Work Scheduling Optimization - How to Use

Introduction to the Application

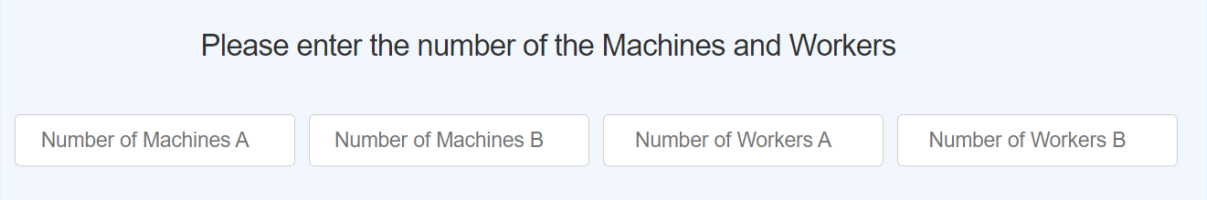
Work Scheduling Optimization Application / Project was developed for optimising the annual work scheduling warehouses, the idea of the project is to build an end to end solution using only Open Source tools (libraries). The purpose of the App is to bring the best optimization solution using Artificial Intelligence together with an easy and friendly UI for the end user.
The problem that the App solves is Open-Shop Scheduling problem with some additional constraints, the following mathematical expression represent the definition of the problem

$$O_m \mid r_j, prec, pconc \mid \sum W_j U_j$$

The current version of the application does not solve that problem due to information security restriction, the current version solves the Job-Shop problem as it defines in Google Or-tools page.

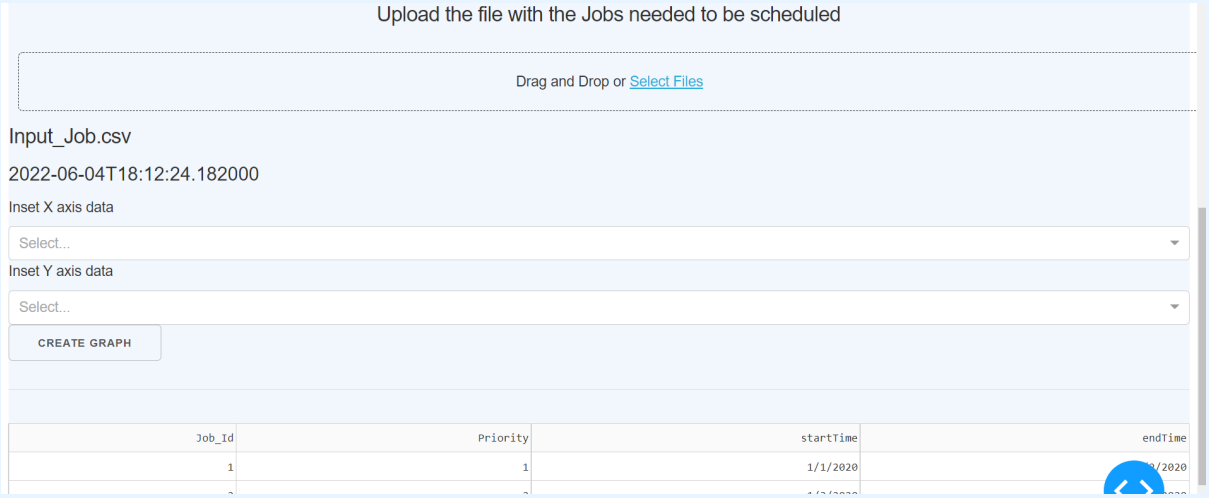
User Input

At this tab the user defines the following:
1. number of machines / workers he has for the current scheduling problem.



In the current version the first session input doesn't become any constraints and won't change the final solution.

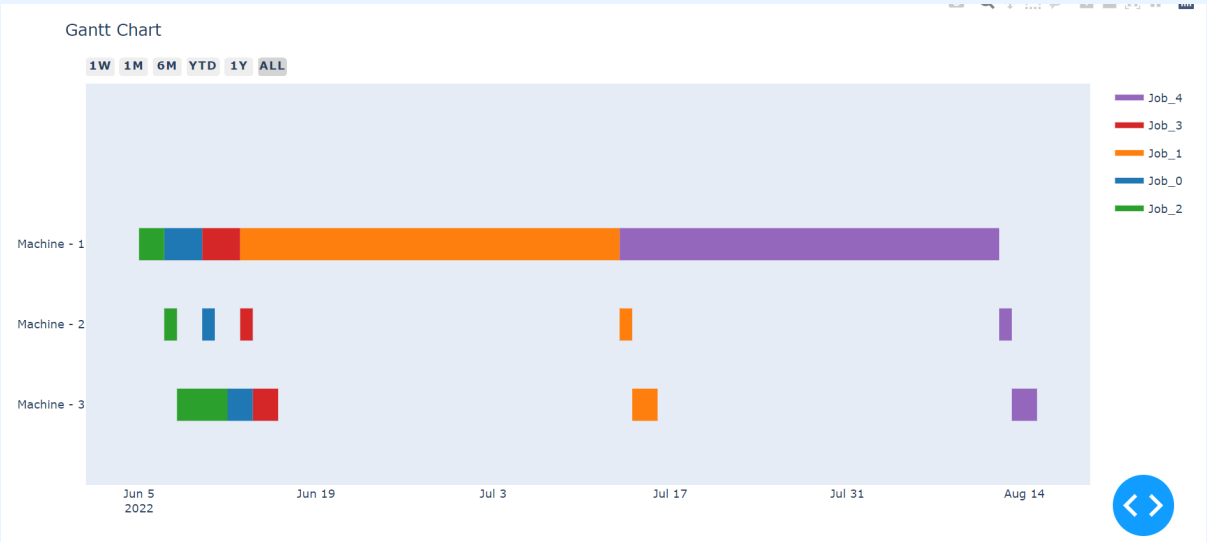
2. Jobs Input



The user needs to upload the Input_job.csv file as the columns definitions with his jobs information.

Solution Output

At the Solution Output tab the user will view his solution results for the scheduling problem, using the Refresh button the data will be updated according to the last data that the user had updated (the application saves the last data in the internal DB for user convenience.



Environment Configuration

At this tab the user will define his tasks (task is action that needs to be processed on a machine as part of a Job) and Machines properties. Some of the current information does not relevant for the Job-Shop problem as it is in the current version.