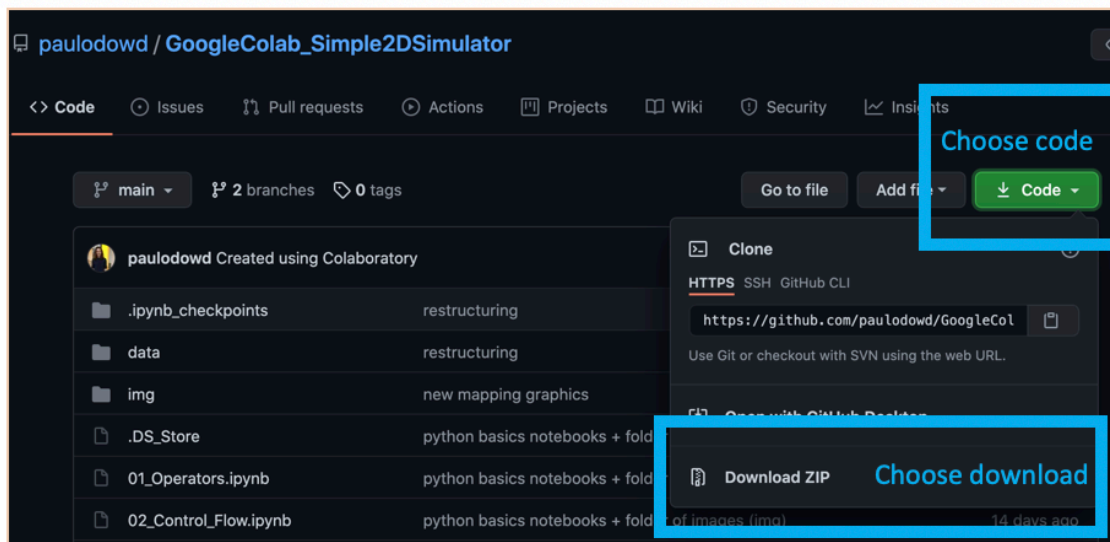


If you find that running the exercise in Google Collab is quite slow, you can use anaconda to complete the exercises instead.

Steps for how to do this are given below...

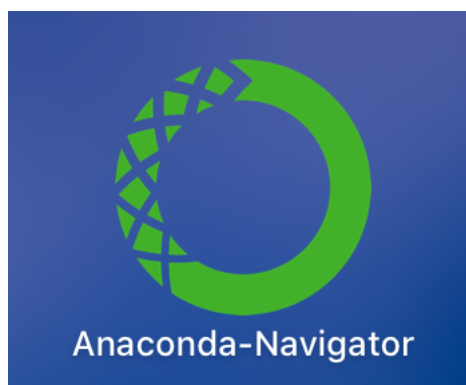
Step 1: Download the zip folder

from github https://github.com/paulodowd/GoogleColab_Simple2DSimulator

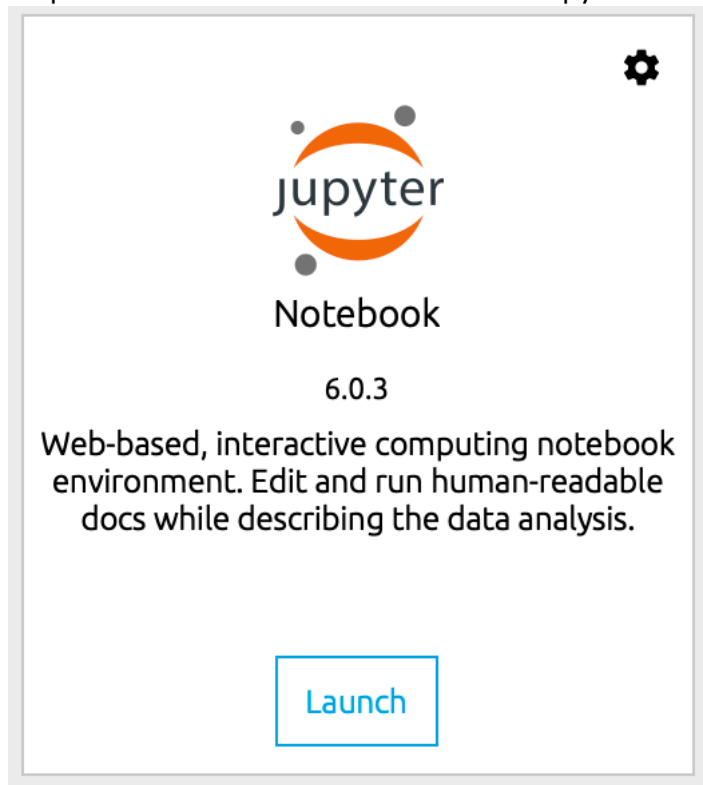


When the zip folder downloads, extract the contents somewhere on your computer.

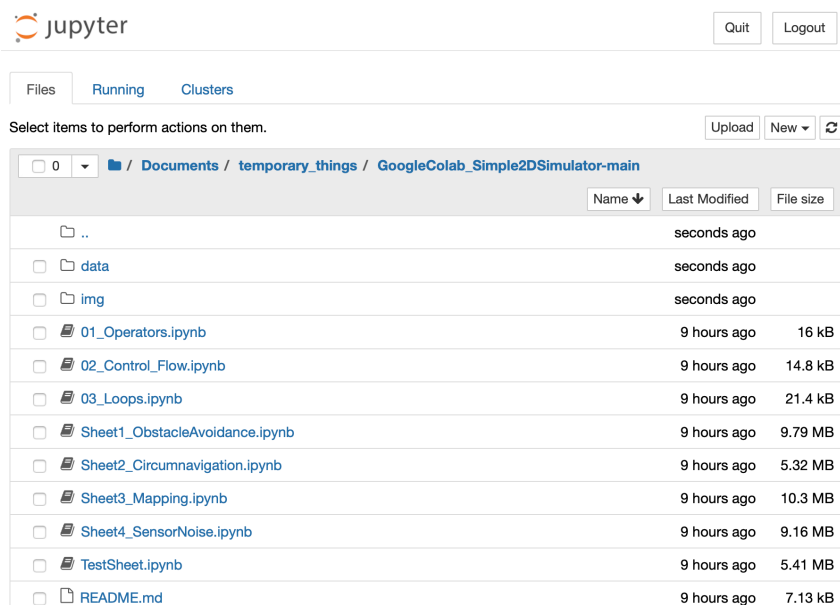
Step 2: Open Anaconda from the programs menu on your computer



Step 3: Click the 'Launch' button next to Jupyter Notebook



Step 4: You should see your computer filesystem displayed in a web browser. Navigate to where you extracted the downloaded files. Click on today's exercise e.g. Sheet1_ObstacleAvoidance.ipynb


The image shows the Jupyter Notebook interface. At the top, there is a 'jupyter' logo and 'Quit' and 'Logout' buttons. Below this, there are tabs for 'Files', 'Running', and 'Clusters'. The 'Files' tab is active, showing a file browser. The path is '/ Documents / temporary_things / GoogleColab_Simple2DSimulator-main'. The file list includes: '..', 'data', 'img', '01_Operators.ipynb', '02_Control_Flow.ipynb', '03_Loops.ipynb', 'Sheet1_ObstacleAvoidance.ipynb', 'Sheet2_Circumnavigation.ipynb', 'Sheet3_Mapping.ipynb', 'Sheet4_SensorNoise.ipynb', 'TestSheet.ipynb', and 'README.md'. The 'Sheet1_ObstacleAvoidance.ipynb' file is highlighted.

| Name | Last Modified | File size |
|--------------------------------|---------------|-----------|
| .. | seconds ago | |
| data | seconds ago | |
| img | seconds ago | |
| 01_Operators.ipynb | 9 hours ago | 16 kB |
| 02_Control_Flow.ipynb | 9 hours ago | 14.8 kB |
| 03_Loops.ipynb | 9 hours ago | 21.4 kB |
| Sheet1_ObstacleAvoidance.ipynb | 9 hours ago | 9.79 MB |
| Sheet2_Circumnavigation.ipynb | 9 hours ago | 5.32 MB |
| Sheet3_Mapping.ipynb | 9 hours ago | 10.3 MB |
| Sheet4_SensorNoise.ipynb | 9 hours ago | 9.16 MB |
| TestSheet.ipynb | 9 hours ago | 5.41 MB |
| README.md | 9 hours ago | 7.13 kB |


Step 5: The exercise will open.

You can run the code in each cell using the Run button :















 jupyter


Sheet1_ObstacleAvoidance (unsaved changes)

 Logout

File Edit View Insert Cell Kernel Widgets Help

Not Trusted Python 3

       Run    Code  



Introduction

Before you start, if you haven't used Python or Google Colab before, there are some exercise sheets to help [available here](#).

In this worksheet we are going to write code so that a simulated robot can avoid colliding with obstacles. The robot will therefore have an observable *behaviour* of **obstacle avoidance**. In the image below, we can see a top-down representation of a robot in blue, and an imagined path out of the yellow obstructions. This is our desirable behaviour.

