

Rock — Paper - Scissors

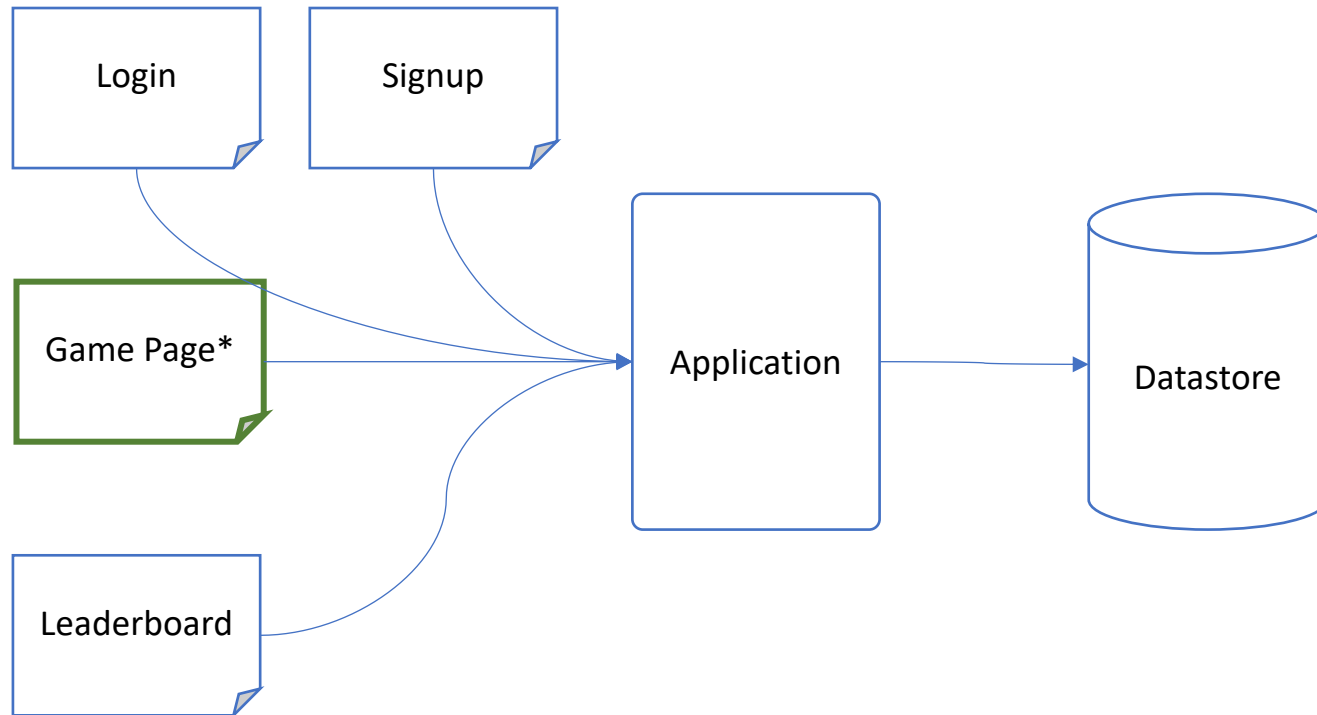
A full stack Python Challenge

Create a Rock-Paper-Scissors Game using Python $\geq 3.9.7$ (with or without a framework like FastAPI/Django/Masonite/Flask) and a persistent back-end data store of choice (can be an RDBMS like PostgreSQL or a NoSQL like Elasticsearch or Cassandra)

Front end can utilize a web framework like Vue, React, Bootstrap, or Flutter. JQuery is not recommended.

Solution should result in a pair of docker containers, one for the app and one for the data store.

Architecture Overview of the Game



*Game page MUST be implemented as an SPA

Log-in

Username

Password

SUBMIT

[Sign-up](#)

Sign up

Username

Password

Confirm Password

SUBMIT

Rock-Paper-Scissors

Rock beats scissors, scissors beat paper, paper beats rock.

Race to 5 wins. Bonus points for fewer matches to reach 5 wins using the formula $10 - \text{\# of matches}$. If computer gets 5 wins first, you get zero points.

Good luck, {username}

Press to Start

Rock-Paper-Scissors

Rock beats scissors, scissors beat paper, paper beats rock.

Round # 1

Computer picks



Game starts
with displaying
match # and
computer
making a
weapons choice
initially hidden

Pick your weapon



Rock-Paper-Scissors

Rock beats scissors, scissors beat paper, paper beats rock.

Round # 1

Computer picks



Player selects a
weapon by
clicking it

Pick your weapon



Rock-Paper-Scissors

Rock beats scissors, scissors beat paper, paper beats rock.

Round # 1

Computer picks



After player makes
weapon selection,
computer reveals
its choice

Pick your weapon



Rock-Paper-Scissors

Rock beats scissors, scissors beat paper, paper beats rock.

Round # 1

Computer Wins!

Ok

Pick your weapon



Computer chose
rock, which
beats player's
scissors

Rock-Paper-Scissors

Rock beats scissors, scissors beat paper, paper beats rock.

Round # 2

Computer

1

{username}

0

Computer picks

?

At the end of each round, a scoreboard is shown with updated score

Pick your weapon



Rock-Paper-Scissors

Rock beats scissors, scissors beat paper, paper beats rock.

Round # 2

Computer

1

{username}

0

Computer picks

?

Game play
continues

Pick your weapon



Rock-Paper-Scissors

Rock beats scissors, scissors beat paper, paper beats rock.

Round # 2

Computer

1

{username}

0

Computer picks



This time,
player's paper
beats
computer's rock

Pick your weapon



Rock-Paper-Scissors

Rock beats scissors, scissors beat paper, paper beats rock.

Round # 2

{username} Wins!

Ok

Player wins this round

Pick your weapon



Rock-Paper-Scissors

Rock beats scissors, scissors beat paper, paper beats rock.

Round # 3

Computer

1

{user name}

1

Computer picks

?

Pick your weapon



On to the
succeeding
rounds

Rock-Paper-Scissors

Rock beats scissors, scissors beat paper, paper beats rock.

Round # 7

{username} Wins!

Ok

Pick your weapon



Rock-Paper-Scissors

Rock beats scissors, scissors beat paper, paper beats rock.

We have a winner...

Computer	{username}
2	5

{username} wins the battle and earns
3 points

{username} now has a total of ***n*** points.

Play again

View
Leaderboard

Logout

Rock-Paper-Scissors

Rock beats scissors, scissors beat paper, p

Player reaches 5 points and wins the game

We have a winner...

Computer

2

{username}

5

{username} wins the battle and earns
3 points

{username} now has a total of ***n*** points.

Play again

View
Leaderboard

Logout

Rock-Paper-Scissors

Rock beats scissors, scissors beat paper, paper beats rock.

We have a winner...

Computer	{username}
2	5

{username} wins the battle and earns
3 points

{username} now has a total of

Since it took 7 rounds
to complete the game,
player earns 10-7
(games) = 3 points

Play again

View
Leaderboard

Logout

Rock-Paper-Scissors

Rock beats scissors, scissors beat paper, paper beats rock.

We have a winner...

Computer

2

{username}

Screen displays all-time points earned by the player including the current one

{username} wins the round with
3 points

{username} now has a total of n points.

Play again

View
Leaderboard

Logout

Leaderboard

Only players with minimum of 10 games played are listed here.

Player	Points	Games Played
David	70	15
Jose	62	17
Pablo	58	14
Juan	57	11
Simon	51	12
Antonio	44	11

Play again

Logout

The final output must be a zipped file which unzips into its own folder.

Going into the root of the folder, the application should be executable in the host by simply executing the command below:

```
user@host:/Users/user/solution_folder$ docker-compose up -d
```

This should launch the application and the data store. There should be no need for the user to pass any parameters, nor manually download/install components/dependencies.

A user should be able to access the application by opening a browser on the host and going to

http://localhost:8000

Solution will be judged on correctness of solution, design decision, and use of best practices. All services should be launched with initial settings included in the docker-compose/Dockerfile environment settings.