DIFFICULTIES OF THE PROJECT AND HOW WE SOLVED THEM

- **Checking the arguments and initializing the number of events.** The problem was that, at the very beginning, we did not understand what exactly "argc" and "argv" represented. After knowing that "argc" is the number of arguments passed to the program by the command line (including the program's name), and "argv" is an array of strings containing the command-line arguments, we could proceed with checking the arguments themselves. Since there are two arguments (in argc) we needed to check that if argc is different to 2, the arguments passed by the command-line are in a wrong format. Otherwise, it is correct. Also, to initialize the Eventnumbers, an error popped up. Because we knew that the argument we needed is in position 1 of argv; but we ignored the fact that they are strings. Thus, we solved that problem with atoi, that converts strings to integers.

- **The UpdateShopping function.** We didn't know how to manage to keep updating the number of items the robot had to buy even outside of the function. At first, we tried to do a local variable, because we wanted to keep it inside the function, but since it had to go out of the function to do the other tasks, we could not use a local variable. Instead we finally solved it using a global variable called Market, so that it can be updated in the different functions when a task is completed and therefore an "item has been bought".

- **Plates and max capacity.** We understood that when arriving to max capacity, we had to remove the three plates from the stack and then do nothing, so we were not adding the plate. Since that was a wrong conception, we just modified it so that the plate was added to the recently emptied stack.

- **Sorting books.** We did not see that we could use the strcmp(), so we had problems when it came to comparing the authors of the book. After checking the provided pdf, we realized we actually could use the function so the problem was solved.

TESTING

To test that the code works, we've tried with different arguments and a lot of prints to check if the code was going through the desired functions, if the object sorted had the correct format… The prints are no longer executed but you might find them as comments.

We will show you what the final output is with the three different proposed arguments: 10, 100 and 1000.

To test it, we write, as the command-line in the terminal, this:

gcc Filename.c -o executablename

./ executablename arguament

Where, in our case, they are:

- Filename: **project.c**
- Executablename: **p**
- Arguments: **10, 100 and 1000**

FIRST TRIAL: Argument = 10

```
Starting...

List:   Charlotte Bronte 'Jane Eyre' 1992, J.K. Rowling 'Harry Potter' 2002,

In the stack of dinner plates there are 1 plates
In the stack of soup plates there are 1 plates
In the stack of dessert plates there are 3 plates
The total number of plates that are in stacks and not in the wardrobe is 5

List of robots in queue:
        things to buy: 3 id: 2

STATISTICS WHEN CLEANING THE SIMULATION:

Removing books...
2 books have been removed

Cleaning all stacks of plates...
5 plates have been removed

Cleaning shopping queue...
1 robots have been removed
```

SECOND TRIAL: Argument = 100

```
Starting...

List:
        Charlotte Bronte 'Jane Eyre' 1992,
        Dan Brown 'Origin' 1996,
        J.K. Rowling 'Harry Potter' 2002,
        Katarzyna Grochola 'Zielone drzwi' 1987,
        Philip Roth 'Nemesis' 2012,
        Stephenie Meyer 'The host' 2014,
        Veronica Roth 'Divergente' 1990,
        Yann Martel 'Life of Pi' 2017,

In the stack of dinner plates there are 3 plates
In the stack of soup plates there are 1 plates
In the stack of dessert plates there are 3 plates
The total number of plates that are in stacks and not in the wardrobe is 7

List of robots in queue:
        things to buy: 4 id: 24
        things to buy: 5 id: 25
        things to buy: 2 id: 26
        things to buy: 4 id: 27
        things to buy: 3 id: 28
        things to buy: 5 id: 29
        things to buy: 2 id: 30
        things to buy: 3 id: 31
        things to buy: 2 id: 32
        things to buy: 4 id: 33
        things to buy: 4 id: 34
        things to buy: 2 id: 35

STATISTICS WHEN CLEANING THE SIMULATION:

Removing books...
8 books have been removed

Cleaning all stacks of plates...
7 plates have been removed

Cleaning shopping queue...
12 robots have been removed
```

THIRD TRIAL: Argument = 1000

```
Starting...

List:
        Charlotte Bronte 'Jane Eyre' 1992,
        Dan Brown 'Origin' 1996,
        J.K. Rowling 'Harry Potter' 2002,
        Katarzyna Grochola 'Zielone drzwi' 1987,
        Philip Roth 'Nemesis' 2012,
        Stephenie Meyer 'The host' 2014,
        Veronica Roth 'Divergente' 1990,
        Yann Martel 'Life of Pi' 2017,

In the stack of dinner plates there are 1 plates
In the stack of soup plates there are 2 plates
In the stack of dessert plates there are 2 plates
The total number of plates that are in stacks and not in the wardrobe is 5

List of robots in queue:
        things to buy: 5 id: 268
        things to buy: 3 id: 269
        things to buy: 1 id: 270
        things to buy: 4 id: 271
        things to buy: 1 id: 272
        things to buy: 2 id: 273
        things to buy: 2 id: 274
        things to buy: 1 id: 275
        things to buy: 2 id: 276
        things to buy: 1 id: 277
        things to buy: 2 id: 278
        things to buy: 1 id: 279
        things to buy: 5 id: 280
        things to buy: 4 id: 281
        things to buy: 4 id: 282
        things to buy: 4 id: 283
        things to buy: 1 id: 284
        things to buy: 5 id: 285
        things to buy: 4 id: 286
        things to buy: 3 id: 287
        things to buy: 3 id: 287
        things to buy: 2 id: 288
        things to buy: 2 id: 289
        things to buy: 1 id: 290
        things to buy: 3 id: 291
        things to buy: 1 id: 292
        things to buy: 5 id: 293
        things to buy: 5 id: 294
        things to buy: 4 id: 295
        things to buy: 5 id: 296
        things to buy: 5 id: 297
        things to buy: 5 id: 298
        things to buy: 5 id: 299
        things to buy: 3 id: 300
        things to buy: 4 id: 301
        things to buy: 2 id: 302
        things to buy: 3 id: 303
        things to buy: 5 id: 304
        things to buy: 3 id: 305
        things to buy: 5 id: 306
        things to buy: 5 id: 307
        things to buy: 4 id: 308
        things to buy: 1 id: 309
        things to buy: 5 id: 310
        things to buy: 5 id: 311
        things to buy: 2 id: 312
        things to buy: 1 id: 313
        things to buy: 4 id: 314
        things to buy: 4 id: 315
        things to buy: 3 id: 316
        things to buy: 2 id: 317

STATISTICS WHEN CLEANING THE SIMULATION:

Removing books...
8 books have been removed

Cleaning all stacks of plates...
5 plates have been removed

Cleaning shopping queue...
50 robots have been removed
```