

# User Guide to The Moment Program

## Before Running the Program:

- *Pip install pillow* on your command prompt
- *Pip install pygame* on your command prompt

## How do I Start the Program?

Upon opening the file on an IDE (Integrated Development Environment) (e.g: Visual Studio Code, IntelliJ, PyCharm), click onto *[the\_moment.py]* file and run it. Once you have done this, it should automatically start running.

## I am at the Start Menu, now what?

Great job! Now you will be greeted by the whimsical background music and a giant welcome sign. You will see 3 different buttons, as stated by the subheading below (Start, Guide, Unlockables). If you would like to learn about the Principle of Moment, go ahead and press the **Theory** button.



### 1. [Start]

If you would like to go straight to the exciting program, press the **Start** button!

### 2. [Guide]

If you would like to know how to use the program, you can click on the **Guide** button to learn how from the picture instructions!

### 3. [Unlockables]

This is connected to the objects you may use when experimenting with the program, by default, you will only have a red block to work with.

Play one...or all of the mini games to unlock all the objects available to access them!

### 4. [Theory]

Feel free to click this button on the top-left corner of the window to learn and read up about the Principle of Moment before playing with the program.

## I pressed [Start], how about now?

1. Manually input or use the slider provided to set the force exerted by the objects on the beam
2. Use the slider labelled *Pivot position* to adjust the position of the pivot
3. Hit **Start** on the bottom-left corner to run the program!

The screenshot shows a physics simulation interface for moments. It features a central grey area with a black beam balanced on a blue triangular pivot. Two red rectangular weights are placed on the beam. On the left, 'Weight 1' has a force of 45 N and a distance of 55 m. On the right, 'Weight 2' has a force of 51 N and a distance of 45 m. A 'Pivot position' slider is at the bottom of the beam, currently set at 55. The 'General formula:  $M = F \cdot d$ ' is displayed above the 'Moment (Nm): 180.0' field. Navigation buttons include 'Return', 'Quiz', 'Unlockable', 'Start', and 'End'. Numbered callouts 1 through 5 point to the Quiz button, Return button, Start button, Unlockable button, and End button respectively.

### 1. [Quiz]

Once you feel confident or well-versed enough with the concept of moment, you may test yourself by doing clicking on **Quiz** button.

### 2. [Refresh Button]

To refresh the objects panel after completing an **Unlockable**

### 3. [Return]

To return to the Homepage

### 4. [Unlockables]

This will lead you to the mini games to access more objects to use!

### 5. [End]

To close the program

**Happy Experimenting!**