

# Harry-Kart

## Description

Harry-Kart is a special kind of horse racing.

The horses participating have a base speed, they can run with that speed indefinitely. The track is a 1000 meters loop and is divided in lanes, each horse runs on a lane and every lane has the same length.

The horses run the first loop at their base speed but at the end of each loop they find a power-up or power-down.

The power-ups/downs are numbers, negative or positive, representing how much the horse speeds up or slows down.

Your task is to compute the top 3 ranking.

## Example

### Input

**Number of loops: 3**

**Start List:**

| Lane | Horse name     | Base speed |
|------|----------------|------------|
| 1    | TIMETOBE LUCKY | 10         |
| 2    | CARGO DOOR     | 10         |
| 3    | HERCULES BOKO  | 10         |
| 4    | WAIKIKI SILVIO | 10         |

**Power-Ups/Downs:**

| Loop | Lane 1 | Lane 2 | Lane 3 | Lane 4 |
|------|--------|--------|--------|--------|
| 1    | +1     | +1     | 0      | -2     |
| 2    | +1     | -1     | +2     | -2     |

## Result

| Position | Horse Name     |
|----------|----------------|
| 1st      | TIMETOBE LUCKY |
| 2nd      | HERCULES BOKO  |
| 3rd      | CARGO DOOR     |

## Implementation

The assignment has to be implemented as a spring boot application, the boilerplate application is provided (see attachment).

The input is provided as an XML document (see example `/src/main/resources/input.xml`), in case you need it we provide the XML schema for it (`/src/main/resources/input.xsd`).

The output must be a json document of this form:

```
{
  "ranking": [
    {"position": 1, "horse": "TIMETOBELUCKY"},
    {"position": 2, "horse": "HERCULES BOKO"},
    {"position": 3, "horse": "CARGO DOOR"}
  ]
}
```

The application we provide has a rest endpoint accepting XML and returning JSON (`http://localhost:8080/api/play`), you can use it as entry point.

When you are done zip the project (without the target folder) and send it back to us. You can leave the `.git` folder if you want.

## Expectation

This assignment is a way for us to see how you code, we expect the code to be in object oriented fashion and tested.

We also hope you'll enjoy implementing this little game.