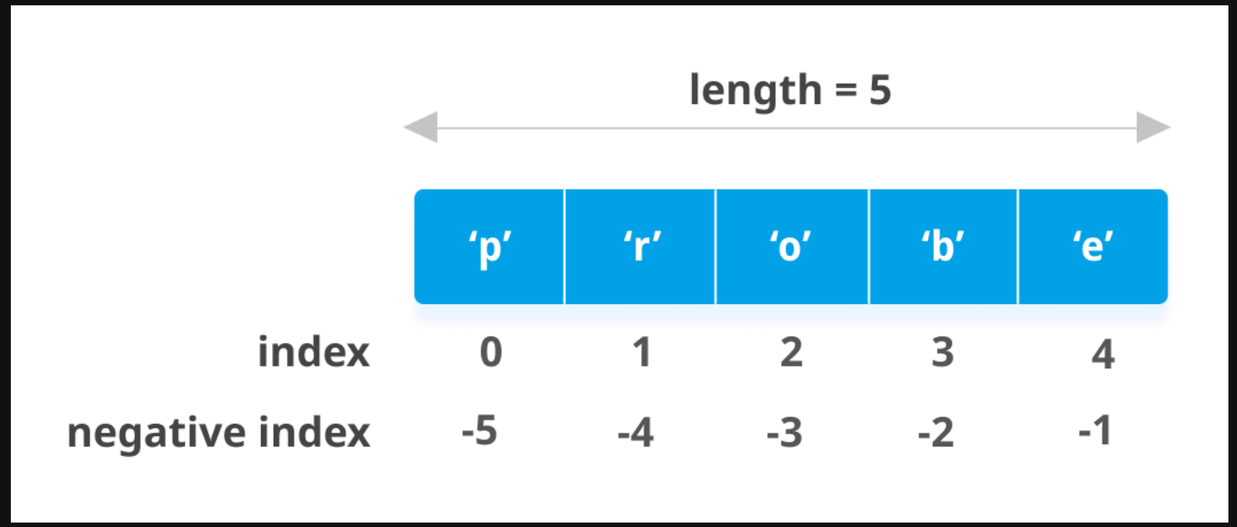
COMP1531

2.2 - Python - Dictionaries

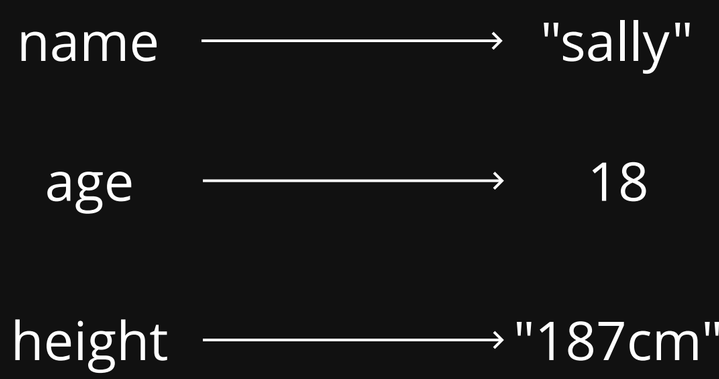
Python - Dictionaries

Lists are **sequential containers** of memory. Values are referenced by their **integer index** (key) that represents their location in an **order**



Python - Dictionaries

Dictionaries are **associative containers** of memory. Values are referenced by their **string key** that *maps* to a value



Python - Dictionaries

Dictionaries are **associative containers** of memory. Values are referenced by their **string key** that *maps* to a value

dict_basic_1.py

```
1 userData = {}
2 userData["name"] = "Sally"
3 userData["age"] = 18
4 userData["height"] = "187cm"
5 print(userData)
```

```
1 {'name': 'Sally', 'age': 18, 'height': '187cm'}
```

Python - Dictionaries

There are a number of different ways we can construct and interact with dictionaries

dict_basic_2.py

```
1 userData = {
2   'name' : 'Sally',
3   'age' : 18,
4   'height' : '186cm', # Why a comma?
5 }
6 userData['height'] = '187cm'
7 print(userData)
```

```
1 {'name': 'Sally', 'age': 18, 'height': '187cm'}
```

Python - Dictionaries

Basic loops are over **keys** not **values:**

How would we modify this to print out the values instead?

dict_loop.py

```
1  userData = [
2      {
3          'name' : 'Sally',
4          'age' : 18,
5          'height' : '186cm',
6      }, {
7          'name' : 'Bob',
8          'age' : 17,
9          'height' : '188cm',
10     },
11 ]
12 for user in userData:
13     print("Whole user: ", user)
14     for part in user:
15         print(f"  {part}")
```

```
1 Whole user:  {'name': 'Sally', 'age': 18, 'height': '186cm'}
2   name
3   age
4   height
5 Whole user:  {'name': 'Bob', 'age': 17, 'height': '188cm'}
6   name
7   age
8   height
```

Python - Dictionaries

dict_loop_2.py

```
1  userData = {'name' : 'Sally','age' : 18, \
2              'height' : '186cm'}
3
4  for user in userData.items():
5      print(user)
6  print("====================")
7
8  for user in userData.keys():
9      print(user)
10
11 print("====================")
12 for user in userData.values():
13     print(user)
```

```
1  ('name', 'Sally')
2  ('age', 18)
3  ('height', '186cm')
4  ====================
5  name
6  age
7  height
8  ====================
9  Sally
10 18
11 186cm
```

Python - Dictionaries

Q. Write a python program that takes in a series of words from STDIN and outputs the frequency of how often each vowel appears