Software Architecture

UNIVERSITY OF THE WITWATERSRAND

Software Design Project 2018

COMS3009

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Scope

- This report will define high level design and technology decisions of the generation of Gantt Chart schedules in Batch Process Optimization from GAMS/CPLEX deterministic solvers by using a web-based GUI interface.

- The report includes a description of use-case diagram, layers of the system and system requirements.

Definitions

Batch processing is the performing of an industrial process on material in batches of a limited quantity or number. A Gantt chart is type of bar chart that that illustrates a project schedule, it also shows the dependency relationships between activities and current schedule status
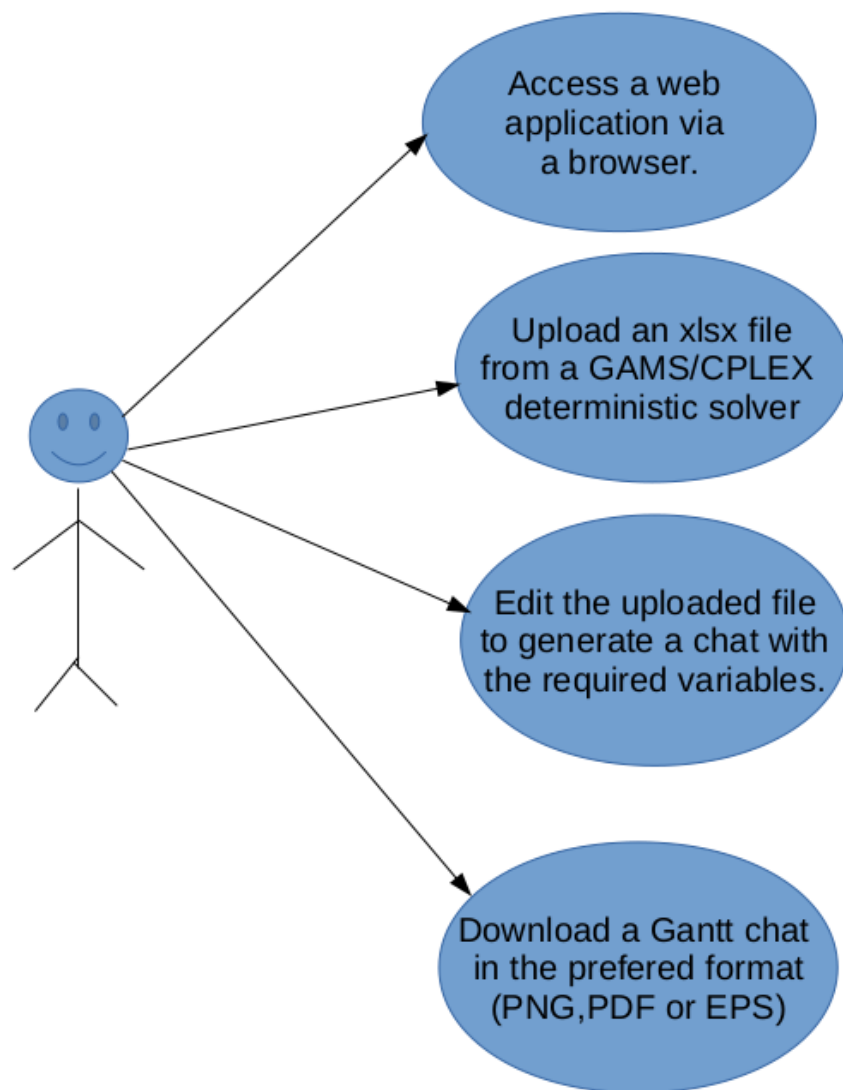
References

   ///

1. * Add the references properly*

2. * Add the constraints of the system(Compatible browsers) *

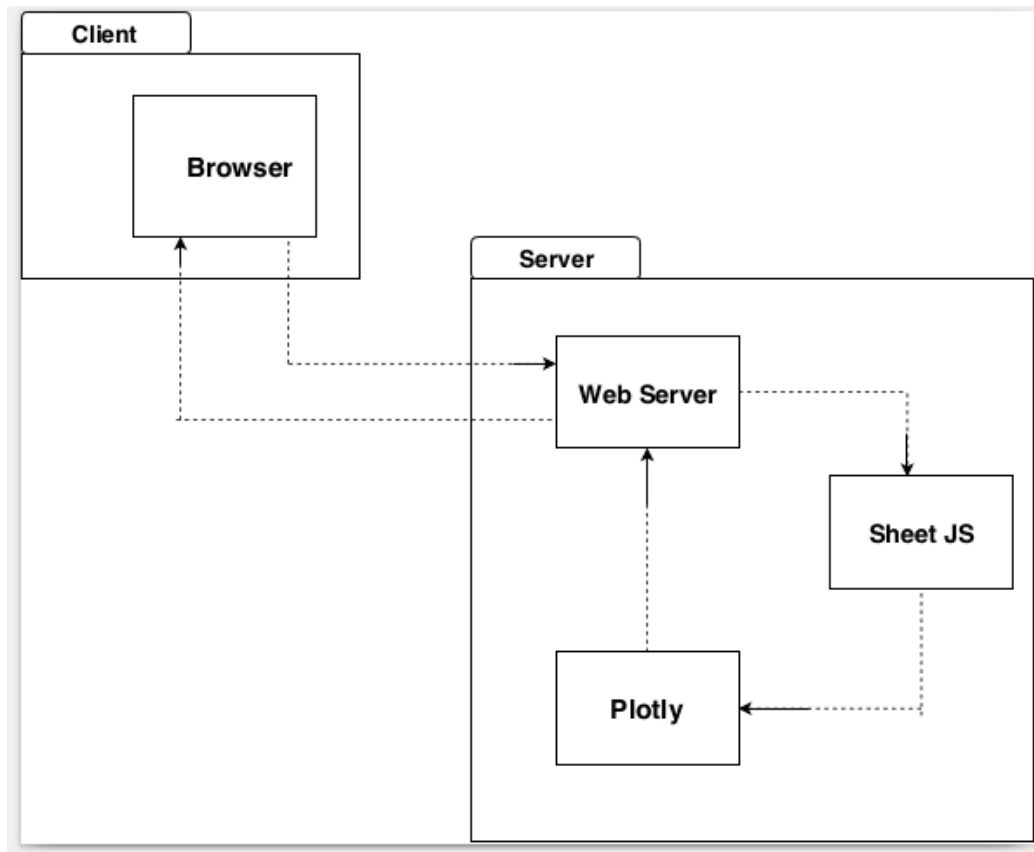3. * Discuss the other libraries used properly*

4. ///

http://cs.bilkent.edu.tr/~cagatay/cs413/1016-1998_00741934.pdf

Use-Case View

This is an overview of the system using a use-case diagram.

Deployment Diagram

A Client will access the system via a compatible web browser. After uploading the required xlsx file the system will send the file to a Server.

The server will send the file to Sheet JS (A JavaScript library that works on xlsx files) which will allow us to choose the variables that must be plotted. Plotly will generate the required graphs and send them to the Web Server, which will send it to the browser so the user can download it in the required format.

Activity Diagram

```
                              ●
                              │
                              ▼
How-To page  ◄────────  Home page  ────────►  About page
                              │
                              ▼
                    Upload/Drag xlsx file
                              │
                              ▼
View Uploaded file  ◄────────  ◇  ────────►  Show pop message
        │                                          │
        ▼                                          ▼
Plot Gantt chart of data                          ◉
        │
        ▼
Download plots in required format
        │
        ▼
        ◉
```