Python Programming

Exception Handling

Mostafa S. Ibrahim
Teaching, Training and Coaching since more than a decade!

Artificial Intelligence & Computer Vision Researcher
PhD from Simon Fraser University - Canada
Bachelor / Msc from Cairo University - Egypt
Ex-(Software Engineer / ICPC World Finalist)

Try Catch

- The try and except block can help us prevent the exceptions from stopping the code
- **Try**: Run this code
- **Except**: Jump and Run this code if faced stopping errors

```
2   def read_int(msg):
3       try:
4           # Please execute this code
5           age = input(msg)  # 'Hey'
6           age = int(age)
7       except:
8           # if a crash, come here to clean!
9           print('Invalid input')
10          age = None
11
12      return age
13
14
15  age = read_int('Enter age: ')
16  print(age)
17
18  """
19  Enter age: aaa
20  Invalid input
21  None
22  """
```

Else

- The else is an optional part
- Its block will be executed ONLY if the except block is not executed
  - E.g. no errors occurred

```
2   def read_int(msg):
3       try:    # Please execute this code
4           age = input(msg)  # 'Hey'
5           age = int(age)
6       except: # if a crash, run to handle!
7           print('Invalid input')
8           age = None
9       else:   # optional: if no crash, run
10          print('Thanks!')
11      return age
12
13  age = read_int('Enter age: ')
14  print(age)
15
16  """
17  Enter age: 10
18  Thanks!
19  10
20  """
```

Finally

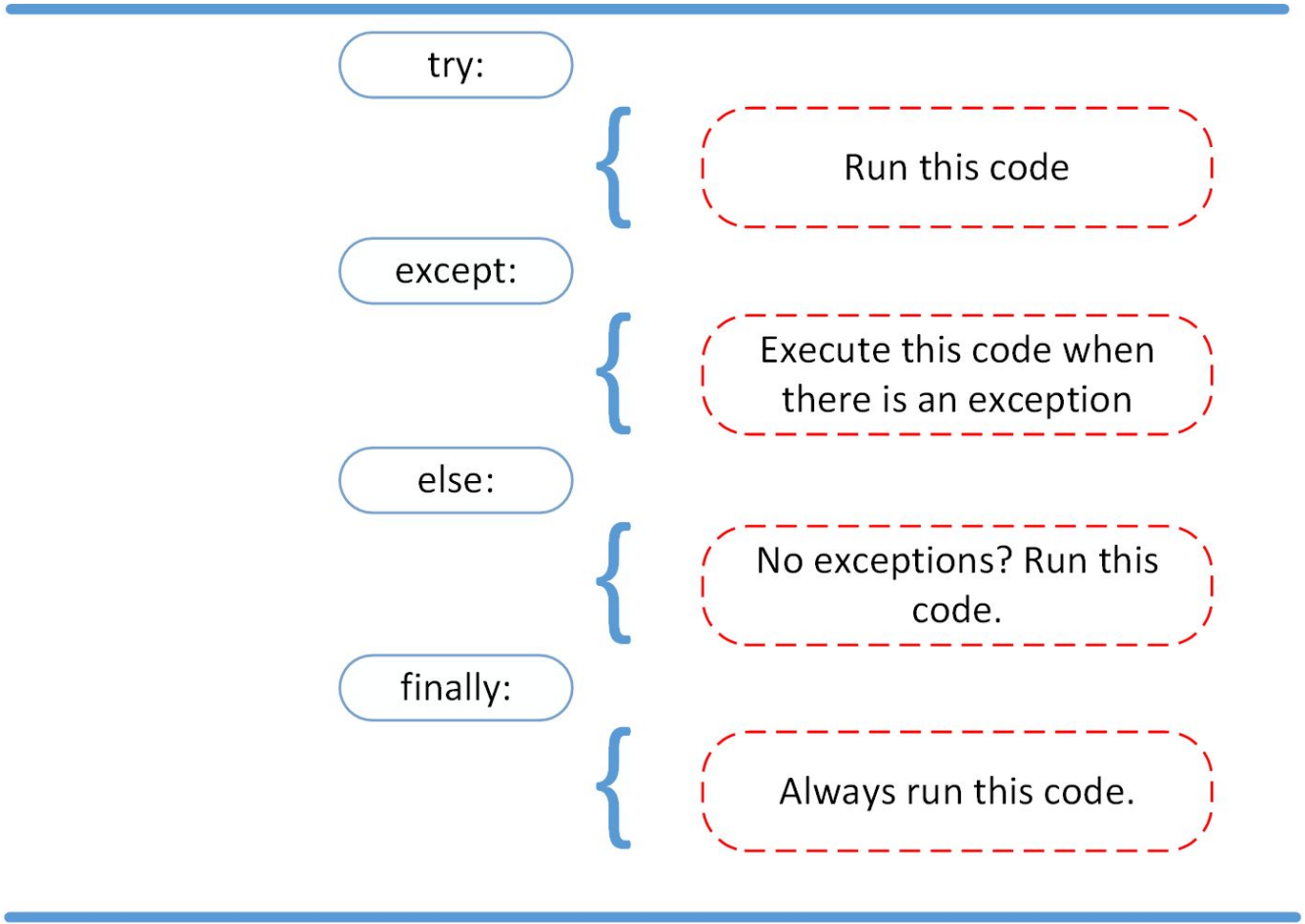
- The finally block is run in ALL cases
- Useful for final cleaning
  - E.g. close a file
- Both else and finally are optional
  - You can have one of both of them

```
Enter age: aaa
Invalid input
End of Func
None

Thanks!
End of Func
20
```

```
2   def read_int(msg):
3       try:    # Please execute this code
4           age = input(msg)  # 'Hey'
5           age = int(age)
6       except: # if a crash, run to handle!
7           print('Invalid input')
8           age = None
9       else:   # optional: if no crash, run
10          print('Thanks!')
11      finally:    # optional: run in all cases
12          print('End of Func')
13
14      return age
15
16  age = read_int('Enter age: ')
17  print(age)
```

Overall



Img src

Your turn

- Try to open file that doesn’t exist
- Try to divide by zero
- Try to access a list outside its range

"Acquire knowledge and impart it to the people."

"Seek knowledge from the Cradle to the Grave."