

```
In [ ]: # Strong information using variables
```

```
In [1]: my_favourite_colour = "Black"
```

```
In [2]: my_favourite_colour
```

```
Out[2]: 'Black'
```

```
In [3]: color1,color2,color3 = "Black", "Green", "Orange"
```

```
In [4]: color1
```

```
Out[4]: 'Black'
```

```
In [5]: color2
```

```
Out[5]: 'Green'
```

```
In [6]: color3
```

```
Out[6]: 'Orange'
```

```
In [7]: color4 = color5 = color6 = "Sky Blue"
```

```
In [8]: color4
```

```
Out[8]: 'Sky Blue'
```

```
In [9]: color5
```

```
Out[9]: 'Sky Blue'
```

```
In [10]: color6
```

```
Out[10]: 'Sky Blue'
```

```
In [13]: my_favourite_colour = "Sky Blue"
```

```
In [14]: my_favourite_colour
```

```
Out[14]: 'Sky Blue'
```

```
In [15]: counter = 16
```

```
In [16]: counter = counter + 1
```

```
In [17]: counter
```

```
Out[17]: 17
```

```
In [18]: counter = 20
```

```
In [19]: # Same as `counter = counter + 5`  
counter += 5
```

```
In [20]: counter
```

```
Out[20]: 25
```

```
In [25]: a_variable = 35  
is_today_thrusday = False  
my_favourite_car = "Ferari"  
the_3_musketeers = ["Athos", "Porthos", "Aramis"]
```

```
In [26]: a_variable
```

```
Out[26]: 35
```

```
In [27]: is_today_thrusday
```

```
Out[27]: False
```

```
In [28]: my_favourite_car
```

```
Out[28]: 'Ferari'
```

```
In [31]: the_3_musketeers
```

```
Out[31]: ['Athos', 'Porthos', 'Aramis']
```

```
In [32]: #Build-in data types in python
```

```
In [33]: a_variable = 35  
a_variable
```

```
Out[33]: 35
```

```
In [34]: type(a_variable)
```

```
Out[34]: int
```

```
In [35]: is_today_thrusday = False
```

```
In [36]: is_today_thrusday
```

```
Out[36]: False
```

```
In [37]: type(is_today_thrusday)
```

```
Out[37]: bool
```

```
In [38]: my_favourite_car = "Ferari"  
my_favourite_car
```

```
Out[38]: 'Ferari'
```

```
In [39]: type(my_favourite_car)
```

```
Out[39]: str
```

```
In [40]: the_3_musketeers
```

```
Out[40]: ['Athos', 'Porthos', 'Aramis']
```

```
In [41]: type(the_3_musketeers)
```

```
Out[41]: list
```

```
In [42]: #Integer
```

```
In [43]: current_year = 2021
```

```
In [44]: current_year
```

```
Out[44]: 2021
```

```
In [45]: type(current_year)
```

```
Out[45]: int
```

```
In [46]: a_large_negative_number = -35635479354689087635426738473547463748987
```

```
In [48]: a_large_negative_number
```

```
Out[48]: -35635479354689087635426738473547463748987
```

```
In [49]: type(a_large_negative_number)
```

```
Out[49]: int
```

```
In [50]: #Float
```

```
In [51]: pi = 6.136785546883098
```

```
In [52]: pi
```

```
Out[52]: 6.136785546883098
```

```
In [53]: type(pi)
```

```
Out[53]: float
```

```
In [54]: a_number = 4.0
```

```
In [55]: a_number
```

```
Out[55]: 4.0
```

```
In [56]: type(a_number)
```

```
Out[56]: float
```

```
In [61]: another_number = 5.
```

```
In [62]: another_number
```

```
Out[62]: 5.0
```

```
In [63]: type(another_number)
```

```
Out[63]: float
```

```
In [64]: one_hundredth = 1e-2
```

```
In [66]: one_hundredth
```

```
Out[66]: 0.01
```

```
In [67]: type(one_hundredth)
```

```
Out[67]: float
```

```
In [68]: avogadro_number = 6.02214076e23
```

```
In [69]: avogadro_number
```

```
Out[69]: 6.02214076e+23
```

```
In [70]: type(avogadro_number)
```

```
Out[70]: float
```

```
In [71]: float(current_year)
```

```
Out[71]: 2021.0
```

```
In [72]: float(a_large_negative_number)
```

```
Out[72]: -3.563547935468909e+40
```

```
In [73]: int(pi)
```

```
Out[73]: 6
```

```
In [74]: int(avogadro_number)
```

```
Out[74]: 602214075999999987023872
```

```
In [75]: type(45 * 3.0)
```

```
Out[75]: float
```

```
In [76]: type(45 * 3)
```

```
Out[76]: int
```

```
In [77]: type(10/3)
```

```
Out[77]: float
```

```
In [78]: type(10/2)
```

```
Out[78]: float
```

```
In [79]: type(10//2)
```

```
Out[79]: int
```

```
In [80]: #Boolean
```

```
In [85]: is_today_Sunday = True
```

```
In [86]: is_today_Sunday
```

```
Out[86]: True
```

```
In [88]: type(is_today_thrusday)
```

```
Out[88]: bool
```

```
In [5]: cost_of_ice_bag = 1.25  
is_ice_bag_expensive = cost_of_ice_bag >= 10
```

```
In [6]: is_ice_bag_expensive
```

```
Out[6]: False
```

```
In [7]: type(is_ice_bag_expensive)
```

```
Out[7]: bool
```

```
In [8]: 5 + False
```

```
Out[8]: 5
```

```
In [9]: 3. + True
```

```
Out[9]: 4.0
```

```
In [10]: bool(False)
```

```
Out[10]: False
```

```
In [11]: bool(0)
```

```
Out[11]: False
```

```
In [12]: bool(0.)
```

```
Out[12]: False
```

```
In [19]: bool(1)
```

```
Out[19]: True
```

```
In [14]: bool(-1)
```

```
Out[14]: True
```

```
In [15]: bool(None)
```

```
Out[15]: False
```

```
In [16]: bool("")
```

```
Out[16]: False
```

```
In [17]: bool([])
```

```
Out[17]: False
```

```
In [20]: bool(())
```

```
Out[20]: False
```

```
In [21]: bool({})
```

```
Out[21]: False
```

```
In [22]: bool(set())
```

```
Out[22]: False
```

```
In [23]: bool(range(0))
```

```
Out[23]: False
```

```
In [24]: bool(True),bool(1),bool(2.0),bool("hello"),bool([1,2]),bool((2,3)),bool(range(10))
```

```
Out[24]: (True, True, True, True, True, True, True)
```

```
In [ ]: #None
```

```
In [25]: nothing = None
```

```
In [26]: type(nothing)
```

```
Out[26]: NoneType
```

```
In [27]: #String
```

```
In [28]: today = "Saturday"
```

```
In [29]: today
```

```
Out[29]: 'Saturday'
```

```
In [30]: type(today)
```

```
Out[30]: str
```

```
In [31]: my_favourite_movie = "One Flew over the Cuckoo's Nest"
```

```
In [32]: my_favourite_movie
```

```
Out[32]: "One Flew over the Cuckoo's Nest"
```

```
In [33]: my_favourite_pun = 'Thanks for explaining the word "many" to me,it means a lot.'
```

```
In [34]: my_favourite_pun
```

```
Out[34]: 'Thanks for explaining the word "many" to me,it means a lot.'
```

```
In [35]: another_pun = "The first time I got a universal remote control, I thought to myself\"Thi
```

```
In [36]: another_pun
```

```
Out[36]: 'The first time I got a universal remote control, I thought to myself"This changes ever  
ything".'
```

```
In [37]: yet_another_pun = '''Son: "Dad,can you tell me what a solar eclipse is?"  
Dad:"No sun."'''
```

```
In [38]: yet_another_pun
```

```
Out[38]: 'Son: "Dad,can you tell me what a solar eclipse is?"\nDad:"No sun."'
```

```
In [39]: print(yet_another_pun)
```

Son: "Dad, can you tell me what a solar eclipse is?"
Dad: "No sun."

```
In [40]: a_music_pun = """
Two windmills are standing in a field and one asks the other,
"What kind of music do you like?"

The other says,
"I'm a big metal fan."
"""
```

```
In [41]: print(a_music_pun)
```

Two windmills are standing in a field and one asks the other,
"What kind of music do you like?"

The other says,
"I'm a big metal fan."

```
In [42]: len(my_favourite_movie)
```

```
Out[42]: 31
```

```
In [44]: multiline_string = """a
b"""
multiline_string
```

```
Out[44]: 'a\nb'
```

```
In [45]: len(multiline_string)
```

```
Out[45]: 3
```

```
In [46]: list(multiline_string)
```

```
Out[46]: ['a', '\n', 'b']
```

```
In [47]: today = "Saturday"
```

```
In [48]: today[0]
```

```
Out[48]: 'S'
```

```
In [49]: today[3]
```

```
Out[49]: 'u'
```

```
In [50]: today[7]
```

```
Out[50]: 'y'
```



```
In [51]: today[5:8]
```

```
Out[51]: 'day'
```

```
In [52]: 'day' in today
```

```
Out[52]: True
```

```
In [54]: 'Sun' in today
```

```
Out[54]: False
```

```
In [55]: full_name = "Dreek O'Brein"
```

```
In [56]: greeting = "Hello"
```

```
In [57]: greeting + full_name
```

```
Out[57]: "HelloDreek O'Brein"
```

```
In [58]: greeting + " " + full_name + "!" #additional space
```

```
Out[58]: "Hello Dreek O'Brein!"
```

```
In [59]: today.lower()
```

```
Out[59]: 'saturday'
```

```
In [60]: today.upper()
```

```
Out[60]: 'SATURDAY'
```

```
In [61]: "monday".capitalize() # changes first character to uppercase
```

```
Out[61]: 'Monday'
```

```
In [62]: another_day = today.replace("Satur", "Wednes")
```

```
In [63]: another_day
```

```
Out[63]: 'Wednesday'
```

```
In [64]: today
```

```
Out[64]: 'Saturday'
```

```
In [68]: "Sun,Mon,Tue,Wed,Thu,Fri,Sat".split(",")
```

```
Out[68]: ['Sun', 'Mon', 'Tue', 'Wed', 'Thu', 'Fri', 'Sat']
```

```
In [1]: a_long_line = "          This is a long line with some space before, after,          and some sp
```

```
In [2]: a_long_line_stripped = a_long_line.strip()
```

```
In [3]: a_long_line_stripped
```

```
Out[3]: 'This is a long line with some space before, after,      and some space in the middle..'
```

```
In [4]: # Input variables
cost_of_ice_bag = 1.25
profit_margin = .2
number_of_bags = 500

# Template for output message
output_template = """If a grocery store sells ice bags at $ {} per bag, with a profit ma
then the total profit it makes by selling {} ice bags is $ {}."""

print(output_template)
```

If a grocery store sells ice bags at \$ {} per bag, with a profit margin of {} %, then the total profit it makes by selling {} ice bags is \$ {}.

```
In [5]: # Inserting values into the string
total_profit = cost_of_ice_bag * profit_margin * number_of_bags
output_message = output_template.format(cost_of_ice_bag, profit_margin*100, number_of_ba

print(output_message)
```

If a grocery store sells ice bags at \$ 1.25 per bag, with a profit margin of 20.0 %, then the total profit it makes by selling 500 ice bags is \$ 125.0.

```
In [ ]:
```