

Heroes in Training

Let's build the beginning of a small RPG character system.

We're going to model heroes that can train and grow stronger.

Your Task

1. Create an abstract class called **Hero**

Add two properties:

- **Name** (string)
- **Level** (int)

Add:

- A constructor that sets **Name**
- **Level** should default to **1**

Add an abstract method:

```
public abstract string Describe();
```

This forces all hero types to describe themselves differently.

2. Create an interface called **ITrainable**

It should contain one method:

```
void Train();
```

Anything that is *trainable* can increase in level.

3. Create a class called **Mage**

- Inherit from **Hero**
- Implement **ITrainable**
- Add a property: **Mana** (int)

Requirements:

- Default **Mana** to 30
- Override **Describe()**
- Implement **Train()** so that:

- `Level++`
- `Mana += 5`

4. Create a class called `Warrior`

- Inherit from `Hero`
- Implement `ITrainable`
- Add a property: `Stamina` (int)

Requirements:

- Default `Stamina` to 80
- Override `Describe()`
- Implement `Train()` so that:

- `Level++`
- `Stamina += 10`

Expected Output (Example)

When running the application, the console should resemble the following outputs:

```
Before training:

Mage: Nia (Level 1) - Mana: 30
Warrior: Koba (Level 1) - Stamina: 80

Training...

After training:

Mage: Nia (Level 2) - Mana: 35
Warrior: Koba (Level 2) - Stamina: 90
```

Hint: Store a List of Heroes to call `Describe()`. Then when you want to look to `Train()`, you can use a new keyword:

```
foreach(var hero in heroes)
{
    if(hero is ITrainable) // Checks if the Hero also is a ITrainable. Meaning, it
    can be trained.
    {
        hero.Train();
    }
}
```

Reminders

- `Hero` must be `abstract`
- `Describe()` must be overridden in both child classes
- Use `: Hero, ITrainable` when inheriting and implementing
- `Level++` happens inside `Train()`

Bonus (Optional)

1. Add validation so:

- `Name` cannot be empty
- `Level` cannot be less than 1

2. Create a new hero type:

- `Archer`
- Give it its own stat (e.g. `Accuracy`)
- Make it trainable