INGI1131 - Zombieland

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Architecture and design of our project

First of all, our project is only one file who is a functor. In this functor, we use one port for each zombie and one port for the brave. In this way, we can easily send a message to an actor. There'are a lot of other possibility. For example, we can use one port by CASEEEEEEEEE. Here's the description of the utility of our functions :

`ZombiesNumber` : creates a list of `NZombies` [1] values. Each values is a number between 1 and `NbZeros` [2]

– DELZOMBIE

`CheckCase` : is a function which return a boolean. This function is usefull to see if a CASEEEEE contains a food or another thing.

`UpdateList` : is a very important function because without it, we can't remove an object of the map or move the brave.

`MaxWidth` : with this function, we can create the Canvas.

`ListZombie` : this function return a list with the position of eah Zombie.

`RemplirListe` : we have now the initial list who REPRESENT the map.

`DrawBox` : with this function, we can draw the images on the map (with the help of the `MapList` created by `RemplirListe`.

`InitLayout` : this function create the initial map. We put `MapList` as argument. We only use this function at the creation of the map.

`BuildZombiePort` : with this function, we can create ports.

`ChooseDirection` : send a random direction at the stream placed at the position N of the tuple.

`updatelistzombie` : A FAIRE

`NiceZombie` et `NiceBrave` : draw an image in function of the direction (to have a nice orientation of the zombies and of the brave).

`ZombiesMove` : It's the second most important function of our implementation. It creates the IA of the zombiesn and zombies can interact with the lements of the map.

`Game` : It's the most important function because it controls the brave. Without this function, the brave can't interact with the elements of the map.

To solve the problem of concurrency, we use ports and, each time, we send the update list as return value of the `Game` and the `ZombiesMove` functions. Without this, we can't know how Zombies and Brave progress on the map so it's really an important return value to SYNCHRONIZE the Zombies and the Brave.

Our project has a lot of advantages :

1. The number of Zombie can be as big as we want.
2. The map can have another form than a square.
3. When a Zombie try 10 times to move but he can't because of something near him, he becomes angry and explode.

1. `NZombies` is the number of zombies we want on the map
2. `NbZeros` is the number of free CASEEEE on the map ; the number of CASEEEE where we can put a zombie