

Operating Systems (40424)

- Academic Year: 2023-2024, Second Semester
- Course Instructor: Dr. Rasoul Jalili
- Department: Computer Engineering

Rules and Notes

1. The project must be done and submitted individually.
2. You can submit the project within three days after the deadline. A 25% penalty will be applied to the earned score for each day of delay, up to a maximum of 12 hours per day.
3. Submit your answers in a file named in the format:
OS_Prj2_StdNum_FirstName_LastName.

Project Requirements

- In the first part of this project, you must add a series of commands to the shell you wrote in the first phase of the project.
- Use the C programming language.
- Only use the main libraries of the C language and the main libraries of the operating system. The use of other libraries is not allowed.
- Before each command entry, the shell should display the username, hostname, and the current path as follows:

`{userName}@{hostName}-{path}$`

- **The shell must include the following additional commands:**

1. Write a command that lists processes along with their parents, in descending order of priority.

```
>>> pstatus -p
```

2. Write a command that differentiates processes based on whether they are interactive or not.

```
>>> pstatus -i
```

3. Write a command that displays programs running on multiple threads.

```
>>> pstatus -t
```

4. Write a command that shows system information including the CPU model, number of cores, memory size, used memory size, free memory size, kernel version, and interface type.

```
>>> sysfo
```

Good Luck!