Lab Assignment 1

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January 17, 2025

You should complete given exercises in FigJam and submit `.jam` file to Gradescope.

1 Analyzing with PACT

The PACT framework is a fundamental tool in interaction design that helps analyze design problems through four key lenses: People, Activities, Contexts, and Technologies. This worksheet will guide you through applying the PACT framework to scope and analyze design challenges effectively.

Before analyzing a specific design problem, review these key aspects of each PACT component:

People	Activities
- Physical characteristics (age, vision, hearing, mobility) - Mental characteristics (attention span, memory, learning style) - Experience level with similar technologies - Motivations and emotions - Individual vs. group usage patterns	- Regular vs. irregular tasks - Simple vs. complex actions - Time-critical vs. flexible timing - Single user vs. collaborative work - Content creation vs. consumption
Contexts	**Technologies**
- Physical environment (lighting, noise, space) - Social context (private vs. public, formal vs. informal) - Organizational context (rules, norms, workflows) - Cultural considerations - Time of day/week/year	- Input devices available - Output methods possible - Communication requirements - Content formats needed - Processing capabilities required - Infrastructure dependencies

Choose one of the following design scenarios to analyze:

1. A mobile app for university students to find study spaces on campus

2. A smart home control system for elderly users

3. A collaborative whiteboard tool for remote design teams

2 Design Problems

Work together on your design concept for one of the listed problems below. Try to change everything from mundane to weird, and from old-fashioned to futuristic. Use generative AI such as DALL-E or Midjourney to refine and realize your concept. If working in pairs, one person could pick a problem, and the partner could refine it. So choose one of the following, and then keep asking questions while sketching your concept.

List of design problems for lab:

- Split a check in the restaurant. Split a check at a restaurant between vegetarians and meat-eaters..

- Organize your wardrobe.

- Keep track of messages across all platforms (whatsapp, wechat, email etc) that need to be responded to or viewed later.

- Know where, what, and how to recycle. Donate/recycle old goods and clothes efficiently.

- Users do not like waiting in line for the cinema. Do something about it.

- Track your health with some kind of wearable tech.

- Prevent your parked car from being stolen while you go on holiday.

- You need certain essential items (toiletries, medical supplies etc) ASAP. Find out EXACTLY which store, area of store and shelf they are located in as quick and simple a way as possible.

- Design an app that makes it safe to find the ideal roommate in a new city.

- Design an Audiobook or Podcasting mobile app that is highly personal, highly interactive and with the ability to bring even more utility to the user than a book ever could.

- Create a calendar for somebody who frequently travels to different timezones and needs to keep track of multiple appointments in multiple locations.

- Give the user an interface that can help them manage their waste disposal.

- Redesign the Tashkent metro map and make it easy for foreigners to navigate.

- A better experience for 404 Page Not Found.

More design problems can be found here and here

3 Creative Thinking

You should express how creative and original your thinking can be by completing following tasks. I encourage you to go as far as possible in your imagination. Don't criticise your ideas and even though they look silly. Remember, quantity is more important than quality in this process.

3.1 Crazy Shapes

Complete shapes given in Figure 1. Assume if they can be part of some product. Explain how well they fit into this product and how one is supposed to interact with this product.
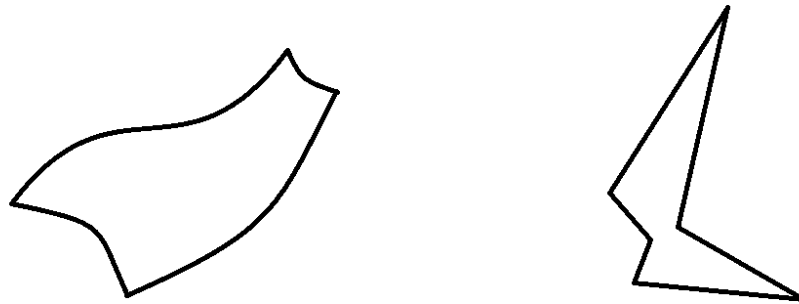
Figure 1: Shapes

3.2 Crazy Captions

Put in your own creative wording for each of these images. You can write some dialog between the characters, write a single-line caption, or turn the image into a clever meme. Keep it short and witty!

Figure 2: Cartoons

3.3 Crazy Applications

Find an original use of a shoe horn and take a photo of it. Attach this photo to your individual assignment. Discuss advantages and disadvantages of using shoe horn for this purpose.

Figure 3: Shoe Horns

4 Mind-benders

4.1 Overtaking Trains

Picture below shows the unfortunate situation after two trains found themselves on the same line, going in opposite directions. The problem the two drivers faced was how to pass each other, with no aid but the short spur line, which was only long enough to take either one truck or one engine at a time.

There was only one driving unit on each train, but there was nothing to stop part of one train being temporarily hooked to the other train and pulled by it or pushed by it.

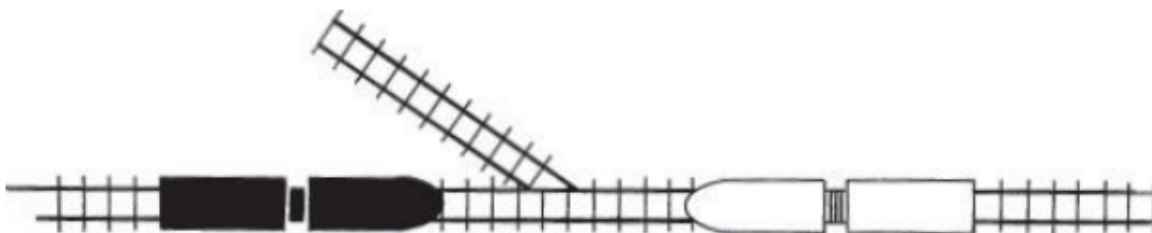How would you advise the drivers? Please, show your answer in series of pictures.

Figure 4: Trains

4.2 Farmer's Will

When Farmer Jones died, he left the quarter of his land that contained the farm buildings to his wife, and the remaining L-shaped area was to be divided equally between his four sons on the condition that the division would be into four parts that were identical in size and also identical in shape.

How should sons divide the land? Please, show your answer with drawn borders.

Figure 5: Farmer's House

4.3 Fitting Words

Fitting four words into a word square, so that the same words read horizontally and vertically, is not difficult. But can you fit six words into a four-by-four word square?

For example, can you fit these words: AREA, REAR, DEED, DART, BRAT, BARD?
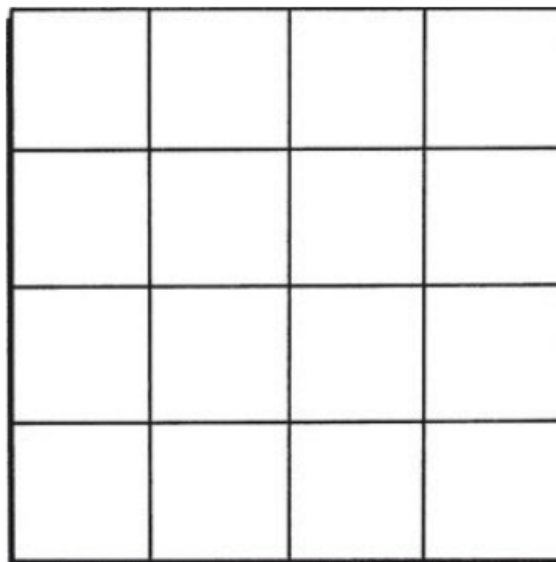

Figure 6: Squares