# BETSSON HACKATHON

General Information:

- Slack will be our official communication channel
  - Make sure all your team member has access to it (we need all e-mail addresses)
  - Each team will have an private channel
  - General announcements will be placed into the ''General'' channel
  - Questions can be sent into the ''Questions'' channel

- Basic starter repository will be provided on Github to be forked (node.js or .net)
  - Github secret will be provided for cloud deployment

There is no such thing as stupid questions, just reach out to us!
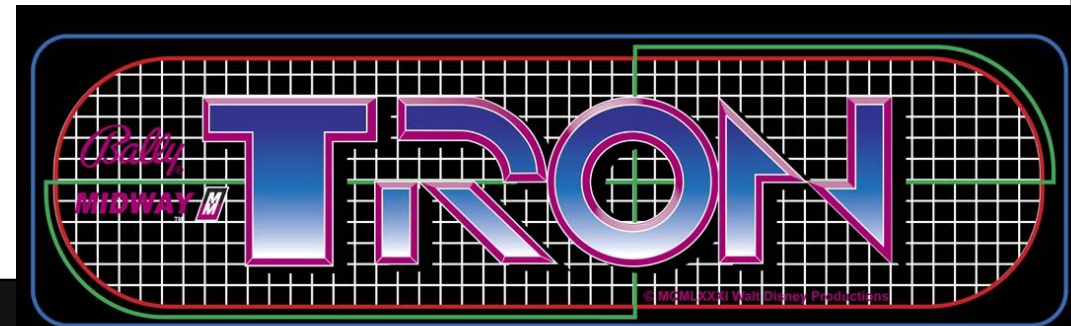
The Game:

Our game is inspired on the arcade game TRON!

The teams will compete against each other in our playground to see who will collect more points and survive until the end!!!

Your challenge will be to build a solution that will be able to calculate the best route in the map and send the actions(direction) your player wants to move in each iteration.

How to communicate with your server to receive/send information:
- The communication is implemented through web sockets (socket.io)

What our server expect to receive from your solution:
- The iteration number and the next action (direction)

How can you test/debug your solution:
- We will provide a testing environment where you can connect your solution and play against a "Test Client" which can be controlled manually

Rules:

When the **game starts** the server will send the initial **game state** to all players. Then, it is expected that the players **send back their action** for the first iteration. During the iteration the game will play the current action and will receive the next action for the next round, and so on.

- It is expected to receive one action per iteration, in case of multiple actions sent by the player a ''MultipleAction'' error will be triggered. None of the actions sent for that iteration will be considered.

- In each iteration it will be validated if the actions are being sent in the correct Direction Contract Model. In case of a non match a ''ParseError'' error will be triggered.

- It is only possible to move 90 degrees per iteration/action. In each iteration it will be validated if the player is trying to perform a 180 degree movement. If is the case a ''InvalidDirection'' error will be triggered.

- In each iteration, before placing the actions, the game checks if the player is still alive. In case the Player is not alive a ''DeadPlayer'' error will be triggered.

- In each iteration, before placing the actions, the game will check if the iteration number sent by the player match with the current iteration in the game. In a non-match case a ''InvalidIteration'' error will be triggered.
(an example would be if the players send their actions outside of the timeframe between the game iterations, which means that they will be one or more steps before/ahead)

- If none action will be received for that iteration a ''NoAction'' error will be triggered.
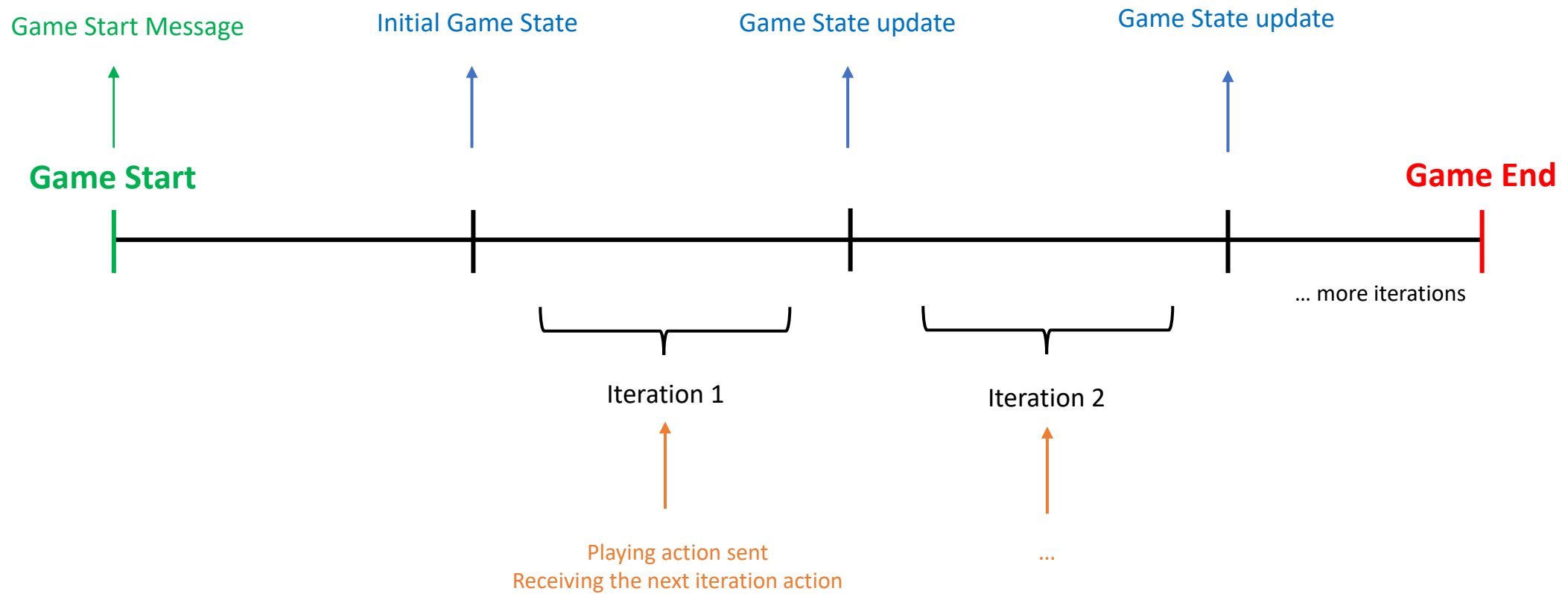
Client Game State

```
{
    width: number;
    height: number;
    iteration: number;
    tickTimeInMs: number;
    players: PlayerCoordinates[];
}
```

PlayerCoordinates

```
{
    playerId: string;
    coordinates: Coordinate[];
}
```

Coordinate

```
{
    x: number;
    y: number;
}
```

Action

```
{
    direction: Direction,
    iteration: number
}
```

Direction

```
{
    Up = "Up",
    Down = "Down",
    Left = "Left",
    Right = "Right"
}
```

Playground Tools:

Leaderboard: IN PLAY/DEAD players + collected points 🕹️

Central Board: playground canvas ➝ where the game will happen! 🕹️

Game control buttons: Play/Pause/Step One/Continue/Reset 🕹️

Lobby: Team status (Activated/Deactivate/Online/Offline) 🕹️

Action Log: Console with the last action received by the server 🔍

History: When the game is paused can be used to check the last 10 iterations 🔍

Settings: Increase and Decrease Iteration time and map size 🔍

Test Client: Simulates a player and can be controlled with the keyboard 📋

❤ 🕹 HUBSSON HACKATHON ARCADE 🕹 ❤

Leaderboard

IN PLAY :

▪	[M] Tan Iguana	35 🪙
▪	[M] Sapphire Tiger	35 🪙
▪	[M] Ivory Hedgehog	35 🪙

Lobby

🪙 [M] Tan Iguana	▮
🪙 [M] Sapphire Tiger	▮
🪙 [M] Ivory Hedgehog	▮

🔁 35

▶ ⏸ ⏭ ↺

Action Log

[M] Tan Iguana	NoAction	No action received
[M] Sapphire Tiger	NoAction	No action received
[M] Ivory Hedgehog	Ok	Up

History

🔴 LIVE

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Settings

Tick Time (ms)	20
Map Size	150 x 75

Test Client

[M] Ivory Hedgehog

Direction: ⬆

Control actions using the keyboard (W/A/S/D)

Disconnect

LET'S START THE GAME!