CS50P - Lecture 4 - Libraries

JAN 29 2023

In [ ]:
```
# these 2 are the same, they all looks good if you have a good reason
```

In [ ]:
```
# 1 import all function from random module
# can trace the module

import random

coin = random.choice(["heads", "tails"])
print(coin)
```

In [ ]:
```
# 2 import choice alone from random module
# can save resources and make code run faster
from random import choice
coin = choice(["heads", "tails"])
print(coin)
```

MODULE - Random

https://docs.python.org/3/library/random.html

In [ ]:
```
# random.randint(1, 10)
# random.choice(["heads", "tails"])
# random.shuffle(seq) inplace
```

MODULE - Statistics

https://docs.python.org/3/library/statistics.html

MODULE - Sys - Command-Line Arguments

https://docs.python.org/3/library/sys.html

In [ ]:
```
import sys
print(type(sys.argv))
```

```
<class 'list'>
```

In [ ]:
```
if len(sys.argv) < 2: # one arg, which is file name, such as main.py
    print(sys.argv[0])
    sys.exit("Too few arguments")
elif len(sys.argv) > 2: # more arg
    sys.exit("Too many arguments")

print("hello, my name is", sys.argv[1])  # user's input

# sys.argv   type is list
# sys.argv[0] is file_name
# sys.argv[1] is user input

# sys.exit("") exit the running code

# reason for use sys.argv is specific for programme
# - get input more quick
# - improve productivity
```

In [ ]:
```
# use " " can take the input as one item
# in terminal:
#             $ python file.py "xx xx"
```

Packages

https://pypi.org/

In [ ]:
```
#pip install package
```

APIs

In [ ]:
```
import requests

response = requests.get("https://itunes.apple.com/search?entity=song&limit=5
o = response.json()
for result in o["results"]:
    print(result["trackName"])
```

```
See You Again (feat. Charlie Puth)
See You Again (feat. Charlie Puth)
I Hope (feat. Charlie Puth)
I Hope (feat. Charlie Puth)
Sober (feat. Charlie Puth)
```

In [ ]:
```
# json.dumps() to make the output more readable
import json
print(json.dumps(response.json(), indent=2))
```

About **name == "main"**

In [ ]:
```python
import module

if __name__ == "__main__":
    print("Run directly")
else:
    print("Run by imported module")

# __name__ is a variable to store the module
# if the module is current running, __name__ ==  "__main__"
```

STYLE

In [ ]:
```python
# try install pycodestyle
# try install black
# in terminal: black main.py
```