

Quickly Analyzing Data With Parallel Processing: Takeaways



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Syntax

- Creating a pool of threads:

```
import concurrent.futures

def word_length(word):
    return len(word)

pool = concurrent.futures.ThreadPoolExecutor(max_workers=10)

lengths = pool.map(word_length, ["Hello", "are", "you", "thinking", "of", "becoming",
"a", "polar", "bear", "?"])
```

- Creating a pool of processes:

```
import concurrent.futures

def word_length(word):
    return len(word)

pool = concurrent.futures.ProcessPoolExecutor(max_workers=10)

lengths = pool.map(word_length, ["Hello", "are", "you", "thinking", "of", "becoming",
"a", "polar", "bear", "?"])
```

Concepts

- The `threading` and `multiprocessing` packages are widely used and gives you more low-level control.
- The `concurrent.futures` package allows for a simple and consistent interface for both threads and processes.
- `concurrent.futures.ThreadPoolExecutor.map()` method returns a generator, but you can just call it using `list` to force it to evaluate.

- Threads and processes are using a paradigm called MapReduce, which is utilized in data processing tools like Apache Hadoop and Apache Spark.

Resources

- [Debugging using the multiprocessing module](#)
- [Documentation for concurrent.features module](#)



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