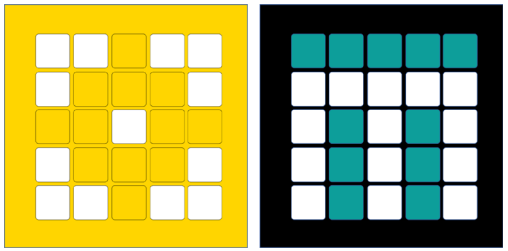
PRIME LESSONS

By the Makers of EV3Lessons



IMPORTING CUSTOM LIBRARIES

BY SANJAY AND ARVIND SESHAN

LESSON OBJECTIVES

- Learn how to input your own libraries of functions in your MicroPython programs

WHY IS THIS USEFUL

- You do not have to copy and paste functions that you create into every program that you write. You can just import your functions into each program.
- When you make a change to your functions, you do not need to change it in every program. You can just change it in the library.

STEP 1: CREATING THE FUNCTION LIBRARY

- Create a new project file
- This project will contain your library of functions.
- In this example, we will create two simple functions. One that shows a left arrow on the light matrix, and one that shows a left arrow

```
def right():
    hub.light_matrix.show_image('ARROW_E')
def left():
    hub.light_matrix.show_image('ARROW_W')
```

- Download the project to a slot on the hub and remember what slot you chose

STEP 2: IMPORTING THE LIBRARY

- Create a second program and copy this function into it

```
def importFile(slotid=0):
    import os, sys  Imports os and system libraries to manage files and modules
    with open("/projects/.slots","rt") as f:
        slots = eval(str(f.read()))  Reads the mapping of slots to files
    with open("/projects/"+str(slots[slotid]["id"])+".py","rt") as f:
        program = f.read()  Loads the slot that you requested into the variable "program"
    try:
        os.remove("/importFile.py")  Deletes the temporary file importFile.py
    except:
        pass
    with open("/importFile.py","w+") as f:
        f.write(program)  Copies your library into the temp file
    if ("importFile" in sys.modules):
        del sys.modules["importFile"]  Unloads any previous version of your library
    exec("from importFile import *")  Imports library
```

- If you type `importFile(slotid=XXX)` and type the slot that you saved the other project to, your functions from the other project will be imported into this project.
- If you try running `left()` or `right()`, the code should work properly.

CREDITS

- This lesson was created by Sanjay Seshan and Arvind Seshan for Prime Lessons
- More lessons are available at www.primelessons.org