

Design and implement a simple Project management system.

The Project structure example:



The Project can include unlimited number of Subprojects and Tasks.

Each Subproject can include unlimited number of Subprojects and Tasks.

The Task doesn't have any children.

The Task/Subproject can be related to only one Project/Subproject.

The Project/Subproject must have at least one Task/Subproject.

The Project/Subproject/Task data model is:

```
{
  "uid" : "String",
  "name" : "String",
  "type" : "String", // {"TASK", "PROJECT"}
  "startDate" : "Date",
  "endDate" : "Date",
  "parentUid" : "String"
}
```

The full Project data is in attached json file.

Please implement the following as Java (8 – 11) Spring Boot project (include the Swagger to demonstrate implementation):

- Upload Project from file
- Keep uploaded in DB (use In-Memory H2 Database)
- The Task has the Start/End date and Project/Subproject doesn't.
The Project/Subproject Start/End date should be calculated and saved in DB as well.
The Project/Subproject Start date is an earliest related Subprojects/Tasks Start date.
The Project/Subproject End date is a latest related Subprojects/Tasks End date.

- Add new Task/Subproject to existed by provided uid(the Subproject can be added only with related Task)
- Delete Task/Subproject by provided uid (the last task can't be deleted)
- Calculate the Project/Subproject/Task completion status (%) based on Start and End date:

Example:

Start date: Oct, 2, 2021

End date: Oct, 11, 2021

Completion status:

At Nov, 6 2020: 0% (not started yet)

At Oct, 2 2021: 0% (just started)

At Oct, 3 2021: 10%

At Oct, 11 2021: 90%

At Oct, 12 2021: 100% (finished)

- Get completion status (%) for given Project/Subproject/Task for any provided date
- Update Task's Start/End date
- Return Project hierarchy as a json.
- If you're using a customized data model, please implement it as well.