

Problem Statement:

Build a full stack application for building [Ishikawa Diagrams](#) that you will be able to demo and explain during your interview.

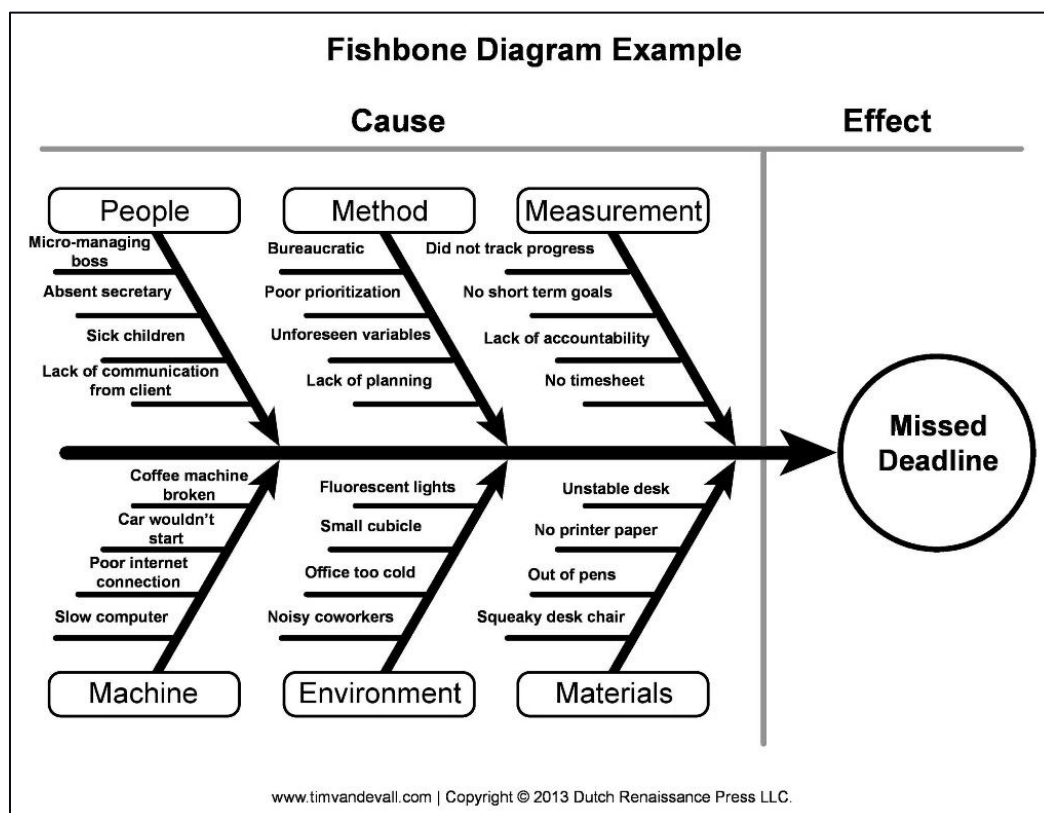
Background of an Ishikawa (Fishbone) Diagram:

Ishikawa (Fishbone) Diagrams are used as root cause analysis troubleshooting tools. They are also referred to as Cause-and-Effect diagrams in many cases.

The left side of the example shown below explains potential causes (which look like the bones of a fish) for the effect (which would be the head of the fish) on the right side.

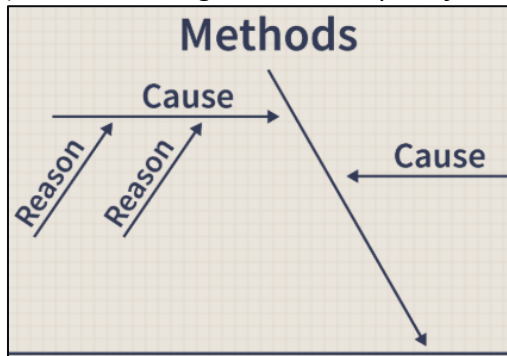
As you travel from the head of the fish down to the bones, the explanation for the problem will become more specific.

For example, I could have missed my deadline due to people. More specifically, I could have either missed my deadline because I have a micro-managing boss or because I have sick children at home.



Functional Requirements:

1. User can create new Ishikawa diagrams
2. User can modify existing Ishikawa diagrams
3. User can delete existing Ishikawa diagrams
4. Users will be able to add/modify/delete bones of an Ishikawa diagram
5. Users can access fishbones that other users have created
6. Fishbones can have any number of nested bones:
(the below image shows a depth of 3 nested bones: → Method → Cause → Reason)



7. Each bone can be assigned 1 piece of information.
Using the Example from the first page: I can include best known methods for how to overcome each potential root cause.
For the micromanaging boss: I want to assign the information = “Set boundaries”
8. Created diagrams and all associated information are saved and able to be accessed when coming back to the application.

Evaluation Criteria:

1. The emphasis of this project will be on the front-end presentation, UX matters.
2. Ability to explain the (generated) code for this project.
3. The backend should be functional, but do not spend much of your time on it.

Project Delivery:

1. Push your code to a public Github repository and share the publicly accessible link with us:
 - a. David.bolla@kla.com
 - b. Nishanth.pasham@kla.com
2. **Deadline:** 24hr before your first interview.

Other Notes:

1. It is encouraged to use all resources available to you to make the best UI you can before your interview.
 - a. The **use of GenAI tools is highly encouraged** (such as ChatGPT, Cursor IDE, etc.).
 - b. If you do use GenAI, be prepared to explain how you used it and be able to **explain all aspects of the generated code**.
 - c. Cite all sources. If we determine that your code is plagiarized, then you will be immediately disqualified.
2. We understand that you have other commitments outside of this project. When you show up for the interview, give us an honest assessment of how long you spent on this project so that we may judge it accordingly.
3. Taking 3-5 hours on this project is the general expectation.
Taking more or less time will not disqualify your project.
4. If you have additional questions about the assignment, please contact David Bolla at david.bolla@kla.com with your questions.