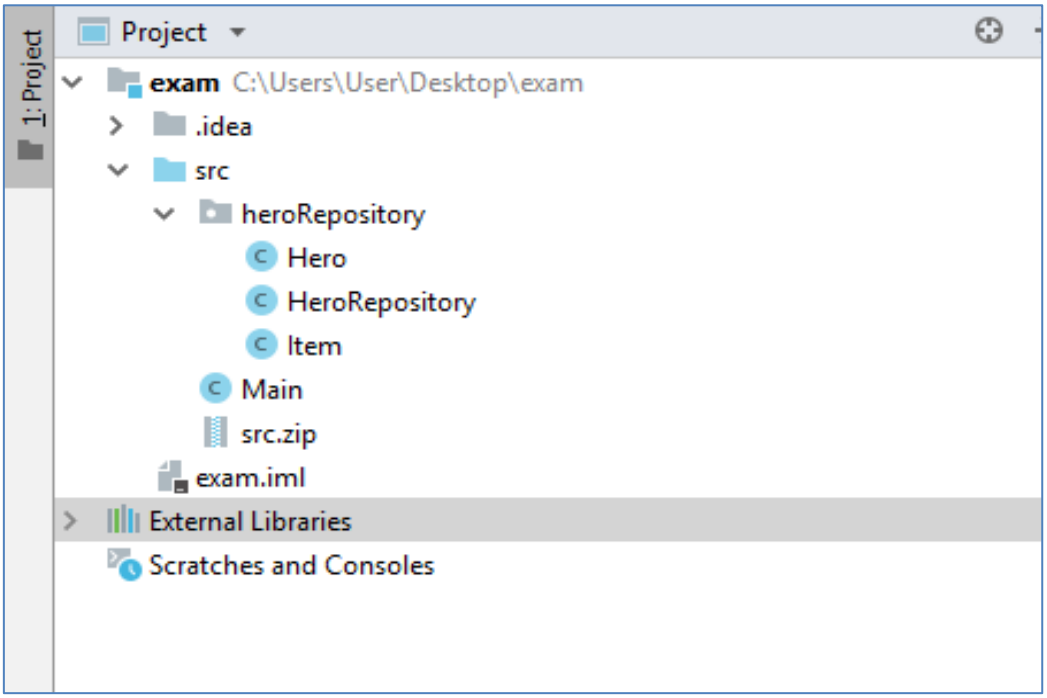
Problem 3. HeroRepository

I. Project Structure

For this problem you should create a new package named **"heroRepository",** which should hold inside the classes **Item , Hero and HeroRepository.** The Main class can also be inside this package however it is not a must it may also be outside the package. Your project structure should look like that:



Pay attention to name the package, all the classes, their fields and methods exactly the same way they are presented in the following document. It is also important to keep the project structure as described above.

II. Item

Create Java class **`Item that has the following structure:`**

```
public class Item {
    // TODO: implement this class
}
```

1. Fields

- **strength: int**

agility: int

- **intelligence: int**

The class **constructor** should receive all the fields parameters (**strength, agility, intelligence**).

2. Methods:

- Getter **getStrength()**
- Getter **getAgility()**
- Getter **getIntelligence()**
- Method **toString()** which returns the information about a single Item object in the following format:

```
"Item:"
"  *  Strength: {Strength Value}"
"  *  Agility: {Agility Value}"
"  *  Intelligence: {Intelligence Value}"
```

III. Hero

Create Java class **Hero that has the following structure:**

```
public class Hero {
    // TODO: implement this class
}
```

1. Fields

- **name: Strinig**
- **level: int**
- **item: Item**

The class **constructor** should receive all the fields parameters (**name, level, item**).

2. Methods:

- Getter **getName()**
- Getter **getLevel()**
- Getter **getItem()**
- Method **toString()** which returns the information about a single Hero object in the following format:

```
"Hero: {Name} – {Level}"

"  *  Strength: {Strength Value}"

"  *  Agility: {Agility Value}"
"  *  Intelligence: {Intelligence Value}"
```

IV. HeroRepository

Write a Java class **HeroRepository** that has **data** (a collection which stores the entity **Hero**). All entities inside the repository have the **same properties**.

```
class HeroRepository {
    // TODO: implement this class
}
```

1. Fields

- Field **data** – **collection** that holds added entities

The class **constructor** should initialize the **data** with a new instance of the collection**.**

2. Methods:

- Method **`add(entity)`** – adds an entity to the Data
- Method **`remove(name)`** – removes an entity by given hero name.
- Method **`getHeroWithHighestStrength()`** – returns the Hero witch poses the item with the highest strength
- Method **`getHeroWithHighestAgility()`** – returns the Hero witch poses the item with the highest agility
- Method **`getHeroWithHighestIntelligence()`** – returns the Hero witch poses the item with the highest intelligence
- Getter **`getCount`** – returns the number of stored entities
- Override **`toString()`** – Print all the heroes.

Examples

This is an example how the **HeroRepository** class is **intended to be used**.

Sample code usage

```
//Initialize the repository
HeroRepository repository = new HeroRepository();
//Initialize entity
Item item = new Item(23, 35, 48);
//Print Item
System.out.println(item);

//Item:
//  * Strength: 23
//  * Agility: 35
//  * Intelligence: 48

//Initialize entity
Hero hero = new Hero("Hero Name", 24, item);
//Print Hero
System.out.println(hero);
```

```
//Hero: Hero Name – 24
//  * Strength: 23
//  * Agility: 35
//  * Intelligence: 48

//Add Hero
repository.add(hero);
//Remove Hero
repository.remove("Hero Name");

Item secondItem = new Item(100, 20, 13);
Hero secondHero = new Hero("Second Hero Name", 125, secondItem);

//Add Heroes
repository.add(hero);
repository.add(secondHero);

Hero heroStrength = repository.getHeroWithHighestStrength(); //returns secondHero
Hero heroAbility = repository.getHeroWithHighestAgility(); //returns hero
Hero heroIntelligence = repository.getHeroWithHighestIntelligence(); //returns hero

System.out.println(repository);
//Hero: Hero Name – 24
//  * Strength: 23
//  * Agility: 35
//  * Intelligence: 48
//Hero: Second Hero Name – 125
//  * Strength: 100
//  * Agility: 20
//  * Intelligence: 13
```

Constraints

- The names of the heroes will be always unique.
- The items of the heroes will always be with positive values.
- The items of the heroes will always be different.
- You will always have an item with the highest strength, agility and intelligence.

Submission

Submit **single .zip file**, containing **heroRepository package, with the three classes inside (Item, Hero and HeroRepository) and the Main class**, there is no specific content required inside the Main class e. g. you can do any kind of local testing of you program there. However there should be **main(String[] args)** method inside: