6 Flow Arm

Module Goal

The goal of this module is to teach the student how to use the Flowarm software for the Linxmotion robot.

INTRODUCTION

Video

USING THE FLOW ARM SOFTWARE

To open the Flow Arm Software package, click on the program icon.

Configurations

There are two different configurations to this robot. The robot that will be discussed first uses the SSC-32 card. You will need a serial cable and 9V battery. For newer versions, you would use a USB cable instead of a battery.

First make sure both switches are in the OFF position. Then, plug the servo power into the power port. You would then install the 9V battery. Next, plug the serial cable into the SSC-32 card.

Plug the USB converter into the serial cable and then plug your USB into the speedport on your computer. In most cases, you would have to restart your computer for this to work. It is then best to turn both switches to the ON position and open the flow arm software. Be mindful that when you do this, the robot generally jumps to the

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You will see that your connection is established by looking at the bottom right corner of the screen. Notice the COM and a green light, which indicates the connection. If you do not see the green light, you will have to repeat the steps on the previous slide. In some cases, you may have to open the program and then turn on the switches or plug in to a different USB port on your computer.

Robot Movements

Designer- Robot is circled in red

You can simply right click on the robot to make it move. Right click on the robot to move it.

If you left click, you can move the end claw. You can also click on this part (he doesn't say the name of the part) to move it.

You can click on the Gripper or Wrist button to move each part. You can also click on the arrows underneath the buttons.

Stop Button

The Stop Button is in the bottom left portion of the screen. It is critical to know where this button is, no matter which robot you are using. Right above the stop button is the Information button. You can get different information about the robot when you click this button. Click the Information button to continue.

Video

Accuracy and Repeatability

 It is important to note that when you write a program, the robot will continue to perform the action over and over again. Robots can be used in various industries and can do tasks such as painting, installing wheels, welding, packaging products with a high degree of accuracy and repeatability.

List the key terms that are required for the students to understand this topic and provide a definition.

Available Resources:

OPEN SOURCE MATERIALS, include thumbnails for placement of each photo in MBL INTERACTION section above:

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PROGRAMMING ROBOT

Programming a Robot

Video

The first step is to open the flow arm software, make sure a connection is established and ensure that the correct arm is in use. To check the arm, click on the highlighted area.

Click on Save All Patterns.

You will be prompted to save the program. Click next to continue.

Video

Recording a Sequence

The first step in recording a sequence is selecting the home button.

Select the record button and then click the symbol to add a new step. Click the highlighted symbol.

You would next move the arm to the desired spot and record what you just did. Click on the record button.

You would continue the process until all steps have been added.

Video

By shortening frames, you can cut the amount of time needed to perform a process and speed the robot up. Click on the timeline to select a frame.

You would drag the frame to the left to shorten the time.

Deleting Steps

In order to delete a step, simply select on the frame that you want to delete, and click on the delete button.

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Copying Steps

To copy a step, select the frame that you want to copy and click on the copy button. Note that the duration of the copied frame will be the same as the duration of the original frame.

Loop

In order to get the robot to repeat the activity on a loop you would first click on the Home button. Then, you would click on the Loop button and press play.

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UNDERSTANDING INPUTS

Avatar

Video

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SHUTTING DOWN

Shutting down the Linxmotion robot arm is just as important as starting. There have been cases where computers have crashed due to improper shutdown. To shut down the Linxmotion robot arm:

Power off the SS32 and Servos port.

Close the FlowBotics studio software.

Unplug the USB from your computer.

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SUMMARY

The Lynxmotion robot can be used in in a variety of ways. Before you begin, you want to make sure that the robot is in a secure position. The robot can be programmed by using the Flowarm software. You can control robot movements and teach the robot various positions.

LABS

Provide an overview of labs that are required. Include any links to labs that are available for review.

QUIZ

Define how you will ascertain student's knowledge acquisition, i.e., tests, demonstrations, etc. If a test is applicable, then provide questions and answers using MBL Quiz Template.

FURTHER STUDY

Provide brief information here about where students can get more information on this topic (leading organizations, libraries focused on this topic, etc…). Be sure that the information is nonproprietary, reliable, and fairly static (something we won't have to change often).

STATEMENTS

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