

**AP CSP Python with Robots
Lists with CodeBot Assignment**

Name:

Introduction

During this assignment, you will create a new program that uses a list in three ways. You will apply this skill by modifying a previous program.

Warm-Up

What is the list **detected** used for in the **CheckLines** program?

“detected” is a list of Boolean values that track if a line was detected by a line sensor. It has 5 values, one for every line sensor.

What is the data type of the values?

The data type is Boolean.

What are the list **sensors** used for in the **LineFollow1** program?

“sensors” is a list of integers that hold the readings from each line sensor. It has 5 values, one for each line sensor.

What is the data type of the values?

The data type is integer.

Examples and Challenge

Use this space to take notes about the code for example #1.

Notes for example #1

Use this space to take notes about the code for example #2

Notes for example #2

Use this space to take notes about the code for example #3

Notes for example #3

What modification did you make to the SweepLEDs program?

Students indicate how they used a list in SweepLEDs (accessing by index or random values in a list)

Wrap-Up

What did you learn about using a list in a CodeBot program?

Answers will vary.

How does using a list manage complexity? Think about how your program would be different if you didn't use a list? How is it easier to work with when you use a list?

Answers will vary. An answer can include that a list makes it easier to get a random value for the frequency, or helps you map a frequency with a count without having to use a lot of variables. A list can also have a variable length because you can add or delete elements.

Submit your completed **PythonLists1** and modified **SweepLEDs** programs to the teacher.