Factory Back

Foreword

- Use the language of your choice
- A console output is enough
- Send your answer as a Github repo that we can git clone with a README explaining how to make it work
- The goal of this project is to understand how you code and how you handle an open question.
- The project is designed to last about 3 hours. We are aware that you have other obligations, so we do not ask you for the optimal answer.
- Do not hesitate to contact us if you have any questions.

Statement

The goal is to code an automatic production line of foobar.

At the beginning, we have 2 robots, each of which is able to perform several actions:

- Moving to change activity: occupy the robot for 5 seconds.
- Mining foo: occupies the robot for 1 second.
- Mining bar: keeps the robot busy for a random time between 0.5 and 2 seconds.
- Assembling a foobar from a foo and a bar: keeps the robot busy for 2 seconds. The operation has a 60% chance of success; in case of failure the bar can be reused, the foo is lost.

You have large warehouses, stock management is not a problem. On the other hand, the legislation imposes the traceability of the parts used to manufacture the foobars: each foo and each bar must have a unique serial number that must be found on the foobar when it leaves the factory.

We then want to speed up production to quickly take control of the foobar market. The robots can perform new actions:

- Sell foobar: 10s to sell from 1 to 5 foobar, we earn €1 per foobar sold
- Buy a new robot for €3 and 6 foo, 0s

The game stops when you reach 30 robots.

Latest notes

1. A second in the game does not have to be a real second.
2. The choice of actions does not have to be optimal, only functional.
3. No need to do complex maths to solve the problem.