

Zombie Apocalypse Survival

The world, as we know it, has fallen into an apocalyptic scenario. A disease is transforming human beings into violent creatures (a.k.a. Zombies)

You, the last survivor who knows how to code, will help the resistance by deploying a system to connect the remaining humans. This system will be essential to detect new infections and share resources between the members.

Requirements

You will develop a complete system (yes, we care about architecture design even amid a zombie apocalypse!), which will store information about the survivors, as well as the resources they own.

To accomplish this, you must fulfill the following use cases:

- **Add survivors to the database**

A survivor must have a *name*, *age*, *gender* and *last location (latitude, longitude)*. We want this database to be accurate, so add basic validation for each field.

Each survivor has their inventory of resources/items. The survivor must declare all of their resources in the sign-up process. We will believe they have what they say they have.

- **Update survivor location**

A survivor must have the ability to update their last location, storing the new latitude/longitude pair in the base, having track of the location is a plus.

- **Profile Picture**

A survivor also has the option to add their profile picture on signup. The survivor must have the ability to later add/update their profile picture later on.

- **Flag survivor as infected**

In a chaotic situation like that, a survivor may inevitably get contaminated by the disease. When this happens, we need to flag the survivor as infected.

A survivor is marked as infected when at least five other survivors report their contamination.

When a survivor is infected, they cannot:

1. Trade with other survivors

2. Access/manipulate their inventory
3. Flag someone as infected
4. Update their last location + profile picture (profile page)
5. Be listed in the reports (zombies are kinda dead anyway, see the item on reports below).

These rules HAVE to be enforced on all levels.

- **Survivors cannot Add/Remove items from inventory**

A new user must register their belongings alongside the sign-up process. After that, they can only change their catalog through trading with other survivors. Make sure that an error in the system doesn't end up with corrupted data!

The items allowed in the inventory are described below in the Trade feature.

- **Search Survivors**

A survivor must have the ability to search other survivors not only based on their names but also based on the quantity of items they have.

PS: You may implement "thinking sphinx" for searching. Or you can use any other full text search technique (if you use ILIKE/LIKE you must implement proper TRGM GIN index for full text search).

- **Trade items:**

Survivors can trade items among themselves.

To do that, they must respect the price table below, where the value of an item is described in terms of points.

Both sides of the trade should offer the same amount of points. For example, 5 Fiji water and 5 first aid pouch ($5 \times 14 + 5 \times 10$) are worth 6 AK47 (6×8) plus 6 Campbell Soups (6×12) - and yes, you will die without water. You'll also die if you have a severe untreated wound. That's why those items are more expensive than weapons and food!

Item	Points
1 Fiji Water	14 points
1 Campbell Soup	12 points
1 First Aid Pouch	10 points
1 AK47	8 points

As a tip, it's probably good to start the application with a reasonable amount of goods in stock, so it's easier to match prices and quantities for trading.

- **Trade**

A survivor can select another survivor to trade with and the trade page should show the selected survivors' inventory. He should select the items he wants to receive as well as exchange and make the trade request.

Once a trade request has been made, it can either be cancelled by the survivor who made the request or the receiver can either reject or accept the trade.

- **Trade History**

You must store trades to show the user a history of all their previous trades(sent or received) with filters like cancelled trades, rejected trades etc.

- **Reports**

The report page must offer the following information:

1. Percentage of infected survivors.
2. Percentage of non-infected survivors.
3. The average amount of each kind of resource by the survivor (e.g. 10 Fiji Waters per survivor)
4. Points lost because of an infected survivor.

- **Roles**

- **Admin:** should not be able to access any of the functionalities provided to the survivor.
- 5. **Survivor:** should not be able to access the reports page.