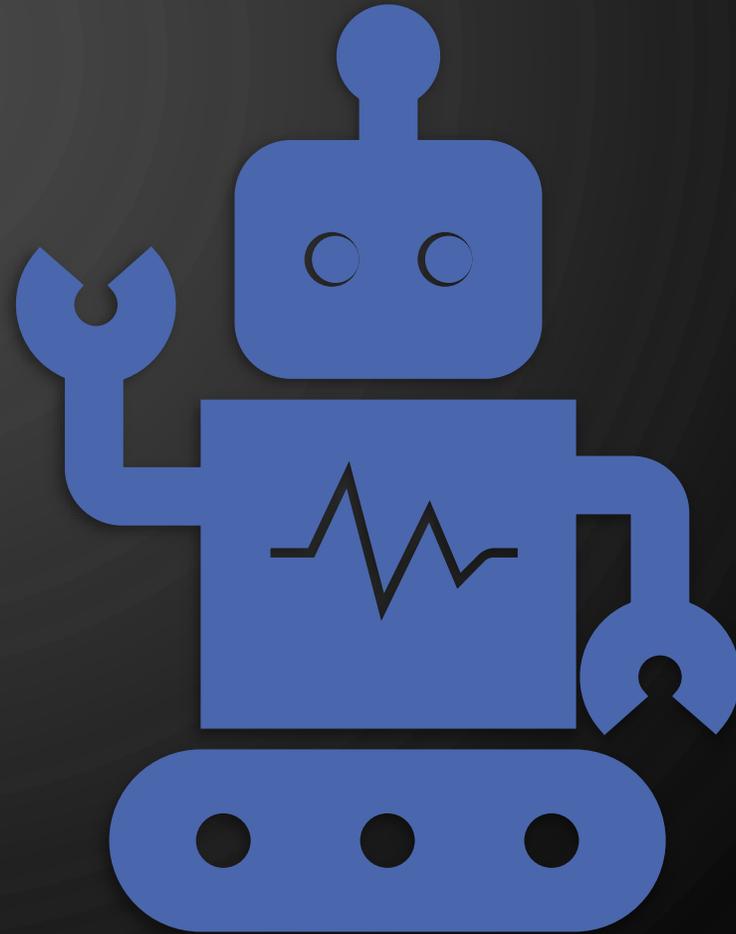IEEE CITY ROBOTICS SOCIETY

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Today's Agenda

- Introduction

- Recap on last week

- Data types and variables

- Boolean logic and application

- Note on creativity and what to think going forwards

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FOLLOW THE LINE COMPETITION

- Team Competition – 4/5 students per team

- During the competition, your robot must complete the whole track.

- Judged based on lap time.

- If the robots goes out of the line, you will be deducted points.

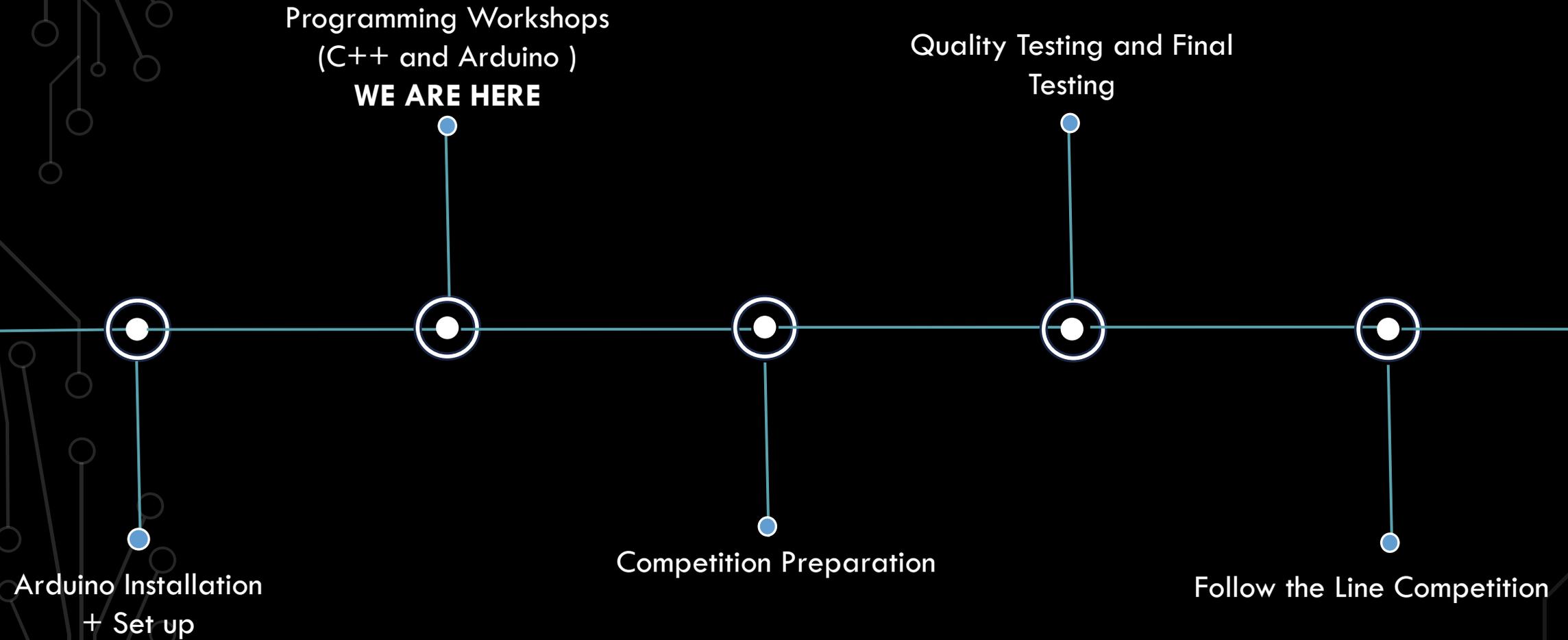- You will be coding using C++ and the Arduino IDE Environment.

Timeline for our upcoming events

Programming Workshops
(C++ and Arduino)
WE ARE HERE

Quality Testing and Final Testing

Arduino Installation
+ Set up

Competition Preparation

Follow the Line Competition

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DATA TYPES AND VARIABLES

- What are they?

- Why do we use them?

- int x = 10 …. What does that even mean

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COMPUTERS ARE BINARY!

- They can only take DISCRETE DIGITAL VALUES

- What can you do with it?

- How will our robot read digital data?

COMPUTER LOGIC

- BOOLEANS and IF STATEMENTS

- What operations can we use?

AND Truth Table		
A	B	Y
0	0	0
0	1	0
1	0	0
1	1	1

OR Truth Table		
A	B	Y
0	0	0
0	1	1
1	0	1
1	1	1

XOR Truth Table		
A	B	Y
0	0	0
0	1	1
1	0	1
1	1	0

NOT Truth Table	
A	B
0	1
1	0

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APPLYING THIS TO OUR ROBOT

- Determine WHAT TO DO with sensor inputs!
- How to use that information to control output

- Operations:
- Check if the robot is still on the line?
- What direction does it need to go?
- Anything else?

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LOGICAL CREATIVITY AND DESIGN CREATIVITY

- Everyone's robot will run differently depending on their implementation!

- What do you want to prioritise ?
- How will track layout affect it?

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