UNIVERSITÉ de Cergy-Pontoise

figure RÉSEAU Cursus Master en Ingénierie

User manual : project scheduler

for the OS project
Third year Computer Science License

Simulating a scheduler

wrote by

Loïc Bachelot & Amélie Rémond

March 2017

Contents

I What should the program do? 2

II How does it work ? 3

1) Creation of a process 4
2) Import an XML file 5
3) See the list of process 6

I What should the program do?

This program simulates a scheduler. Indeed, we have implemented 4 different algorithms:

- FIFO
- SJF
- SRJF
- RoundRobin

The user selects one of these algorithms and sees the results of the execution. The program displays 4 values:

- The average waiting time
- The average restitution time
- The occupancy rate
- The average occupancy time

To execute these algorithms and be able to see these quantities, the user can fill in a list of processes. This list can be filled by importing an XML file or using the process button. It is then possible to see the list of current processes. You have a template of an XML file filled with 2 processes (From TD2).

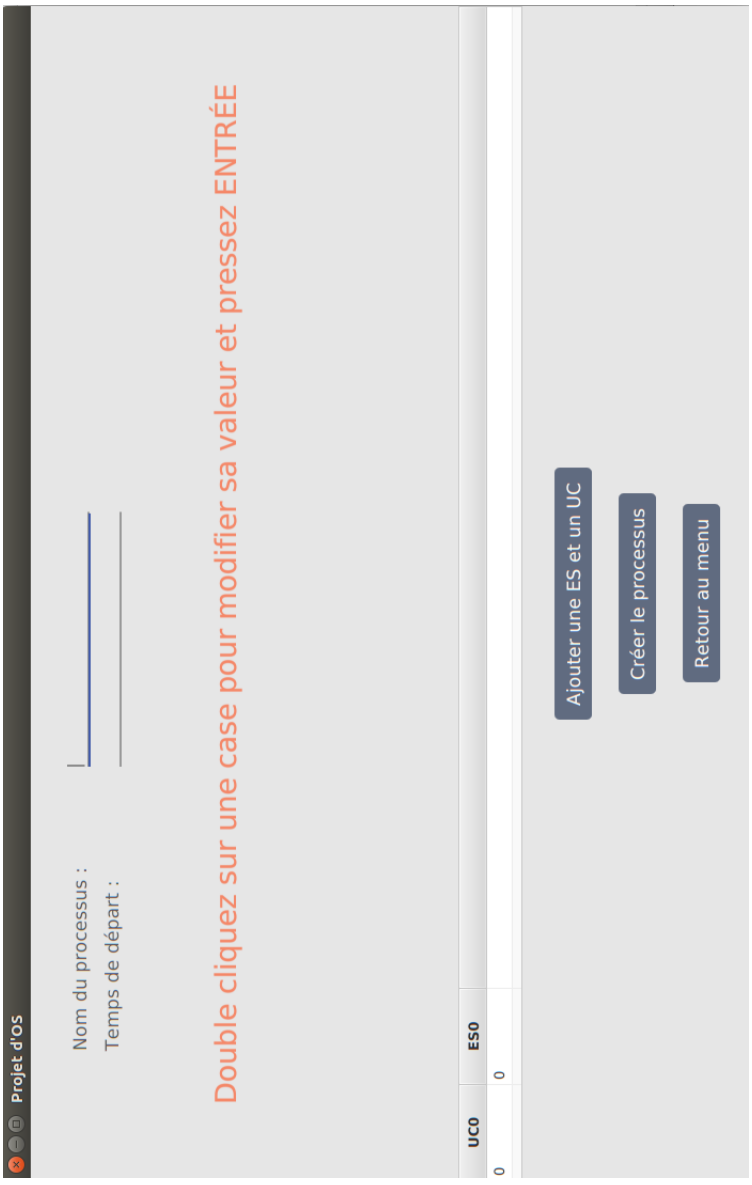
II How does it work ?

When the program is started, the following menu appears: The user can, thanks to the buttons of the following menu:

- Create a process
- Import an XML file
- See the list of process and launch processes
- Quit the programm

1) Creation of a process

To create a process, it must be given a name and a start time and then fill in the Input Output (ES) and Resource (UC) cycle table. To fill in the following table, double click on the box to be modified, enter a value and press the enter key.



2) Import an XML file

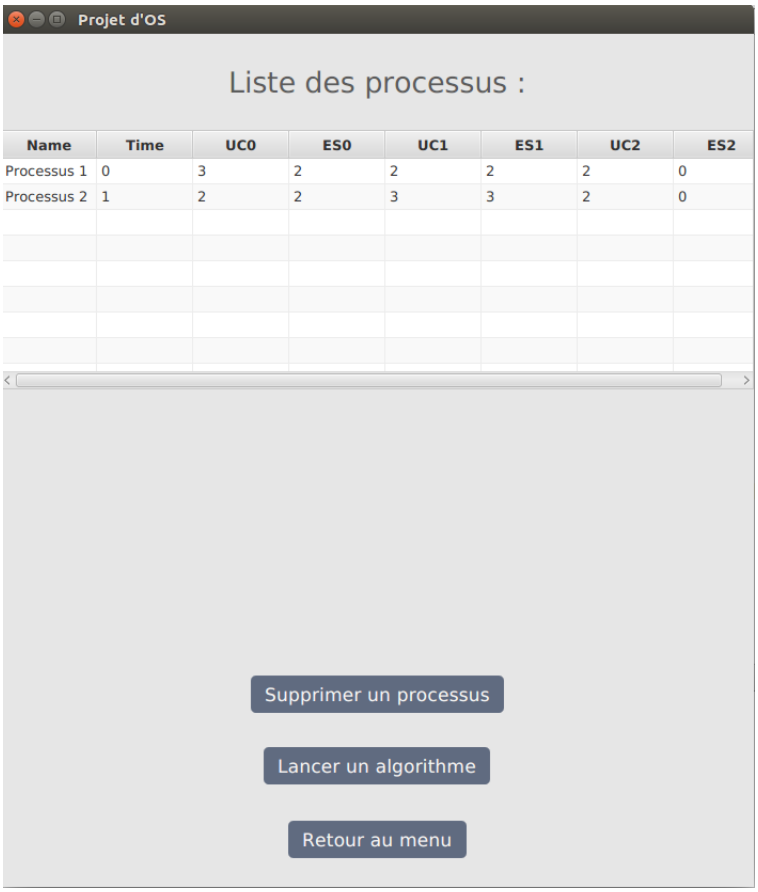
Importing an XML file allows for a faster and automatic process list creation. A test XML file is provided in the appendix.

Simply click on the browse button and choose the desired XML file. Files must follow a certain format as follows:

```
<?xml version="1.0" encoding="UTF-8" ?>
<listOfProcessus id="1"><!---Début de la liste des processus!-->
    <process> <!---Processus 1-->
        <name>Processus 1</name> <!---Nom du processus!-->
        <start>0</start> <!-- Temps auquel le processus commence !-->
        <listOfInOut> <!---Durée de la phase entrée sortie!-->
            <time>2</time>
            <time>2</time>
        </listOfInOut>
        <listOfRessource>
            <time>3</time>
            <time>2</time>
            <time>2</time>
        </listOfRessource><!---Durée de la phase utilisation de l'UC!-->
    </process>
    <process> <!---Processus 2-->
        <name>Processus 2</name>
        <start>1</start> <!-- Temps auquel le processus commence !-->
        <listOfInOut> <!---Durée de la phase entrée sortie!-->
            <time>2</time>
            <time>3</time>
        </listOfInOut>
        <listOfRessource>
            <time>2</time>
            <time>3</time>
            <time>2</time>
        </listOfRessource><!---Durée de la phase utilisation de l'UC!-->
    </process>
</listOfProcessus>
```

3) See the list of process

It is possible to visualize all the ordered processes in a list and to launch the algorithms.



To launch the algorithms, simply click on the "Start an algorithm" button and then click on the algorithm to be tested.

The results appear immediately afterwards. We calculate the following quantities:

- The average waiting time
- The average restitution time
- The occupancy rate
- The average occupancy time

Projet d'OS
Résultats :
Temps d'occupation :
14
Temps moyen de restitution :
13.0
Taux d'occupation :
93,33%
Temps moyen d'attente :
1.5
Retour au choix de l'algorithme