מערכות הפעלה
מטלה 1

compiler, shared libraries and processes

Due date – 15/4/2020, 11:59pm

part A (50%) – compilation and libraries

Intro: when we write a "normal" C application, we have all the source code files.
We compile and link them to a single executable file.

We can also compile our code to a library that can be included to other projects statically or dynamically.

In this task you are requested to produce a simple C executable, and a shared library that can be used by this executable. You are also requested to provide a Make file, that will help to utilize each of the sub tasks.

Subtask 1

1.1 write a "hello Ariel" program,in a separate file named "hello_Ariel" file (c and h).
1.2 write a short main "main1_1" that will include "hello_Ariel", and use it.
1.3 write a make file to compile the code.

Subtask 2

2.1 compile "hello_ariel" as a shared object (.so) library
2.2 write a short main "main1_2" that will use this library
2.3 compile to a single executable and update the make file

Subtask 3

3.1 write a short main "main1_3", that will load the lib file from subtask 2 in runtime.
3.2 compile the main and alter the make file.

Subtask 4

4.1 practice with tools (which functions exist, which libs are used)
4.2 alter the make file to have default build, and clean options

part B (50%) – Processes

You are requested to implement a aunching app, that will start a few processes.
Subtask 1

Start 2 processes as nested childs of the main app.
Like this: App -> process1 -> process 2.

Subtask 2

Start 2 processes with the same shared memory (like threads).
Like this: 3*App

Subtask 3

Start a daemon process

Subtask 4

Modify your app, to have all the above subtasks together.
Show the relevant processes tree that will reflect the tasks result.