Redis with Python - *Pub/Sub* and *Message Queueing* in Python

PYCON MEETUP 2018
#PyConPakistan
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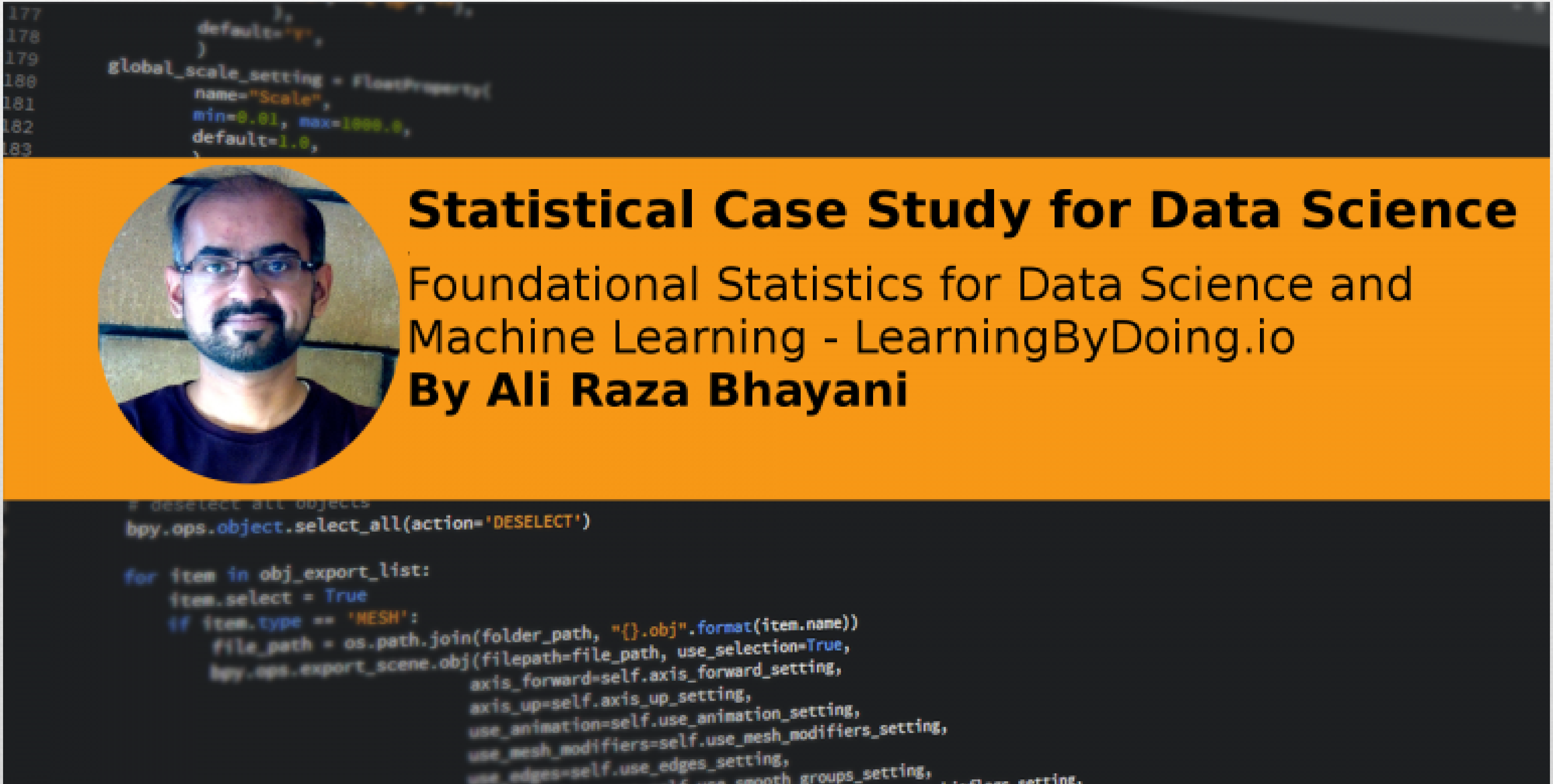
Data Science Case Study posted on ***LearningByDoing.IO***



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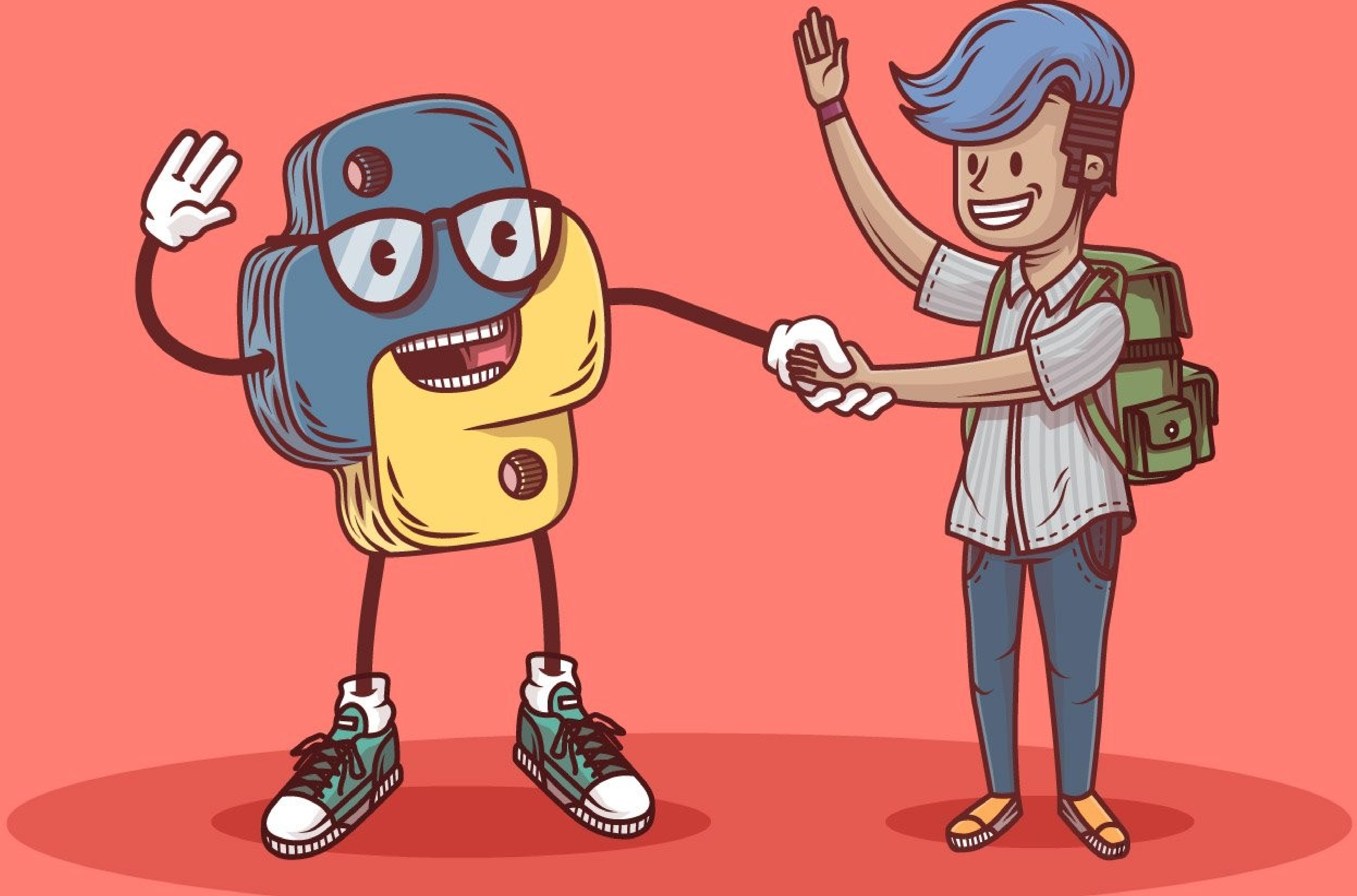


What is Redis?

Redis is an open source (BSD licensed), in-memory data structure store, used as a database, cache and message broker.

How Redis is Different?

One of the big differences between Redis and other NoSQL databases is the data structures that Redis provides. Instead of working with a table abstraction, it uses different Data Structures

Redis — Data Structures

It supports data structures such as strings, hashes, lists, sets, sorted sets with range queries etc.

Redis - Performance

PERFORMANCE

Outstanding performance! Redis works with an in-memory dataset

Redis — Data Persistence

PERSISTENCE

You can persist it either by dumping the dataset to disk every once in a while, or by appending each command to a log.

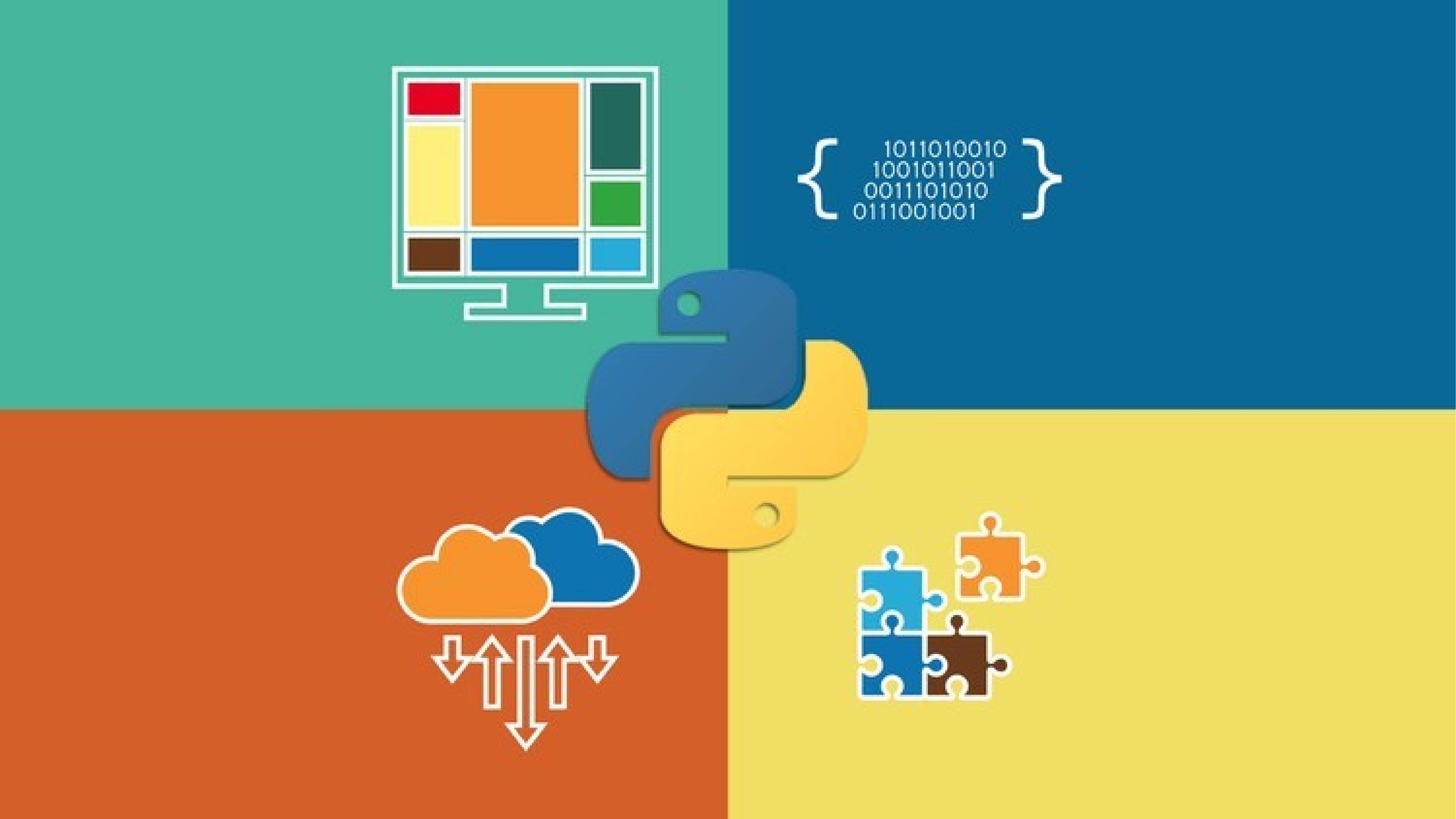
Companies Using Redis

TWITTER - Utilizing the list data structure, Twitter stores the 800 most recent incoming tweets for a given user

PINTEREST - Stores the user follower graphs in a Redis cluster where data is sharded across hundreds of instances

GITHUB - Github uses Redis for their job queueing needs.

WHY PYTHON ?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Python and Redis

Redis — Installation

```
wget http://download.redis.io/releases/redis-stable.tar.gz

tar xzf redis-stable.tar.gz

cd redis-stable
```

Redis — Python

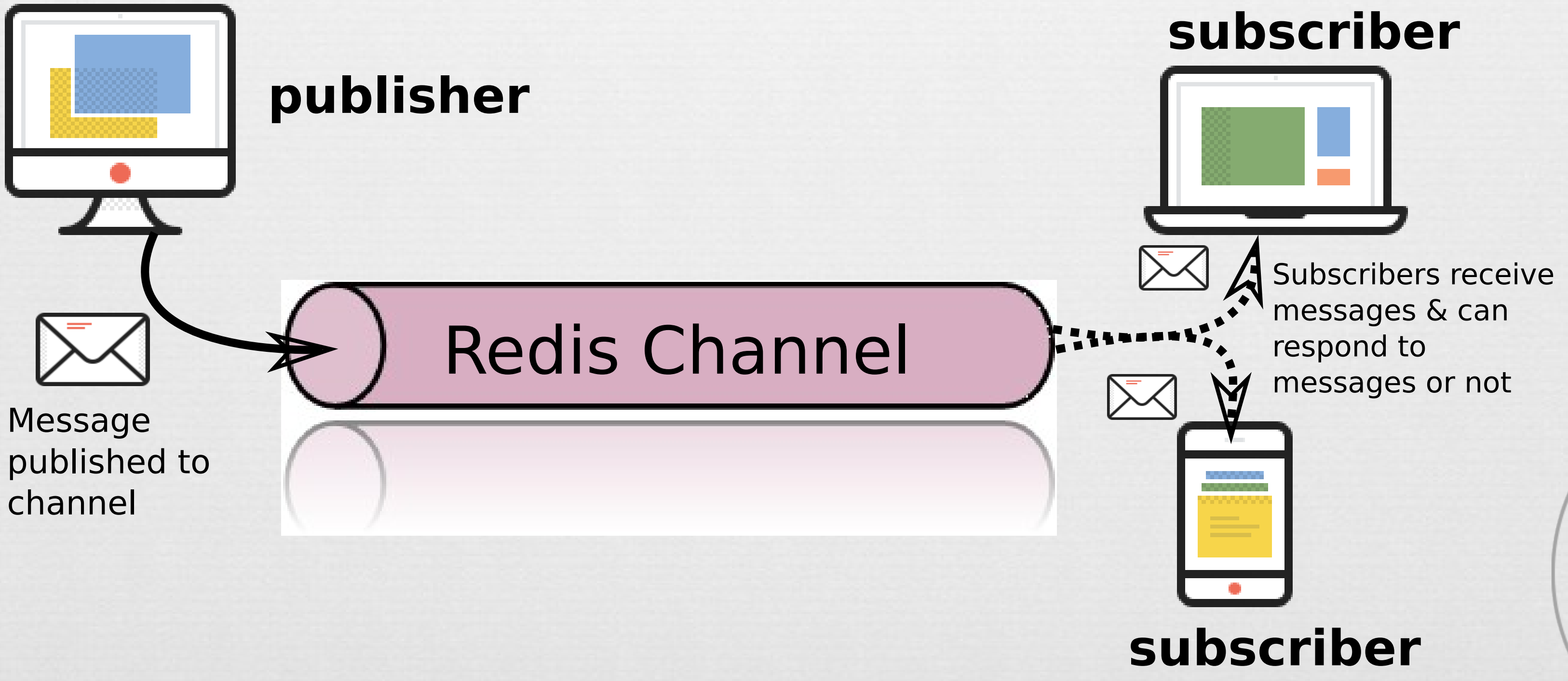
```
pip install redis
```

(redis-py requires a running Redis server)

Redis — Pub/Sub

Pub/Sub Messaging Pattern

Redis Pub/Sub uses a message passing system that message senders - called **publishers** - post a message to a channel that the message receivers - called **subscribers** can respond to messages without either the publishers or subscribers knowing any details about each other.



publisher

Redis Channel

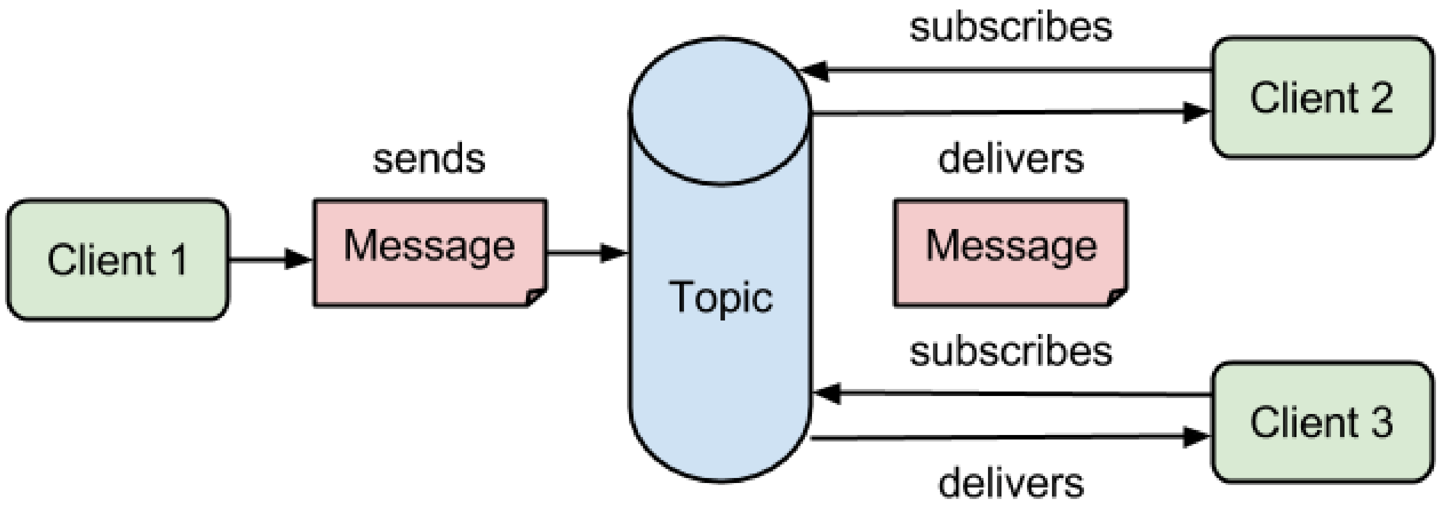
Message published to channel

subscriber

Subscribers receive messages & can respond to messages or not

subscriber

Redis – Pub/Sub

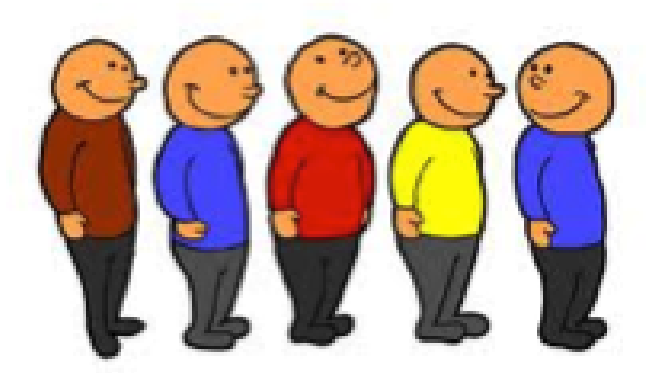


Pub/Sub, is characterized by listeners subscribing to channels, with publishers sending binary string messages to channels

Redis — Pub/Sub Python Hands On Implementation

Redis — Queue

Redis — Queue



RQ (Redis Queue) is a simple Python library for queueing jobs and processing them in the background with workers.

```
pip install rq
```

Task Queues in Python - Hands On Implementation

QUESTIONS

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