APPLICATION USER'S MANUAL

SOA APPLICATION SCHEDULING OF ALGORITHMS

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OPENING THE SOA APPLCATON

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This guide explains how to install and configure the software that allows to capture and order the processes in the CPU according to the proposed scheduling algorithms.

Note :

- The explanations in this guide assume that you have sufficient knowledge to use the Linux computer.

- For more information about your operating system, please refer to your operating system manual or its online help

- This manual contains explanations of the different scheduling algorithms FIFO, LIFO, ROUNDROBIN, SJF, SRT, PRIORITY.

- Special care has been taken in the preparation of this guide. If you have any comments or questions about the guide, please contact your supplier or your nearest service center.

Warning :

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- The contents of this manual are subject to change without

About the SOA application

The SOA (Scheduling of Algorithms) application is an application for recording, analyzing and scheduling processes from a configuration file.

Learning to use this application is not complicated, but it requires a good understanding of the terms, concepts and algorithms used in SOA

We recommend that you study this manual in detail before using the application.

This user's manual provides an overview of the features of the application and

gives step-by-step instructions for the realization of different tasks

The list of processes according to a variety of algorithms :

1. **FIFO**

   First in, first out (FIFO), also known as first come, first served (FCFS), is the simplest scheduling algorithm. FIFO simply queues processes in the order that they arrive in the ready queue. This is commonly used for a task queue, for example as illustrated in this section.

2. **LIFO**

   LIFO is a method of processing data in which the last items entered are the first to be removed. ... When a program needs to access the most recent information entered, it will use the LIFO method.

3. **SJF**

   Shortest Job First (SJF) is an algorithm in which the process having the smallest execution time is chosen for the next execution. This scheduling method can be preemptive or non-preemptive. It significantly reduces the average waiting time for other processes awaiting execution. The full form of SJF is Shortest Job First.

4. **ROUNDROBIN**

   The scheduler assigns a fixed time unit per process, and cycles through them. If process completes within that time-slice it gets terminated otherwise it is rescheduled after giving a chance to all other processes.

5. **SRT**

   Similar to shortest job first (SJF). With this strategy the scheduler arranges processes with the least estimated processing time remaining to be next in the queue. This requires advanced knowledge or estimations about the time required for a process to complete.

6. PRIORITY

Priority scheduling is a non-preemptive algorithm and one of the most common scheduling algorithms in batch systems. Each process is assigned first arrival time (less arrival time process first) if two processes have same arrival time, then compare to priorities (highest process first).

System requirements :

To install the SOA application open the terminal **-->** enter the installation path **-->** enter the command « make main ».

To launch the SOA application, double-click on the application icon or enter the command «make run »

Help

- For technical help or software support, please contact

soa_info@gmail.com

Before installing the software

- **Installation of the execution environment**

If your operating system is linux you can access directly to the application otherwise you have to follow these steps :

1. Installation of the virtual machine
2. Create a new instance of the virtual machine

3. Configuration of the virtual machine
4. Launching the virtual machine
5. Installation of ubuntu

- **Installation and configuration of the application under linux**

This section explains how to use the application from a Windows and Linux computer.

Opening the application

1. Insert the "Software CD-ROM" containing the application into the CD drive of your computer.
2. Click on the [Démarrer] button ( ), then [Ordinateur] and double-click the [CD-ROM] icon ( ).

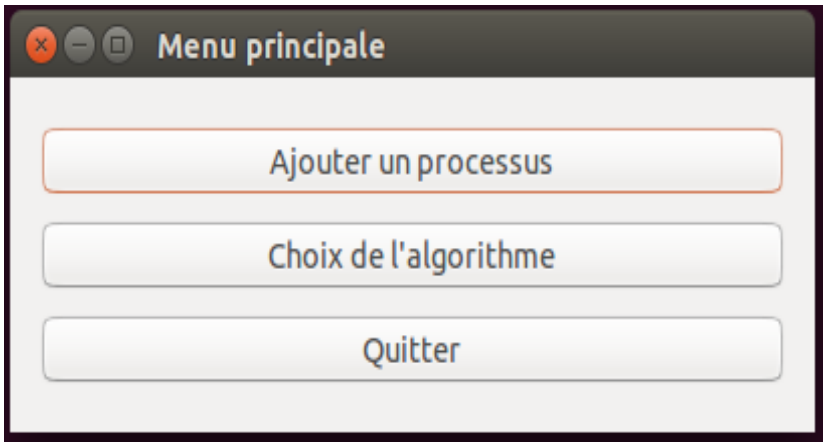
- In Windows XP/Server 2003, click the button « Démarrer », click [Poste de travail] and then double-click the [CD-ROM] icon ( ).

- In Windows 8/Server 2012, click with the right button the Home screen (or drag up from the bottom edge), and then, select [Barre des tâches] **-->** [Toutes les applications] **-->** [Ordinateur], and then double-click [CD-ROM].

- In Windows 8.1, right-click the [Démarrer] button on the desktop, click [Explorateur de fichiers], and then double-click [Explorateur de fichiers], and then double-click the [CD-ROM] icon.

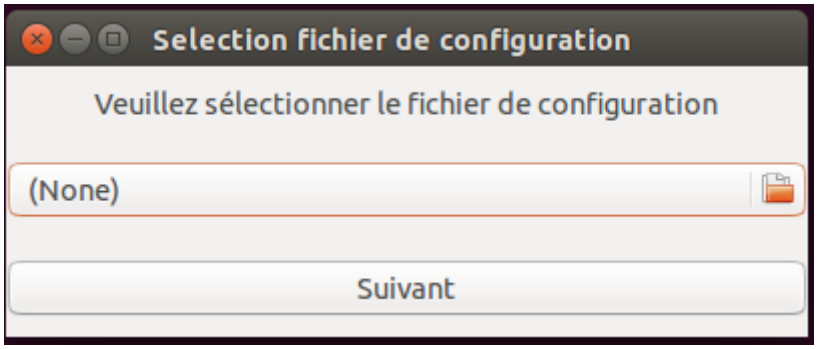
3. Read the message in the window « Bienvenue » and click on the [Passer au programme] button.

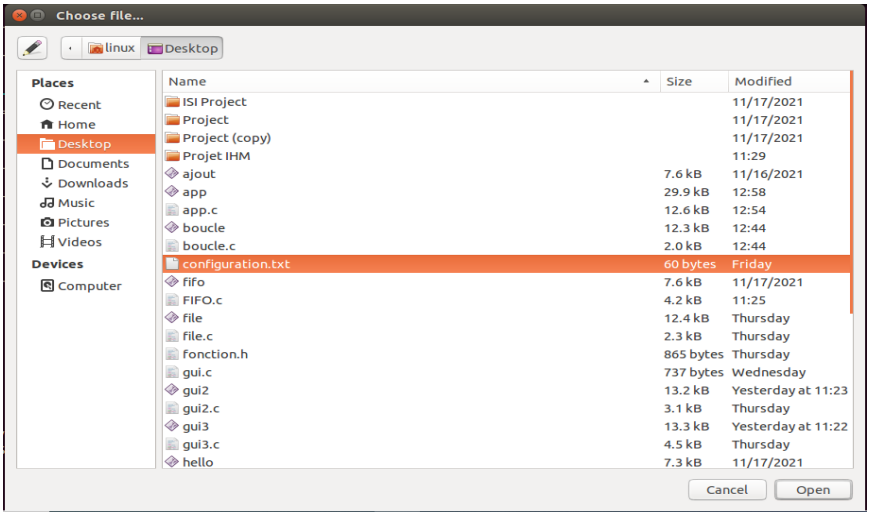
4. The job selection screen appears.



- « Ajouter un processus » Button define the name of each process, its arrival date, the duration of its cycles, its priority.
- « Choix de l'algorithme » Button choose a scheduling algorithm to display the list of ordered processes
- « Quitter » Button Exit the application

Before choosing the algorithm you must first select the configuration file



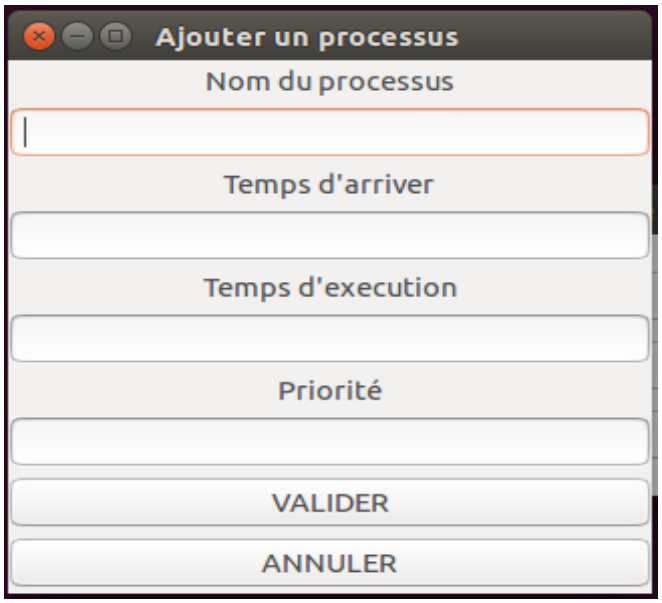


5. Standard use

When the job selection screen appears in step 4 of the "OPENING THE APPLICATION" section Follow the steps below.

- Click on the [Ajouter un processus] button.

- enter the number of processes
- enter the name of each process
- enter the arrival time of each process
- enter the execution time of each process
- enter the priority of each process
- click on validate



- Click on the [Choix de l'algorithme] button

after clicking on this button a new window will appear and you can choose an algorithm among those presented