

## Instructions

Insyd is helping AEC (Architecture, Engineering and Construction) businesses with tools and systems to help them run their operations smoothly and scale their businesses. We want to see them succeed because this is how Indian designers and materials will shape world Architecture.

You are given 2 practical problems to solve for these businesses. **Pick any one** and follow the respective instructions.

**Important:** Any code you submit (except libraries or frameworks you're using) should be written by you. Use of AI is encouraged only for research and learning purposes. Please don't do anything (e.g. plagiarism, proxy submission) which is considered a breach of trust – Deception might help you crack this assignment, but it won't help you succeed in your career.

## Option 1 (Advisable for candidates seeking SDE role)

### Background

Most Indian material businesses have no visibility over their inventory levels. This leads to low net margins (because of dead inventory, stocking poor-performing SKUs, damaged inventory etc.) and low confidence in their ability to scale their operations.

### Part 1: Problem solving document

Problem-solve for a business facing inventory issues. Think about how tech can solve problems here, but keep in mind that not all problems need tech.

#### Deliverables

A document not exceeding 2 pages in length explaining your solutions to the problem. Use diagrams and tables if necessary.

### Part 2: Implementation

Implement a system which can fix one or more solutions you mentioned above in NextJS + ExpressJS stack. Your solution should solve the problem in a meaningful manner. If you get stuck or have any doubts, make assumptions and mention them along with your submission.

#### Deliverables

1. Links to Github repositories
2. A deployed app on a platform of your choice

## Option 2 (Advisable for candidates seeking an AI-first role)

## Background

Material brands in India (e.g. flooring, laminates, lighting) spend a lot of effort and money on marketing, but most of it goes to waste because of lack of systems to capture leads. A simple example of this are product enquiries which slip through the cracks because companies fail to respond to them on time.

### Part 1: Problem solving document

Problem-solve for a business facing the problem of lost leads. Think about how tech can solve problems here, but keep in mind that not all problems need tech.

#### Deliverables

A document not exceeding 2 pages in length explaining your solutions to the problem. Use diagrams and tables if necessary.

### Part 2: Workflow and automation

Implement an automation which can capture website inquiries, categorise them and convert them into customers in a timely manner. Some inquiries may require nurturing and follow-ups – your automation should have this built-in, along with any human-in-the-loop actions or approvals you deem necessary.

Use a code SDK or library (e.g. AI SDK, Mastra) to implement the solution. No-code builders like n8n, Make are not allowed.

Demonstrate your solution end-to-end, creating webpages or consoles as necessary. When in doubt, make assumptions and make them explicit.

#### Deliverables

1. Links to Github repositories contain the source
2. A deployed app on a platform of your choice