



Final Project

Use Julia Jump to implement or to modify the given implementation of a simple column generation program to solve the cutting stock problem of the Exercise. Your grade will be given by:

- (5 pts) a written report containing :
 - explanations of the subject;
- (5 pts) the file .jl with the implementation
 - Modify the implementation or create a new one that solves this problem (the implementation solves the problem of the example);
 - Modify the implementation in order to read the data of the exercise from a file;
 - Give the optimal solution explaining how many items of each size are at the solution and how many bars were cut.

This project is to be done in groups of at most 3 persons.

The due date to this project is ~~XXXXXX~~ and it has to be sent by e-mail to af.macambira@gmail.com and to alain.faye@ensiie.fr **24/03/2023**

Example:

A company produces steel bars with $L = 100$ m and cuts the bars for the costumers according to their necessities. Now, the company has to satisfy the following demand:

l_i	number of pieces needed
22	45
42	38
52	25
53	11
78	12

The costs c_p are all equal to one.

We want to minimize the number of steel bars we need to cut in order to satisfy the demand.

Exercise :

A company produces steel bars with $L = 5600$ mm and cuts the bars for the costumers according to their necessities. The costs c_p are all equal to one.

Now, the company has to satisfy the following demand:

Type de demande i	1	2	3	4	5	6	7	8	9	10	11	12	13
Longueur d'une bande l_i	1380	1520	1560	1710	1820	1880	1930	2000	2050	2100	2140	2150	2200
Nombre de bandes n_i	22	25	12	14	18	18	20	10	12	14	16	18	20