Homework #3

Solving the Flow Shop Scheduling Problem using Genetic Algorithms

In this homework, you are going to solve the flow shop scheduling problem for three data sets given in the text file called "`fssp-data-3instances.txt`". The number jobs and machines are different in these data sets. The objective function is to minimize the makespan, i.e., the completion of the last job processed by the last machine.

I would like to remind you the following points which you should consider when you submit your homework. It will consists of two parts: your **code** and **report**. First, your code must be clear and you should define the following using comment lines in the code: **variables names** and their **purpose**, **function names** and their **purpose**. For example, you should write "X is the assignment variable", "CompObj calculates the objective value", etc. Or, you can use a function name that is self explanatory e.g., ApplyMove.

In the report part, you have to mention which **solution representation** (encoding), **crossover** operator and **mutation** operator you used as well as other pertinent and tiny details worth pointing out (e.g., how to choose the **parents**, how you perform the **replacement**). You can use the following table for the output of your solutions. A separate table for each of 3 instances:

Instance: FSSP car1				
Best Solution (sequence of jobs processed by the machines)	Obj. val. of the best chromosome	Avg. obj. val. of the be chromosomes	% Gap of the best chromosome	CPU Time (s)

Finally, for the sake of easy grading, you are supposed to submit the above table as excel file to the moodle using the "result template3.xlsx" file. Please don't forget to write your name to file name. Here is an example:

"Necati_Aras_hw3results.xlsx"

Note: You can use comma for decimal points in this excel file but for tables in original report, you ought to use point, i.e "." for decimal digits and round your results up to two digits.