

# First thing's first

## All Around the World

Display the 8th character in upper case on the console

# First thing's first

```
print('All around the world'[7].upper())
```

# Nation Code

## Python Fundamentals

Variables

{codenation}<sup>®</sup>

# Learning Objectives

- To understand how variable works in Python
- To understand and use operators to store values and do calculations
- To use snake\_case when naming variables
- To understand how to access data in variables

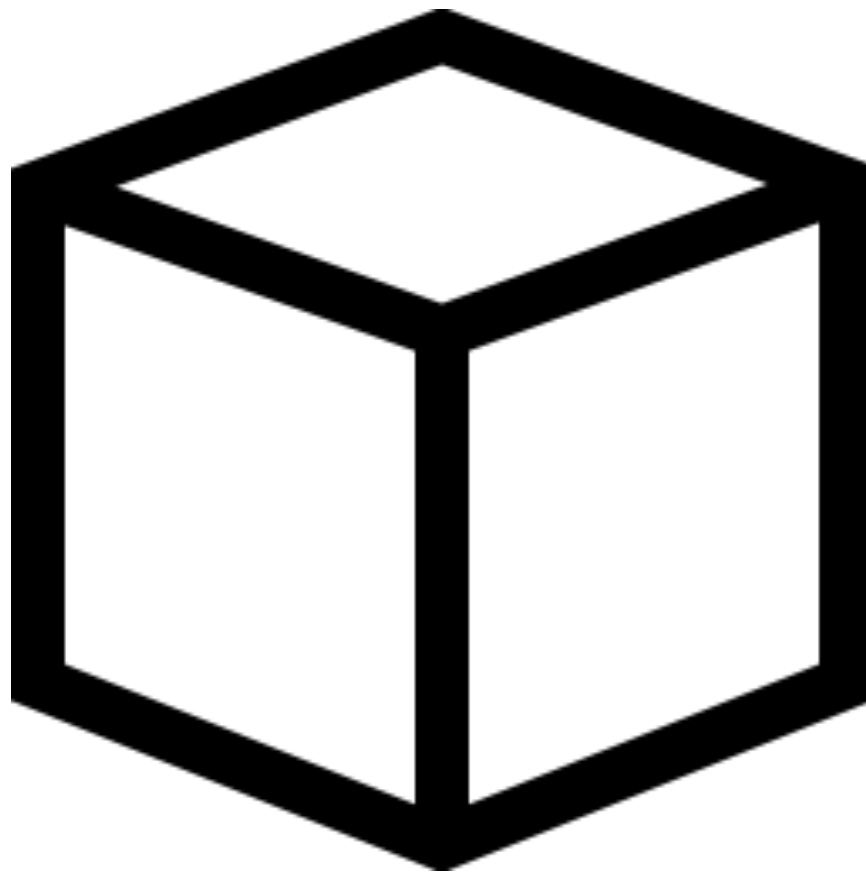
**Things are getting  
interesting**

# Introducing

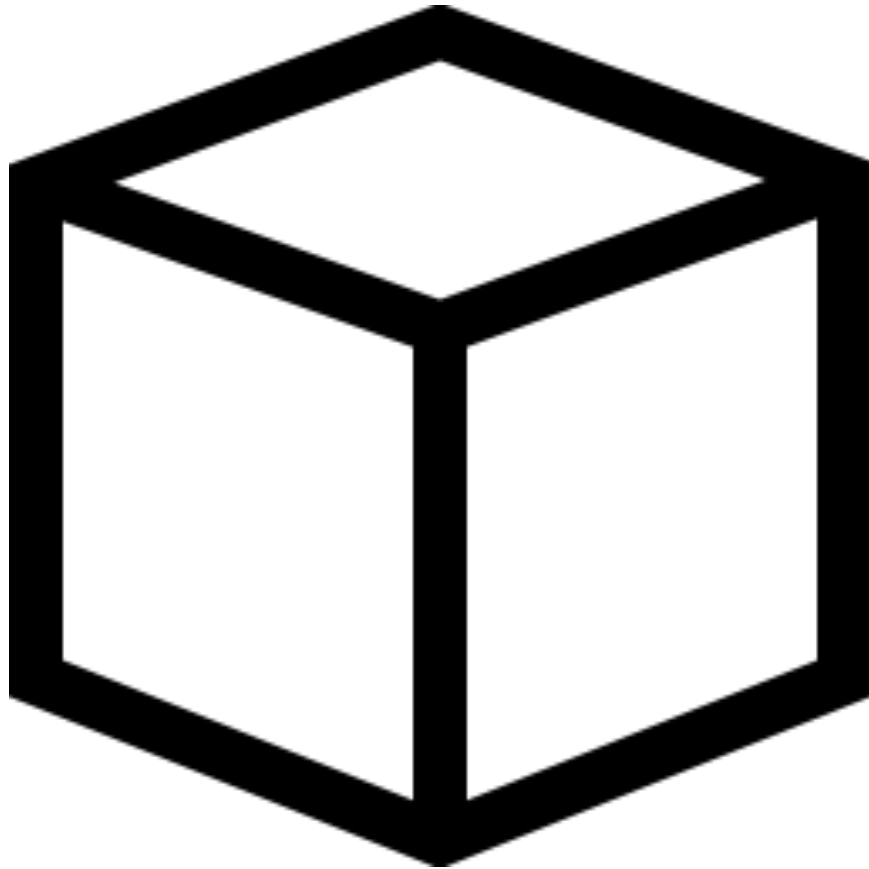
# Variable

**They're like boxes.**

**Not very technical that is it?**

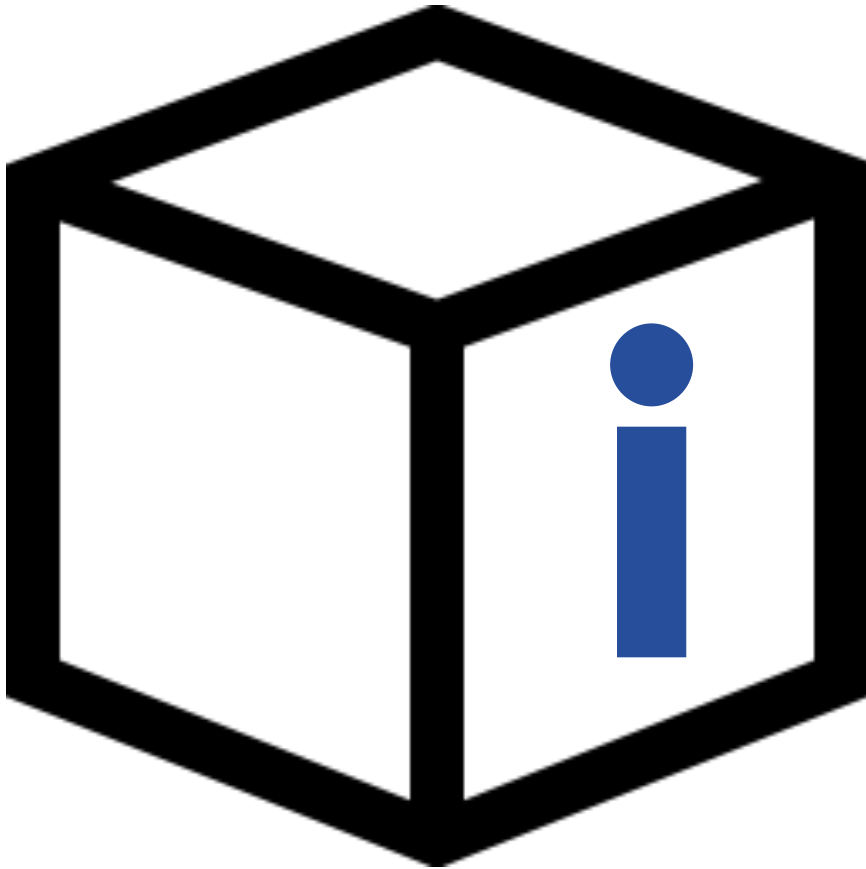






**We store items in boxes to retrieve later**

**Different items can be stored in the box  
at different times**



**We store items in boxes to retrieve later**

**Different items can be stored in the box at different times**

**In code, we give variables names so we can access things inside them. Exactly like saying "get me that thing from the blue box over there"**

**Imagine a company  
writing a letter to its  
customers**

**It'd be a pain if we had to  
write manually type every  
customers name in**

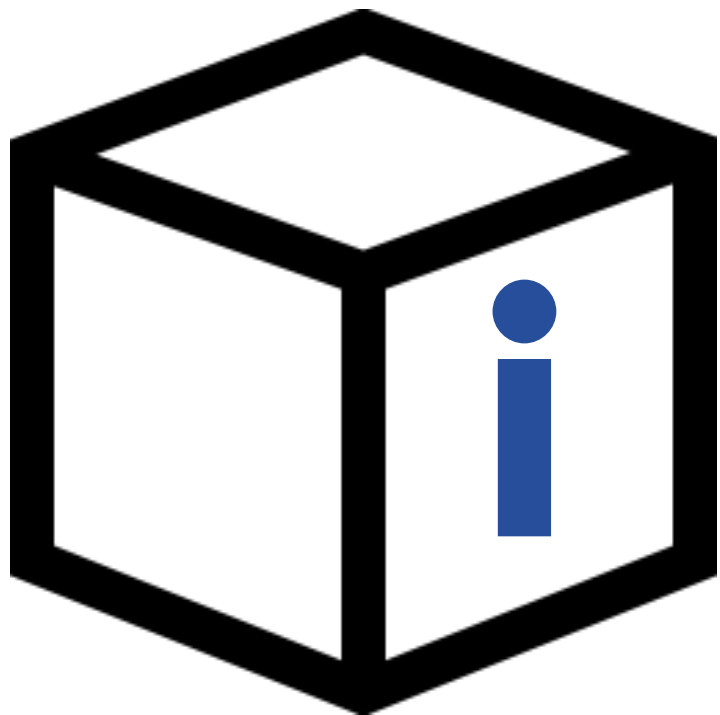
**We want to be able  
to reuse code**

**Dear Samantha Basak ...**

**should be**

**name = 'Samantha Basak'**

**Dear [name] ...**



## So variables...

- 1) allow us to store data inside them
- 2) access them via a name
- 3) then place new data in them whenever we want

**We don't need to tell  
Python what kind of data  
will be stored in a  
variable**



Because it's a "loosely  
typed" language

**So if I want to store my name in a variable, what kind of data type would that be?**

**Yes, string. You're  
just too good.**

**name = 'Sam'**

**Create a variable called name  
which holds the string 'Sam'**

All we have to do is  
give our variable a  
name and assign it a  
value

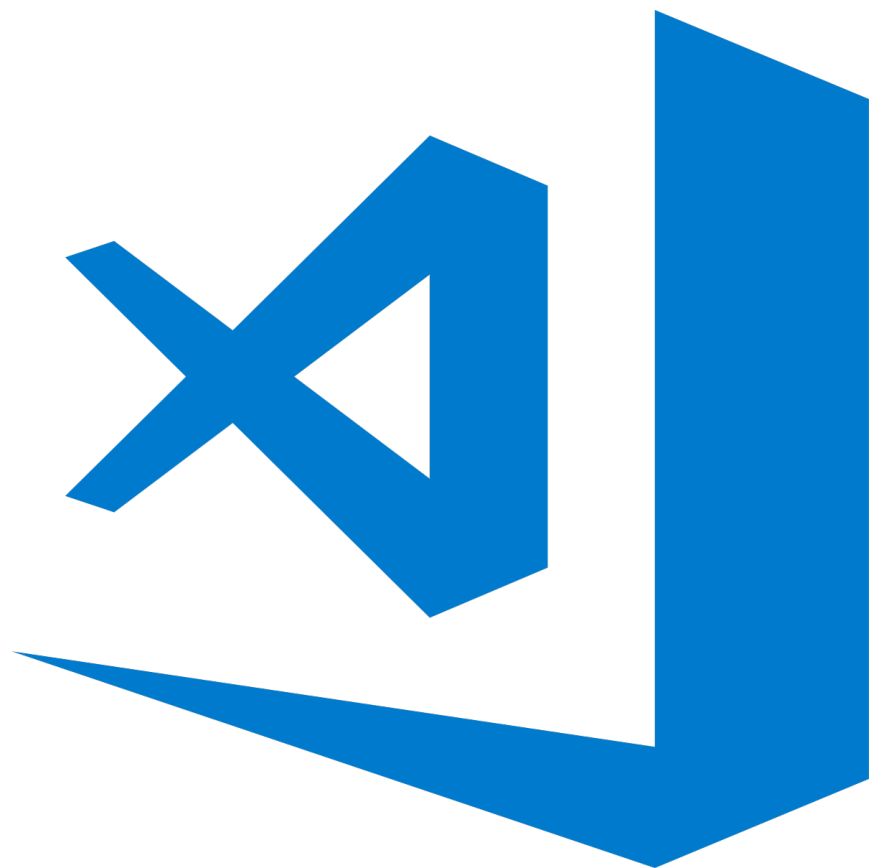
```
my_name = 'Sam'  
my_age = 30  
likes_soup = False
```

**You can change what  
is stored in a variable**

`likes_soup = False`

`likes_soup = True`





**To VS Code**

# What data types?

**String**

**Boolean**

**None**

**Integer**

**Floating point**

**Time for sum maths**



+

-

\*

\*\*

/

%

# Arithmetic Operators for calculations

=

\*=

+=

/=

-=

# Assignment Operators to store values



=

**Assign operator**

**i** = 10

**Assigning i to the number 10**





+

# Addition

# Assigning i to the number 10

**i** = 10

Then add 2 to the value of i

i = 10

i = i + 2

// i = 12

\*Arithmetic operator

# Then add 2 to the value of i

`i = 10`

`i += 2`

`// i = 12`

\*Assignment operator



+

-

\*

\*\*

/

%

Check out  
these  
arithmetic  
operators



=

\*=

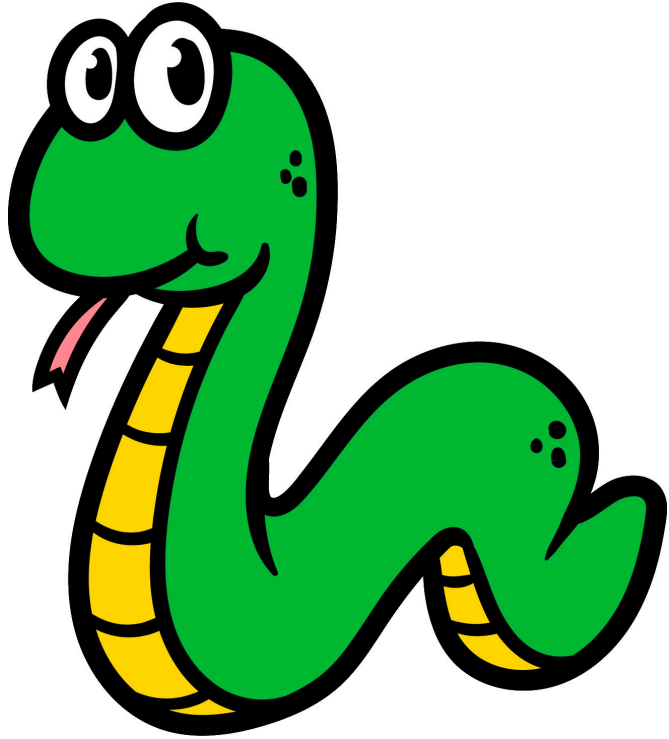
+=

/=

-=

And check out  
these  
assignment  
operators

**Have you noticed we've stuck to a particular convention when naming variables?**



**favourite\_drink  
this\_number  
first\_time**



...It's called **snake\_case**

**This is Python after all**

**It's best practice and  
enhances code  
readability**

# How to access data in variables

# print()

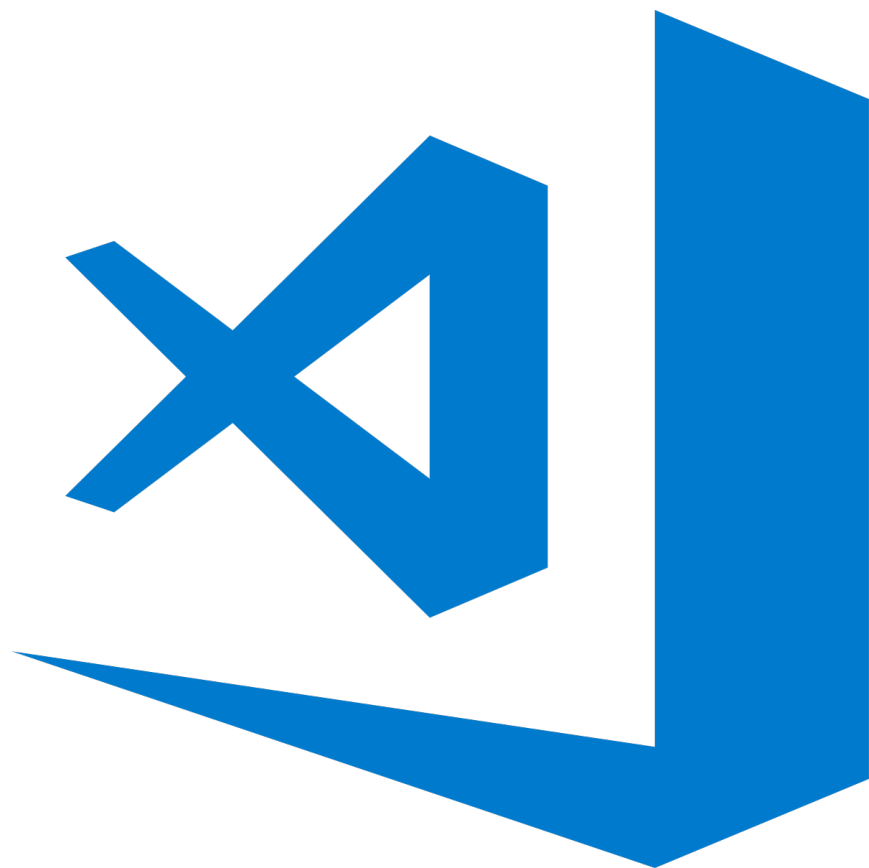


**print('we')**

A large, thick red 'X' is drawn over the text 'print('we')', indicating that this code is incorrect or invalid.

```
favourite_drink = 'wine'
```

```
print(favourite_drink)
```



**To VS Code**

```
favourite_drink = 'wine'  
print('My favourite drink is ' + favourite_drink)
```



**You can put variables  
inside strings to create  
sensible outputs**

```
favourite_drink = 'wine'
```

```
print('My favourite drink is {}'.format(favourite_drink))
```

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# Activity 1:

Create a program that stores someone's name, age and favourite colour that prints this out in a complete sentence

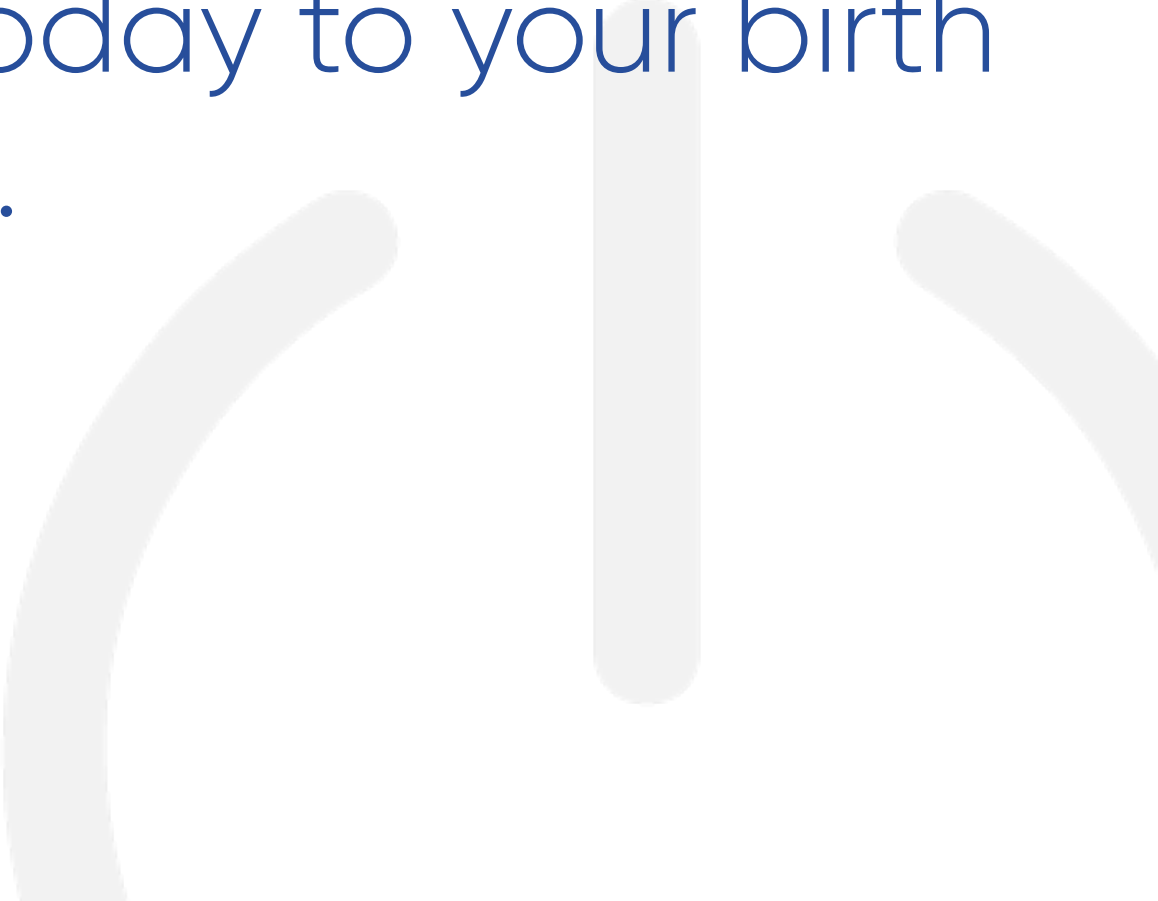
## Activity 2:

Create a program that stores what you eat today for breakfast, lunch and dinner, print these out.

Update each of these variables to what you will eat tomorrow, print these out.

## Activity 3:

Create a program that calculate the number of days from today to your birth date and print this out.



# Activity 4:

- (1) Create a 9 variables space1, space2... space9
- (2) Assign either the value 'x', 'o', ' ' to each of these variable
- (3) Insert the variables into the board using format and make your board look like the one displayed

