

ETHEREAL MACHINES PVT LTD

BACKEND DEVELOPER ASSIGNMENT

PART 1

- Please go through the shared EXCEL FILE.
- Write a script to generate values at the specified "UPDATE INTERVAL" for each "FIELD".
- The "AXIS" sheet has sample values for an Axis "X". Your script must generate values for 5 axis. Axis X + additional axis (Y, Z, A, C) for a total of 20 machines.
- Design an optimized Database Schema for the above generated values and push the generated values (using your script) through SQL Queries to populate the database.
- Note: Schema must be Modular Eg: Provision to add new machines, axes and fields without any breakages.

PART 2

Create a DRF endpoint for a User management System with token-based authentication and a dynamic user structure.

ENDPOINTS:

1. Create APIs for USER MANAGEMENT like Authentication & Authorization.
2. Create endpoints for CRUD operations for Schema that you have created.
3. Get machine historical data of past 15 mins for a singular axis or multiple axis, depending on query.
4. WebSocket connection to get all machine real-time values.

Access rules:

User Groups	Resources	Field	Create	Read	Update	Delete
SUPERADMIN	ALL	ALL	Yes	Yes	Yes	Yes
Manager	WebSocket API	-	-	Yes	-	-
	Machine Database	All except 'tool_in_use'	Yes	Yes	Yes	No
		tool_in_use	No	Yes	Yes	No
Supervisor	WebSocket API	-	-	Yes	-	-
	Machine Database	All except 'tool_in_use'	Yes	Yes	No	No
		tool_in_use	No	Yes	No	Yes
Operator	WebSocket API	-	-	Yes	-	-
	Machine Database	All except 'tool_in_use'	No	Yes	No	No
		tool_in_use	Yes	Yes	Yes	No