

This is a league based challenge.

For this challenge, multiple leagues for the same game are available. Once you have proven yourself against the first Boss, you will access a higher league and extra rules will be available.

Starter AIs are available in the [Starter Kit](#). They can help you get started with your own bot.

Introductory video by Mathis Hammel: <https://youtu.be/MyHjWftmMfQ>

The Goal

Protect your base from monster attacks and outlive your opponent.

Rules

Both players controls a team of **3 heroes**. The teams start out at opposite corners of the map, near their **base**. Throughout the game **monsters** will appear regularly on the edges of the map. If a **monster** reaches your base, it will deal **damage**. If your base takes too much damage, you lose.

Thankfully, your **heroes** can kill **monsters**.

The map

The game is played on a rectangular map where the coordinate **X=0, Y=0** is the top-left pixel and **X=17630, Y=9000** is the bottom-right pixel.

Each **base** can take a maximum of **3** points of damage before being destroyed.

Heroes

Every turn, you must provide a command for each **hero**. They may perform any of the following commands:

- **WAIT**, the hero remains where they are.
- **MOVE**, followed by map coordinates will make the hero advance towards that point by a maximum of **800** units.

After a **hero's** move phase, any **monsters** within **800** units will suffer **2** points of damage.

Monsters

Every **monster** appears with a given amount of **health**. If at the end of a turn, a monster's **health** has dropped to zero or below, the **monster** is removed from the game.

Monsters will appear randomly, with a random moving direction.

Monsters will always advance in a straight line at a speed of **400** units per turn.

If a **monster** comes within **5000** units of a **base** at the end of a turn, it will **target** that base.

When **targeting** a base, a monster will move **directly towards** that **base** and can no longer leave the map.

If a **monster** comes within **300** units of a **base** at the end of a turn, as long as it has not been killed on this turn, it will disappear and deal the **base 1** point of damage.

Victory Conditions

- Your opponent's base health has dropped to zero.
- You have more base health points than your opponent after **220 turns**.

Defeat Conditions

- Your base's health reaches zero.
- Your program does not provide a valid command in time.

Debugging tips

- Hover over an entity to see extra information about it
- Append text after any command and that text will appear above your hero
- Press the gear icon on the viewer to access extra display options
- Use the keyboard to control the action: space to play/pause, arrows to step 1 frame at a time

Game Input/Output

Initialization Input

Line 1: two integers `baseX` and `baseY` for the coordinates of your base. The enemy base will be at the opposite side of the map.

Line 2: the integer `heroesPerPlayer` which is always **3**.

Input for One Game Turn

First 2 lines: two integers `baseHealth` and `mana` for the remaining health and mana for both players. Your data is always given first. *You may ignore the mana for this league.*

Next line: `entityCount` for the amount of game entities currently in play.

Next `entityCount` lines: 11 integers to describe each entity:

- `id`: entity's unique id.
- `type`:
 - **0**: a monster
 - **1**: one of your heroes
 - **2**: one of your opponent's heroes
- `x` & `y`: the entity's position.
- `shieldLife`: *ignore for this league.*
- `isControlled`: *ignore for this league.*

The next 5 integers only apply to monsters (will be **-1** for heroes).

- **health**: monster's remaining health points.
- **vx** & **vy**: monster's current speed vector, they will add this to their position for their next movement.
- **nearBase**: **1**: if monster is **targeting** a base, **0** otherwise.
- **threatFor**:
 - With the monster's current trajectory — if **nearBase** is **0**:
 - **0**: it will never reach a base.
 - **1**: it will eventually reach your base.
 - **2**: it will eventually reach your opponent's base.
 - If **nearBase** is **1**: **1** if this monster is **targeting** your base, **2** otherwise.

Output for One Game Turn

3 lines, one for each hero, containing one of the following actions:

- **WAIT**: the hero does nothing.
- **MOVE** followed by two integers (x,y): the hero moves **800** towards the given point.

You may append text to a command to have it displayed in the viewer above your hero.

Examples:

- **MOVE 8000 4500**
- **WAIT nothing to do...**

Constraints

Response time per turn \leq **50** ms

Response time for the first turn \leq **1000** ms

What is in store for me in the higher leagues?

Extra rules available in higher leagues are:

- Heroes can cast spells
- Fog of war