

Tesla Energy Sales Engineering, Full-Stack Software Engineer – Take Home Challenge

Prompt

You are tasked with building a site layout webpage that allows users to mockup the build of materials and site layout of an Industrial Energy Battery site. This industrial site will be providing energy for houses, stores, etc. so we need to make sure it fits the requirements of the customer. We want a very intuitive UI that allows the customer to configure the assembly of batteries they want on their site. We have 4 different types of batteries each having different properties such as dimension, energy density, and cost as detailed below.

Device Name	Floor Dimension	Energy	Cost	Release Date
Megapack 2XL	40FT x 10FT	4 MWh	\$120,000	2022
Megapack 2	30FT x 10FT	3 MWh	\$80,000	2021
Megapack	30FT x 10FT	2 MWh	\$50,000	2005
Powerpack	10FT x 10FT	1 MWh	\$20,000	2000
Transformer	10FT x 10FT	-0.25MWh	\$10,000	-

Users of this UI want to enter the batteries they want and have the UI give them the budget, land size and required energy. We also want the UI to create a mock site layout showing the layout of the site. Showing images of these devices is a plus as this makes the UI more intuitive

Requirements

- The user should be able to enter the number of each device they want, and your UI should show the price, land dimension required and the sites energy density
- Assume that for every 4 industrial batteries bought 1 transformer is needed.

- The UI should also have an autogenerated layout showing an arrangement of batteries based on the user's configuration
- The site layouts should not exceed 100ft in width
- If this project requires many things to work, ensure the whole app is runnable with one command.
- Make sure the front-end service runs on <http://localhost:8000> when hosted locally
- **Software Stack**
 - o React
 - o JavaScript/TypeScript
 - o Node/Python/Golang
- Adding any one of this is a plus:
 - o A testing library
 - o Typescript
 - o Surprising features

Example



Notes

- This is an example of a bare minimum UI that has no visual properties but is shown to guide you on how the layout should be.
- No json should be shown on your UI

Deliverables

- A GitHub URL that contains your project and a README explaining your app.
- External dependencies should NOT be included, but should be obtainable with a single command (yarn, npm install, etc.).
- After obtaining dependencies, the user should be able to run and view the interface with a single, clearly documented command.