

Lorem Ipsum

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"There is no one who loves pain itself, who seeks after it and wants to have it, simply because it is pain..."

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Background Job Management System - ASP.Net

User Sign Up/Log in

Users create account through email authentication.

- Create account
- Login (with remember me capability)
- Forgot password (using email address)

Enter account info

Email

Password

Log in

☐ Remember me

Don't have an account? [Create account](#)

Job Posting Form

User can interact through a web interface that allows to download, upload, and edit a txt file located on the server. User can post a job by clicking run button. Uploaded file must be txt file and must be less than 10 KB in size.

Inputs

Download input file

Upload input file

Edit input file online

Run

You will receive an email once results are ready.

Results Form

This form displays a set of output variables and a solution to the user and gives user the option to download the output files in txt or xls format.

Results

No. Completed Solutions: 100

No. Optimal Solutions: 90

Best Solution Obj: 0

No. FTE: 3

No. n-FTE: 2

Planning horizon: 56

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55
1	O	FO	d	d	O	O	O	O	FO	d	d	d	O	O	d	d	d	d	O	O	d	d	d	d	O	d	d	d	O	d	d	d	O	d	d	d	d	d	d	d	d	O	d	d	d	O	FO	O	d	d	d	d			
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3	d	d	d	O	O	d	d	d	d	d	O	O	d	d	d	d	d	O	O	d	d	d	d	O	O	d	d	FO	O	d	d	d	d	O	FO	O	d	d	d	d	FO	O	O	d	d	O	O	d	d	O	d	d	O	O	
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5	O	FO	O	d	d	d	d	O	FO	O	d	d	d	d	FO	O	O	d	d	d	d	d	O	O	O	O	d	d	d	d	O	O	O	O	d	d	O	O	d	d	d	d	O	O	d	d	d	d	d	O	O	d	d		

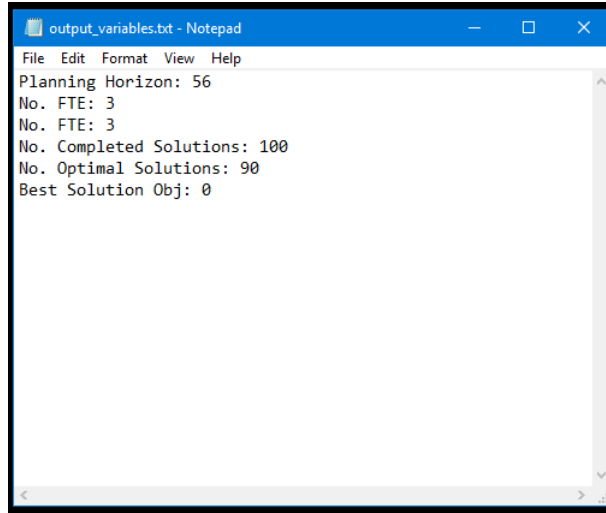
Save output file txt

Save output file excel

In this form six variables are read from a txt file named “**output_variables.txt**”. This file is written by the executable file after each job terminates. These six variables are:

1. Planning Horizon
2. No. FTE
3. No. FTE
4. No. Completed Solutions
5. No. Optimal Solutions
6. Best Solution Obj

The corresponding values for these variables are saved to the “**output_variables.txt**” file like picture below. An example of this file is attached to this document.



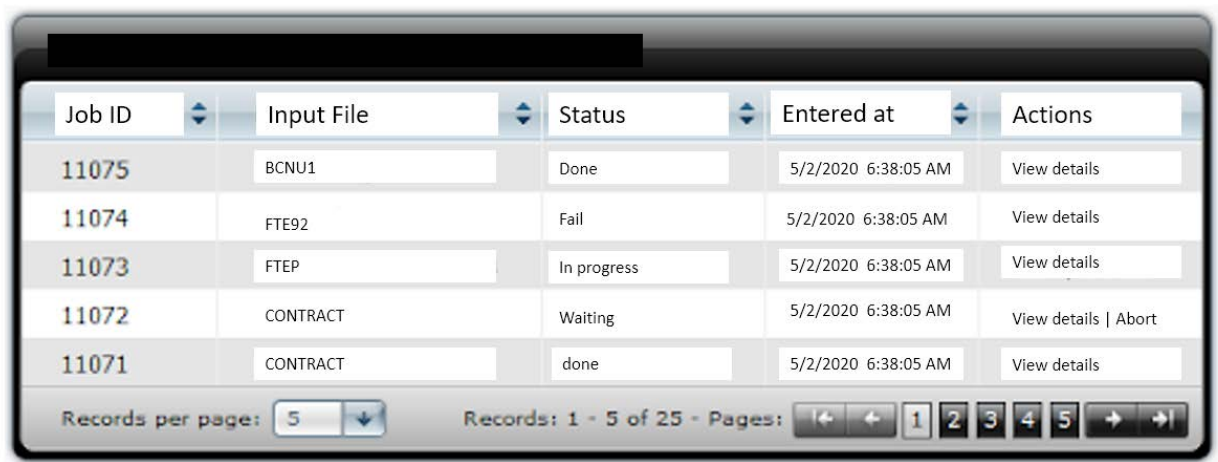
In addition to displaying these variables, the Results Form depicts a data grid view like picture below. The content is read from an output file named “[output_solution.txt](#)”. Coloring of each cell is based on its content and whether it is a weekend (conditional formatting). Second column with the header 0 is the first day and it is a Friday. Saturdays and Sundays are colored yellow. Size of this grid view depends on the content of the “[output_solution.txt](#)” file. If the grid view is larger than the page size, scroll bars are needed.

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55				
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3	d	d	d	O	O	d	d	d	d	d	O	O	O	d	d	d	d	O	O	O	d	d	d	O	O	d	d	d	FO	O	d	d	d	d	d	FO	O	d	d	d	d	FO	O	O	d	d	O	d	O	d	d	O	O							
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User can also download an output named “[outputs.txt](#)” file in txt or “[outputs.xls](#)” excel format. The paths to these files are given by the executable file upon completion/termination of a job.

User Jobs Form

User has access to a form where they can see all the jobs that they have posted in a grid view. User can click on the input file name in the second column to open the Job Posting Form for each job and view the input file but, user is not allowed to edit/overwrite it once the job is started. Last column, actions, includes “view details” links that open the Results Form for that specific job. Also, actions include Abort job if it is not already started.



Job ID	Input File	Status	Entered at	Actions
11075	BCNU1	Done	5/2/2020 6:38:05 AM	View details
11074	FTE92	Fail	5/2/2020 6:38:05 AM	View details
11073	FTEP	In progress	5/2/2020 6:38:05 AM	View details
11072	CONTRACT	Waiting	5/2/2020 6:38:05 AM	View details Abort
11071	CONTRACT	done	5/2/2020 6:38:05 AM	View details

Records per page: 5 Records: 1 - 5 of 25 - Pages: 1 2 3 4 5

Database

A database is used to collect information, path to the input txt file, paths to output folder, execution time, status of the jobs, etc.

Input and Output Files

Files that are needed for running the job are attached to this document. These include:

executable file: `ConsoleApp.exe`
input file: `instance.txt`
output txt file: `outputs.txt`
output excel file: `outputs.xls`
output variables file: `output_variables.txt`
Results form's grid view: `output_solution.txt`

Running the executable file

The executable file takes two arguments: path to the input txt file, and path to the outputs folder. The executable will create the folder if it does not exist. Command to run the job:

```
ConsoleApp.exe <path_to_input_file> <path_to_output_files_folder>
```

Example execution command:

```
ConsoleApp.exe "..\instance.txt"  
"C:\freelancer_project\ConsoleApp\ConsoleApp\bin\output_files"
```

Execution

The queue/job management system runs an executable file with the arguments from the database and stores the path to results in the database. Also, it should send an email to the user once the job is done.