DISTRIBUTED SYSTEMS

Trabalho 1

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PROJECT

Backend of TikTok like system, named TuKano.

Users publish *shorts*, which include a small video.

Users can follow other users.

There is a feed for each user, containing the *shorts* of all users she follows, ordered in reverse chronological time.

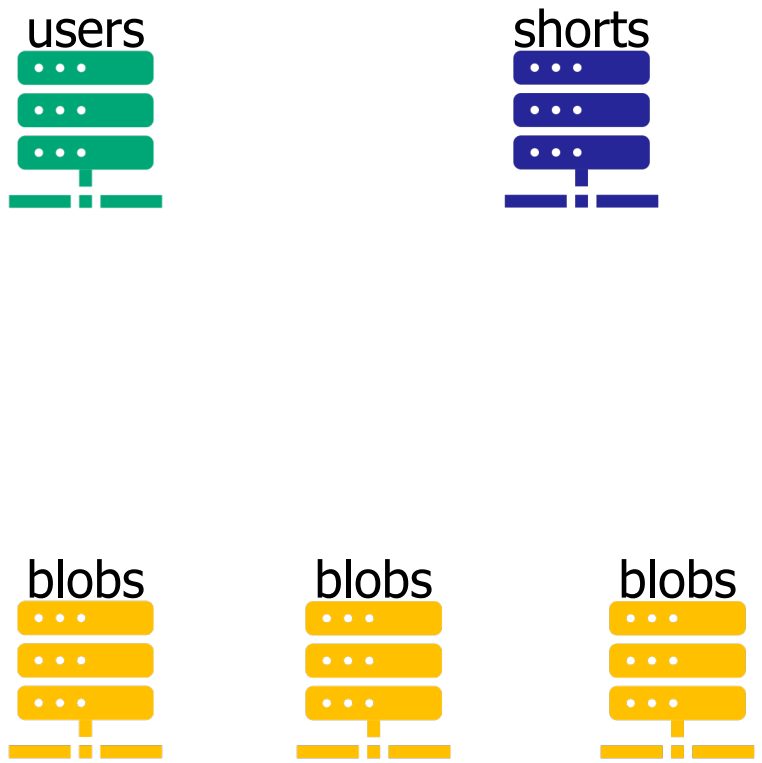
PROJECT - ARCHITECTURE

System includes three services: Users, Blobs, and Shorts.

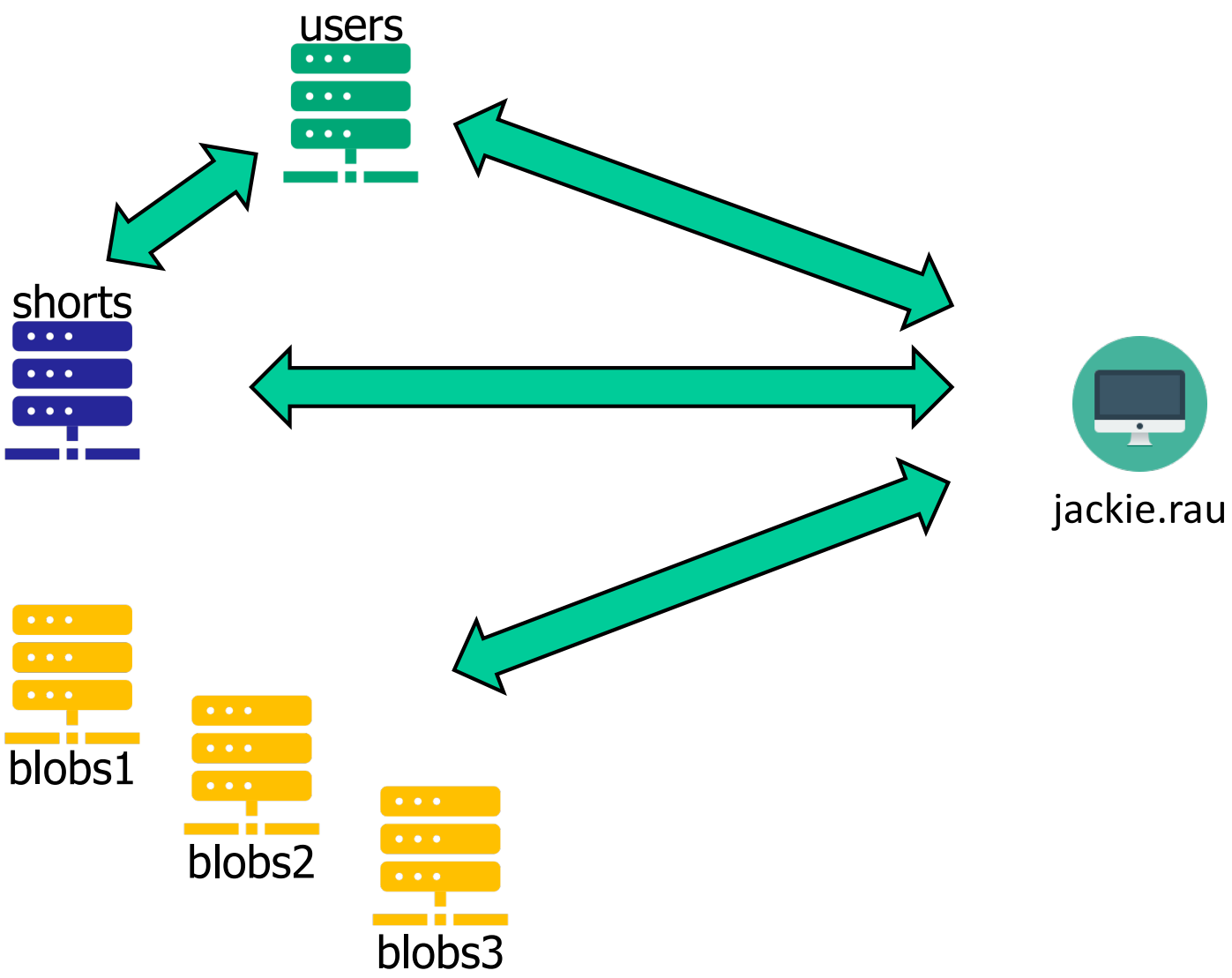
Service **Users** maintains information about the users of the system.

Service **Blobs** maintains the contents of the videos associated with shorts.

Service **Shorts** maintains information about shorts, followers and feeds of each user.

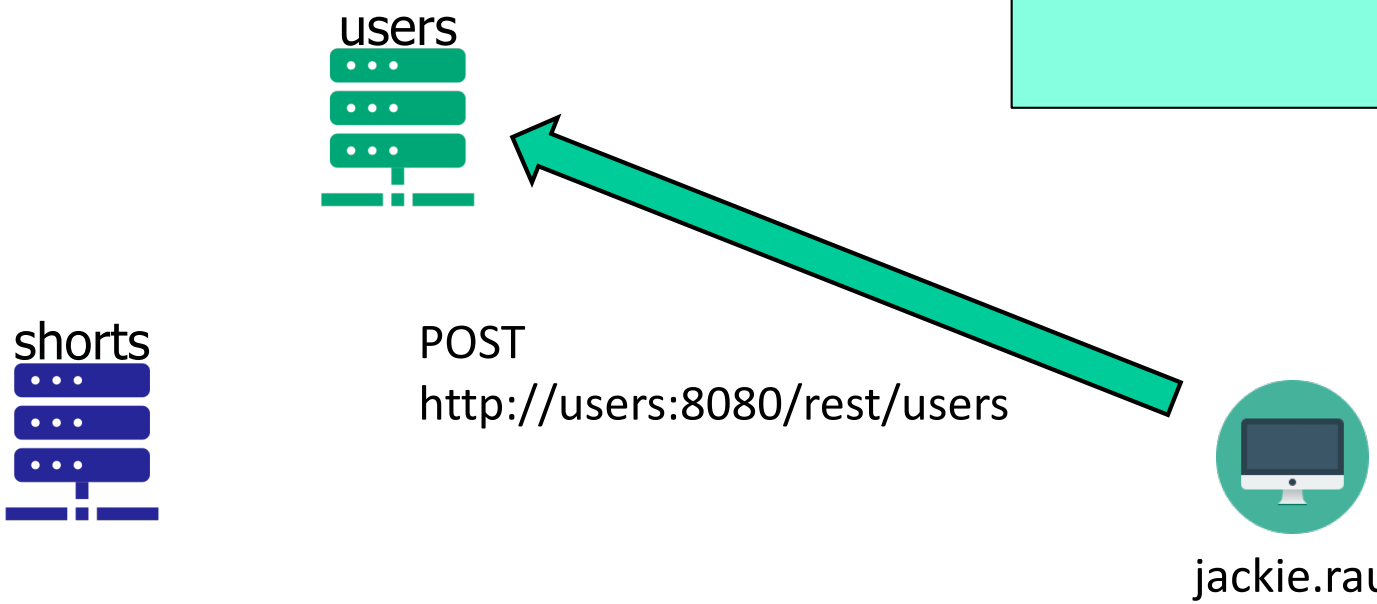


ARCHITECTURE



EXECUTION: CREATE USER

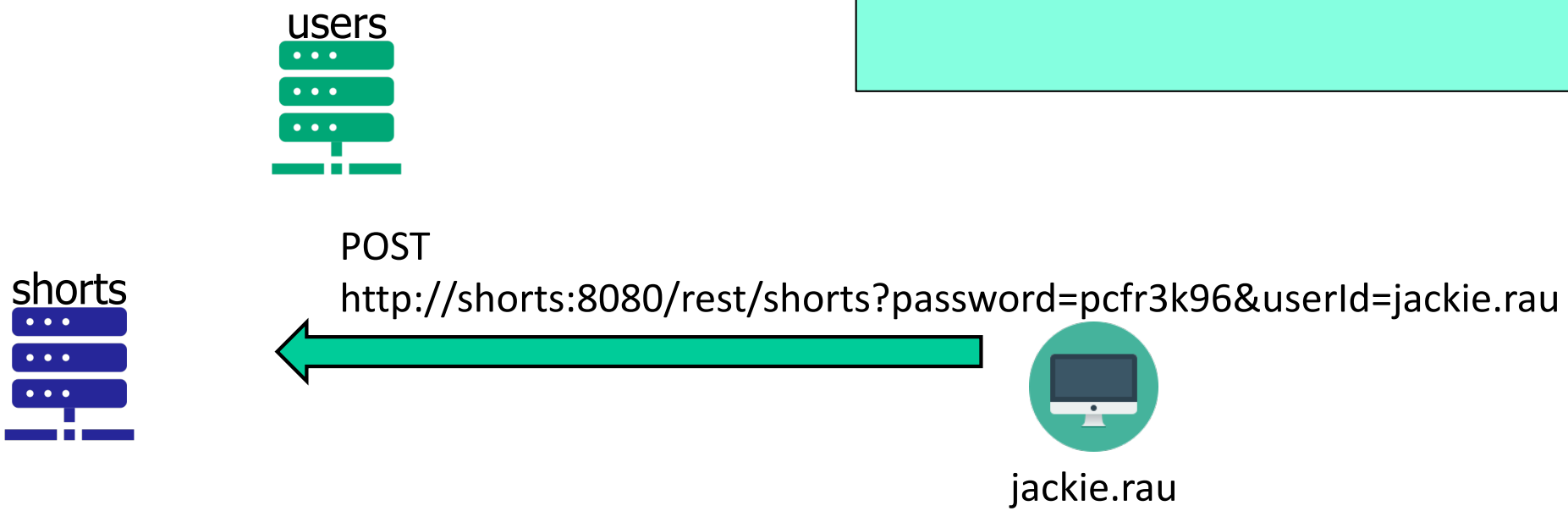
Client calls REST endpoint




```
public class User {
    private String userId;
    private String pwd;
    private String email;
    private String displayName;
...
}
```

EXECUTION: CREATE SHORT

Client calls REST endpoint

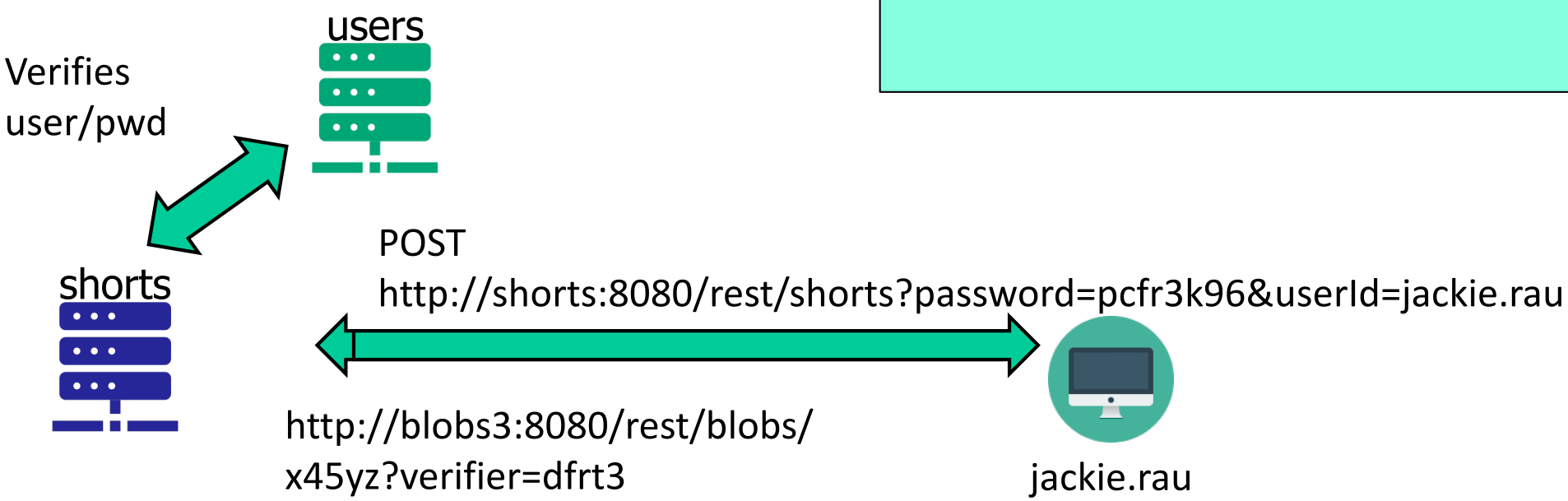



```
public class Short {
        private String shortId;
        private String ownerId;
        private String blobUrl;
        private long timestamp;
        private int totalLikes;
}
```

EXECUTION: CREATE SHORT

Client calls REST endpoint

Shorts server verifies user/pwd and returns location for blob.



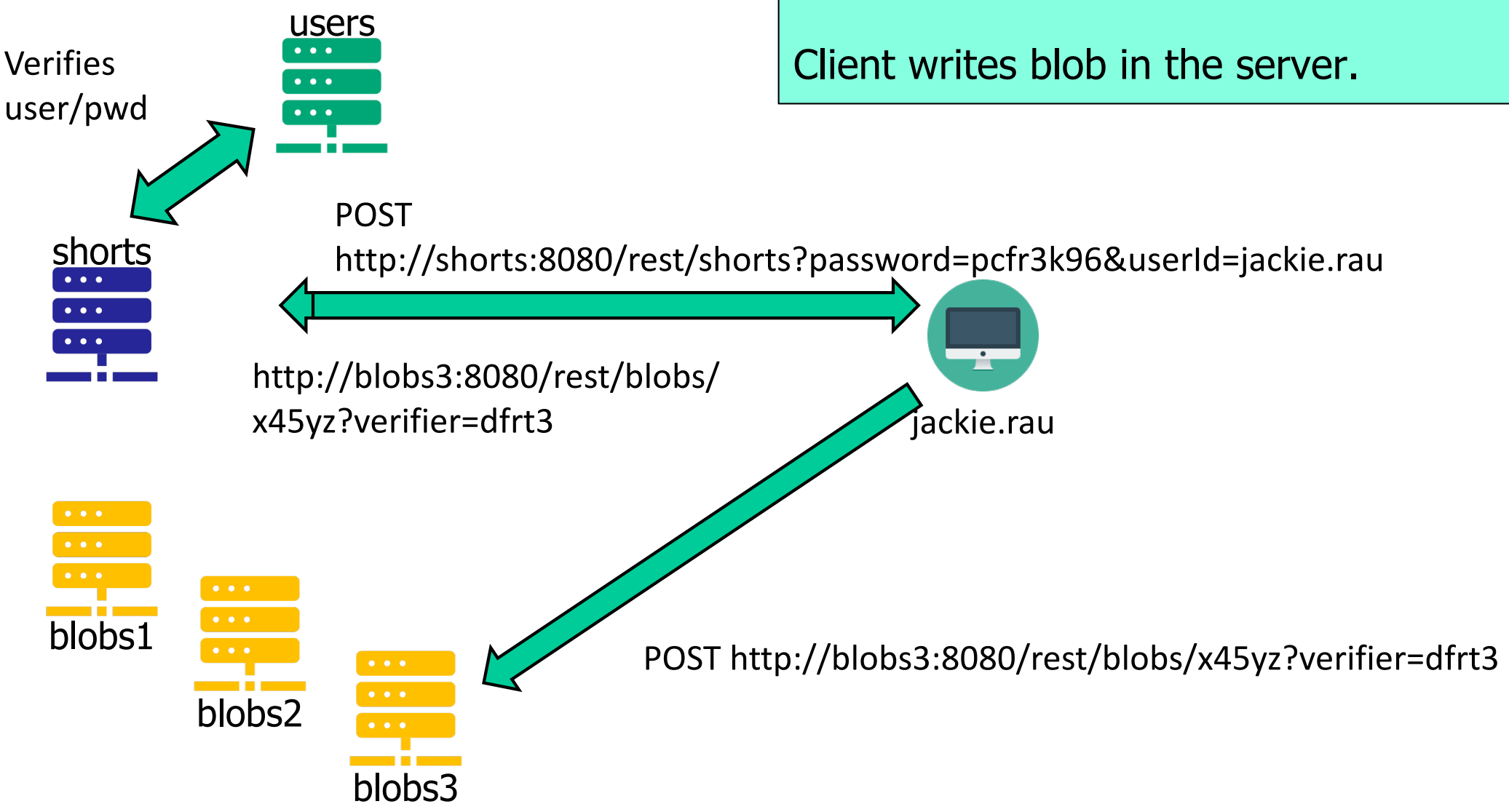

```
public class Short {
        private String shortId;
        private String ownerId;
        private String blobUrl;
        private long timestamp;
        private int totalLikes;
}
```

EXECUTION: CREATE SHORT

Client calls REST endpoint

Shorts server verifies user/pwd and returns location for blob.

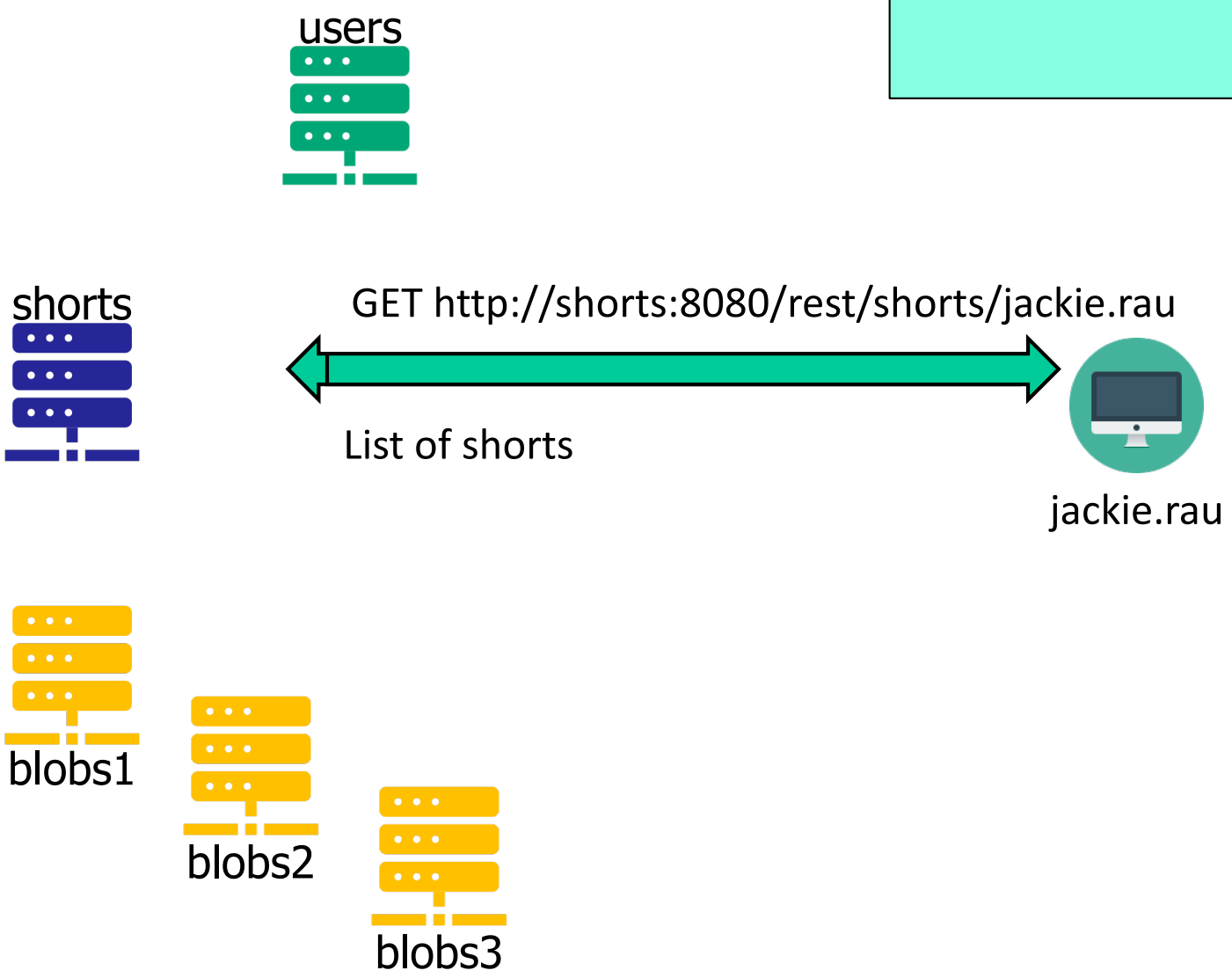
Client writes blob in the server.



EXECUTION: ACCESS FEED

Client calls REST endpoint

Server returns list of shorts.

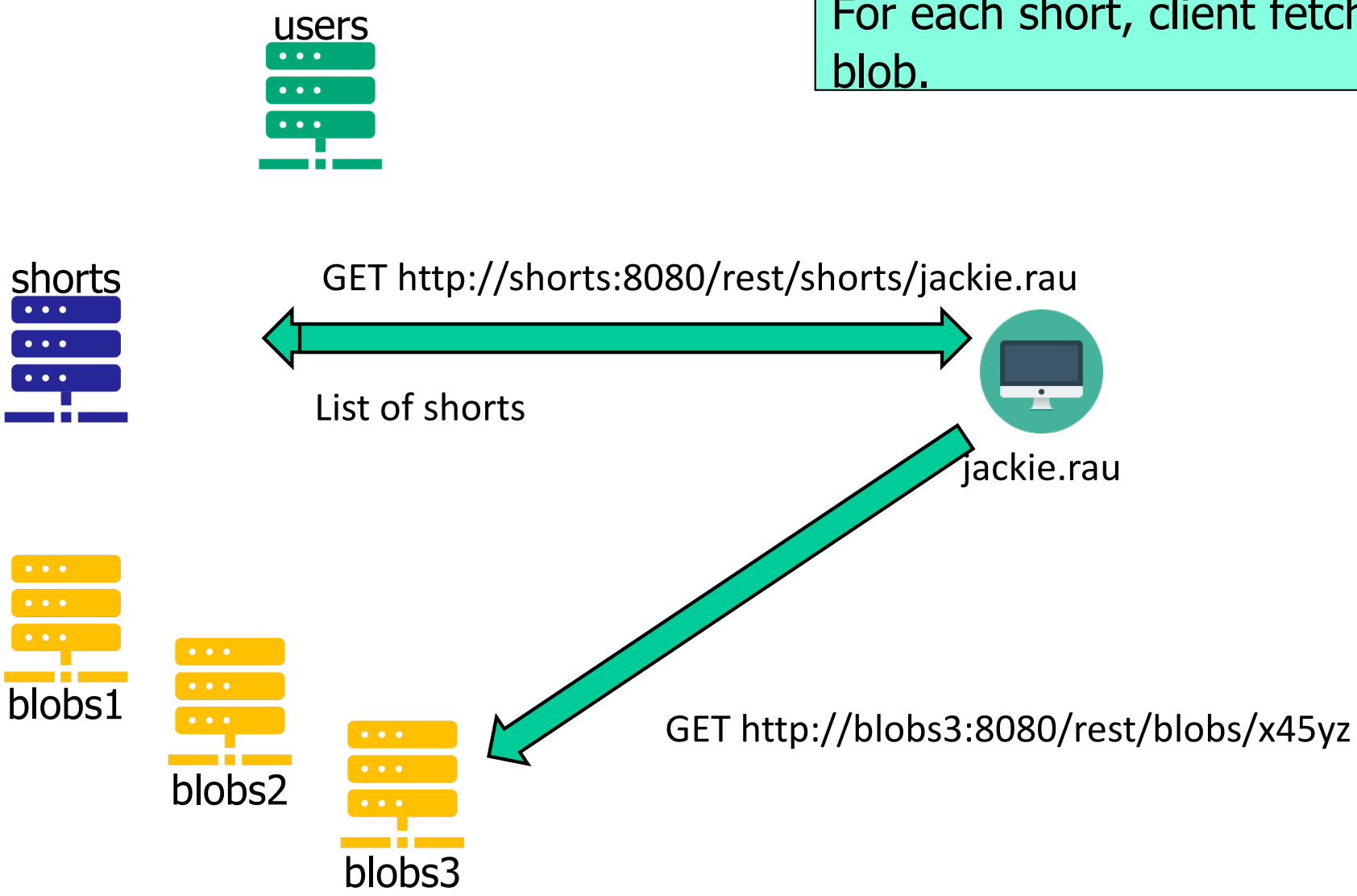


EXECUTION: ACCESS FEED

Client calls REST endpoint

Server returns list of shorts.

For each short, client fetch associated blob.



SOME NOTES

Where is information stored?

- Information about shorts will be stored in a SQL database using Hybernate to simplify storing objects – see lab3.
- Blobs will be stored in the local disk.

In which server are blobs stored?

- Should try to balance the load among the existing blob servers.

INTERFACES AND REMAINING OPERATIONS

Check the course's web page for more information.

Important note: your servers must implement the interfaces, as defined, and return the appropriate error messages – you cannot change the provided methods, but you can add new ones for communication between your servers, if needed.