

1. What is a comment?

A comment is a way to add text to your code without it affecting your code. You can use it to explain your code. A comment always starts with a # so the computer knows to ignore it.

2. Importing packages

Packages are a way to give the computer access to different pieces of information. For example `numpy` contains lots of helpful things like functions and random number generators.

3. What is a variable?

A `variable` is a name added to an object; this for example allows you to keep referring to a piece of data and if you want to change it you only need to change the variable.

Example:

```
x=2
```

```
A = x + 1
```

```
B = x - 1
```

Now if I want to change x, I only need to change one line of code.

NOTE: it is important to make sure you do not swap higher and lower case letters as the computer considers them different. E.g `variable1` is not the same as `Variable1` and the computer will return an error.

4. Plotting our cubesats

For each cubesat we enter its coordinates (x),(y),and can choose a colour. Notice the different spelling of colour! You can also choose the shape of the point you plot.

```
cubesat1 = ax.plot((3), (2), 'o', color='r').
```

Colour options: `r` , `g` , `b` , `c` , `m` , `k` , `y` , `w`

Shape options: `*` , `^` , `o` , `s` , `h` , `d`

5. What is a string?

A string is a sequence of characters, these can be letters or numbers and it is indicated in code using `' '`.

6. Finding the possible location on the storm

Create a circle centred at (x,y), enter radius, choose colour, leave unfilled
`circle1 = plt.Circle((3, 2), 3.6, color='b', fill=False)`

What does the area of the circle represent? What does the radius of the circle represent?

7. Make sure it is visible

Change the axis if your circles are not visible on screen to see their overlap. This is for the x axis and you set the (minimum x , maximum x) using `ax.set_xlim((min , max))`

8. Download your graph

Make your graph downloadable using `fig.savefig('namethisfile.png')`. You can change the 'namethisfile' to be more related to the exercise.

9. What is print?

The print function prints out a specified message on screen, this could be numbers or words. In this example we are asking to print `math.dist` which is the distance between two points. How might we use this information to check you have found the location of the storm?

10. Common Errors

Mismatched quotes or incorrect brackets will cause an error, for example, `'o"` or `[s]`
Without quotes will cause an error, for example, `colour = b`
Ensure if you change the name of a variable it is changed for the remaining code