The Art of Persistence in Python

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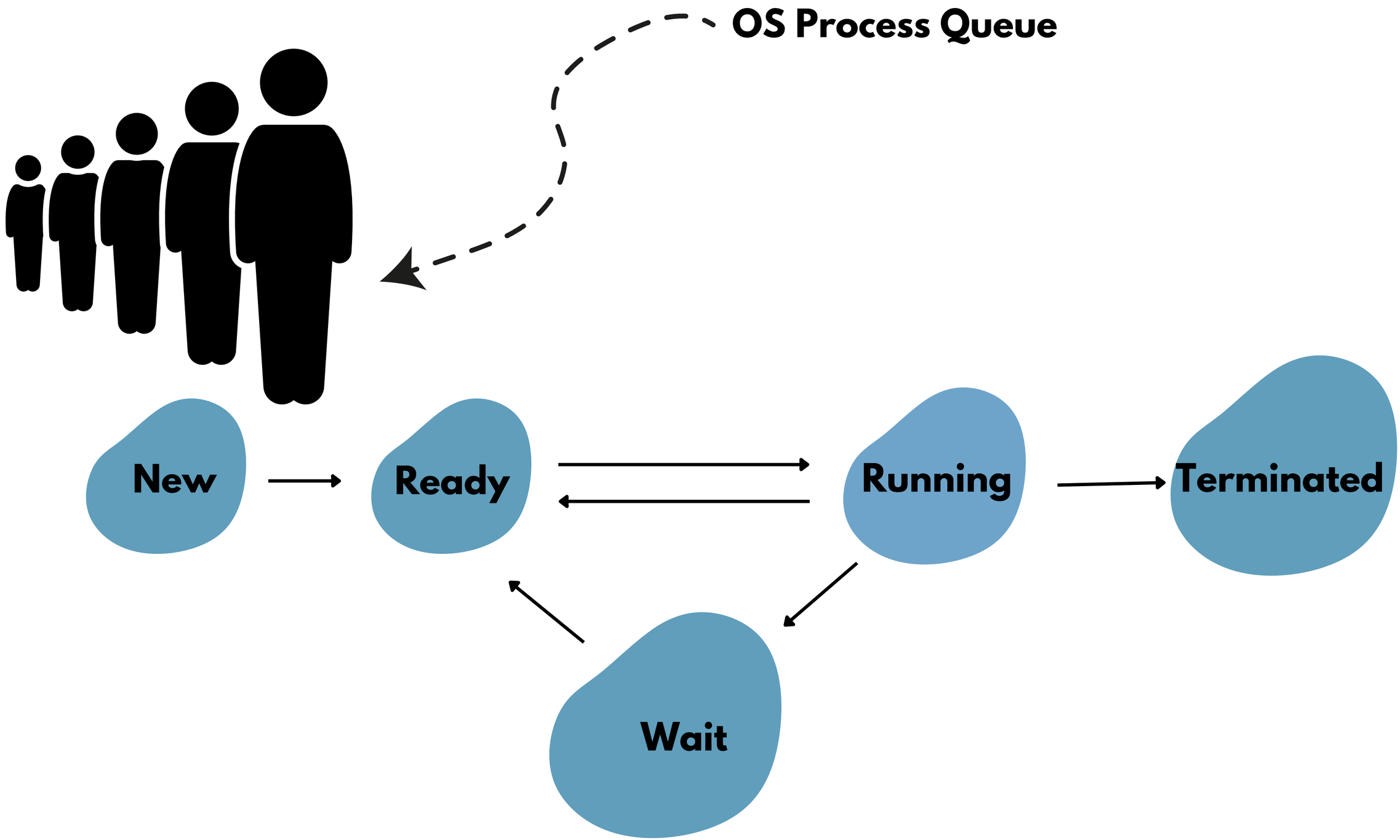
OS Process Queue
New
Ready
Running
Terminated
Wait

Lost forever

What happens to the data once the lifecycle of the program is over?

How to persist data even after the end of the program in Python?

Introducing File IO in Python

```
# Open the file with write 'w' mode
file = open('example.txt', 'w')

# Write some data to the file
file.write('Persisting data in files using Python')

# Close the file
file.close()
```

Python provides methods to read and write files.

Reading a file in Python

```
# Open the file in read 'r' mode
file = open('example.txt', 'r')

# Read the file
print(file.read())

# Close the file
file.close()
```

Python provides methods to read and write files.

Deleting a file in Python

```
import os

os.remove("file_name")
```

Python provides methods to delete files.

Overwriting a file in Python

```
# Open the file in write 'w' mode
file = open('example.txt', 'w')

# This will overwrite the existing contents
file.write('Overwriting contents in Python')

# Close the file
file.close()
```

Python provides methods to overwrite files.

Appending a file in Python

```
# Open the file in write 'w' mode
file = open('example.txt', 'a')

# This will overwrite the existing contents
file.write('Appending contents i contents in Python')n
Python')

# Close the file
file.close()
```

Python provides methods to overwrite files.

binary file in Python

```
# Open the file in binary write 'wb' mode
file = open('example.bin', 'wb')

# Write binary data to the file
file.write(b'Writing binary data in Python')

# Close the file
file.close()
```

Python provides methods to write binary files.

Reading an img in Python

```
import cv2
# Load an image using 'imread'
img = cv2.imread('example.jpg')

# Display the image using 'imshow'
cv2.imshow('image',img)
cv2.waitKey(0)
cv2.destroyAllWindows()
```

OpenCV provides imread function to read an image file.

Reading csv using Pandas

```
import pandas as pd

# Read csv file
df = pd.read_csv('example.csv')

# Display the DataFrame
print(df)
```

Pandas provides read_csv function to read csv file.

Writing csv using Pandas

```
import pandas as pd

# Create a DataFrame
df = pd.DataFrame({'A': [1, 2, 3], 'B': [4, 5, 6]})

# Write DataFrame to csv
df.to_csv('example.csv', index=False)
```

Pandas provides to_csv function to write csv file.

Reading a json file

```
import json

# Open the json file
with open('example.json', 'r') as file:
  # Load json data from file
  data = json.load(file)

print(data)
```

Python's json module lets us handle json files.

Writing a json file

```
import json

# Some data dictionary
data = {'Name': 'Zophie', 'Species': 'cat', 'age': '8'}

# Open the json file
with open('example.json', 'w') as file:

  # Write json data into file
  json.dump(data, file)
```

Python's json module lets us handle json files.

Writing data using pickle

```
import pickle

# Some data
data = {'key': 'value'}

# Open the pickle file
with open('example.pkl', 'wb') as file:
  # Dump data to the pickle file
  pickle.dump(data, file)
```

Pickle module is used to serialize and deserialize python objects.

Reading back pickled data

```
import pickle

# Open the pickle file
with open('example.pkl', 'rb') as file:
  # Load data from the pickle file
  data = pickle.load(file)
print(data)
```

Pickle module is used to serialize and deserialize python objects.