

## **Assignment 1**

Course Selection Support App for Penn Students

### **Stage 1: Need-Finding**

#### Participants

I interviewed more than two Penn graduate students. I will get in touch with them during the full assignment. Below are two representative participants. Interviews were conducted as semi-structured conversations, where participants walked through their real course selection workflow using Path@Penn and other tools.

- **Participant A**

- Program: M.S. in Integrated Product Design (IPD)
- Year: First-year Master's student

#### Key Findings

1. high friction

A recurring frustration was the **login process**, which requires:

- Entering Penn credentials
- Completing Duo authentication
- Repeating this process frequently
- **Participant B**

- Program: SEAS Master's student (IPD)
- Year: First-year Master's student

#### Uncertainty caused by “Pending” enrollment status

One major source of stress was the **“pending” status** when enrolling in popular or required courses. When courses are marked as “pending,” students lack tools to meaningfully plan around uncertainty, **suggesting a need for UI support that enables proactive planning rather than passive waiting**.

Participant A described this as:

“Every semester I end up waiting on pending courses and can't really plan properly until I know whether I got in.”

This uncertainty made it difficult to:

- Finalize schedules
- Decide backup courses
- Assess workload balance

The system does not support proactive decision-making during this waiting period.

Another interesting point I found during the interview: **Difficulty evaluating long-term value of courses**

Participants emphasized that **choosing courses is not just about fulfilling requirements**, but about whether a course:

- Aligns with their **future career goals**
- Builds relevant skills
- Fits into a longer-term academic or professional trajectory

However, current tools provide **limited support for this kind of reflection**.

Participants often relied on:

- Informal advice from peers
- Guesswork
- External research outside the official system

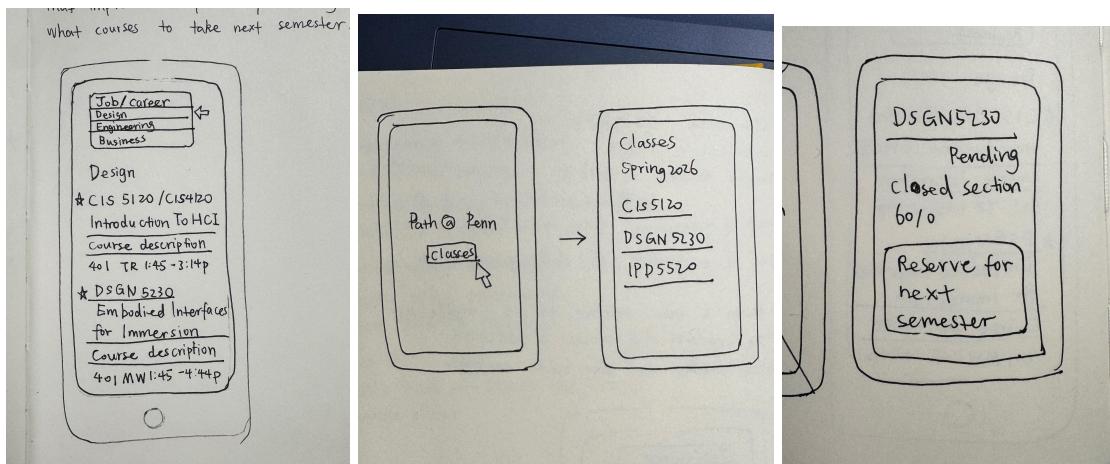
### Major Design Opportunities

Based on the interviews, we identified the following **three major design opportunities** that could be meaningfully improved through a UI solution.

1. When courses are marked as “pending,” students lack tools to meaningfully plan around uncertainty.
2. Reduce cognitive and interaction friction in course exploration, such as Frequent logins, authentication steps, and fragmented information interrupt the decision-making flow.
3. Connecting course choices to future career goals, students struggle to evaluate whether a course is “worth taking” in terms of long-term professional development.

## Stage 2: Low-Fidelity Prototyping

1. This sketch presents an interface that displays a **wide range of career paths** currently available in the job market. Users can select one or more careers they are interested in, and the system automatically ranks available courses from most relevant to least relevant based on the selected career goals. 2. This sketch explores a course selection interface that requires only a single login, rather than repeated authentication during browsing and decision-making. 3. This sketch introduces a “**reserve for next semester**” option when a course is already full. Instead of reaching a dead end, users can indicate future interest in the course, allowing them to plan ahead and reduce uncertainty in future semesters.



### 2. Iteration process

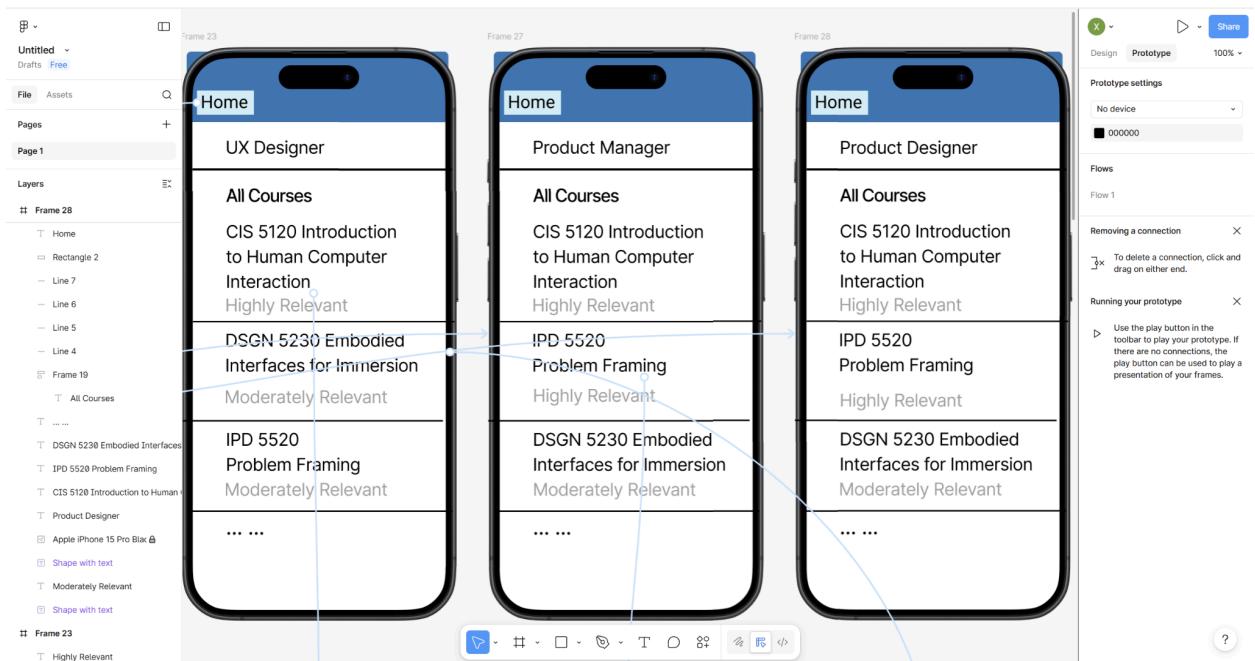
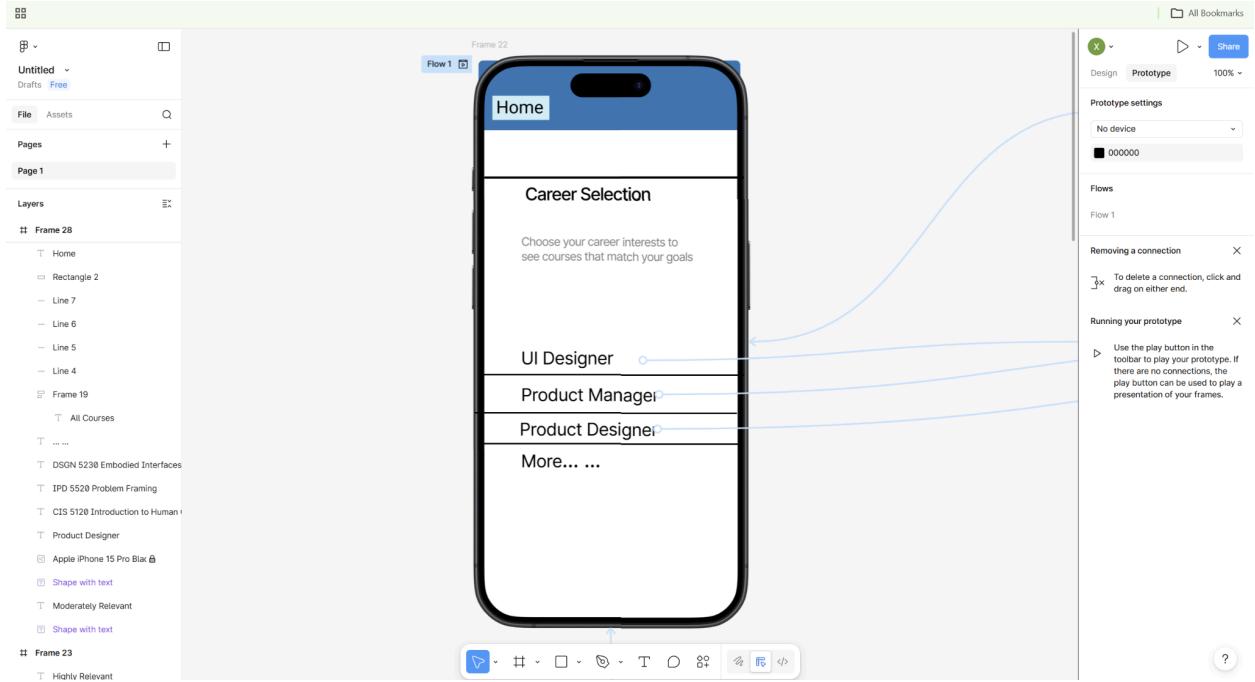
I showed the three sketches to one of the interview participants: The participant responded most positively to the career-based course ranking, noting that it helped them quickly narrow down options without extensive manual comparison. The “reserve for next semester” feature was described as reducing anxiety around full courses and helping with long-term planning.

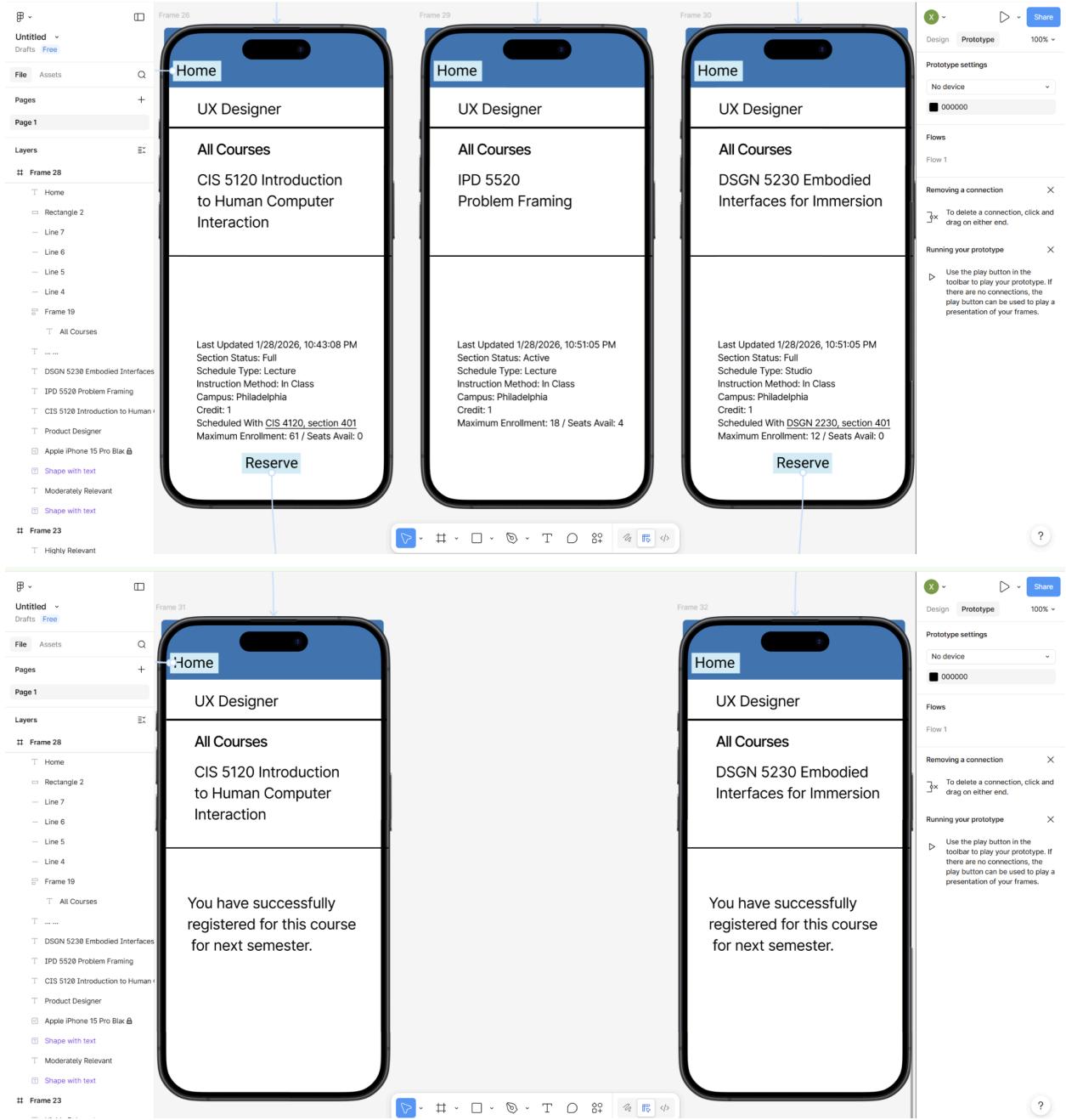
## Stage 3: High-Fidelity Prototyping

Design rationale: The high-fidelity prototype focuses on the core decision-making flow rather than auxiliary steps such as login, as the goal is to support course comparison and planning under uncertainty.

<https://www.figma.com/proto/guV7vx8SQoowL2GeY59oaq/Untitled?node-id=0-1&t=ja1yMS8VOFvI8xJi-1>

I created a high-fidelity prototype in Figma that combines Sketch 1 (career-based course sorting) and Sketch 3 (reserving full courses for the next semester).



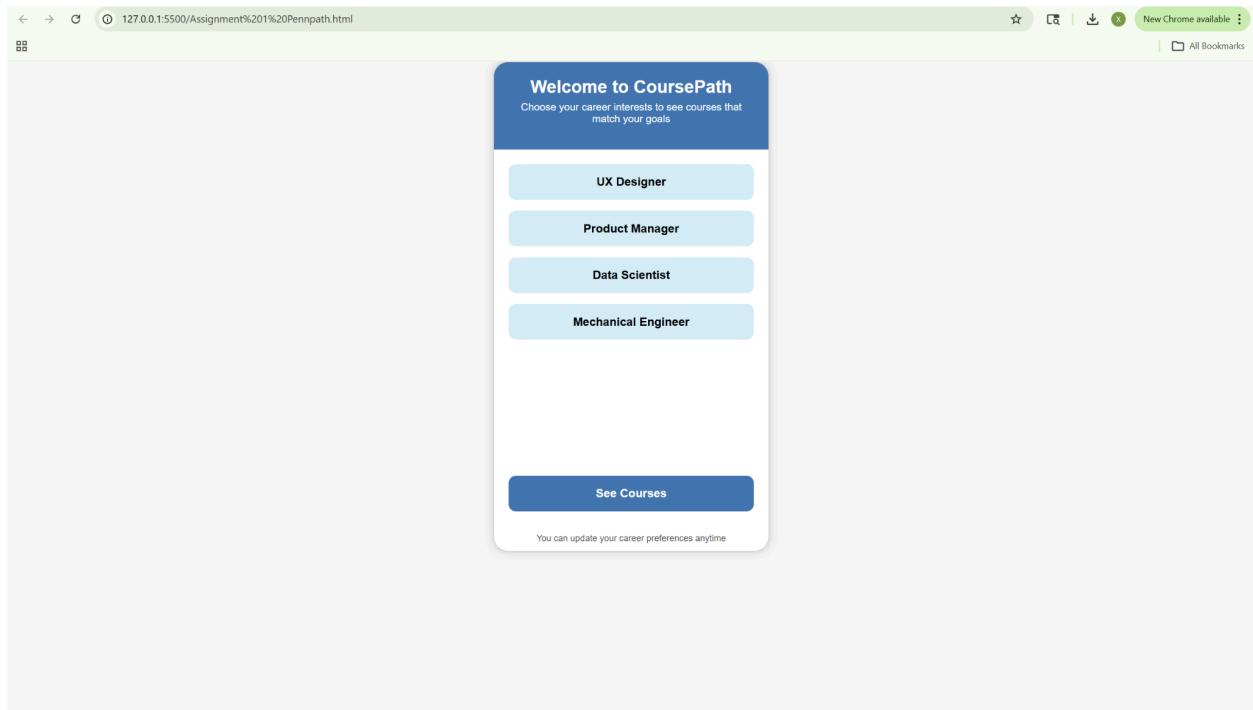


Among the proposed ideas, the career-based course ranking combined with a reservation mechanism has the strongest potential to substantially improve how students make course decisions under uncertainty.

## Stage 4: HTML/CSS Implementation

Parts of the HTML/CSS structure were generated with the assistance of ChatGPT and were manually reviewed and modified by the author.

<http://127.0.0.1:5500/Assignment%201%20Pennpath.html>



<https://github.com/sun666/hci-assignment-1>

```
<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="UTF-8">
<meta name="viewport" content="width=device-width, initial-scale=1.0">
<title>CoursePath - Career Selection</title>
<style>
/* phone screen */
body {
margin: 0;
padding: 0;
font-family: Arial, sans-serif;
background-color: #f5f5f5;
display: flex;
justify-content: center;
}

.phone {
width: 375px;
height: 667px;
```

```
background-color: #ffffff;
border: 1px solid #ccc;
border-radius: 20px;
box-shadow: 0 0 10px rgba(0,0,0,0.2);
display: flex;
flex-direction: column;
overflow: hidden;
}

/* Header */
.header {
padding: 20px;
text-align: center;
background-color: #0077b6; /* accent color */
color: white;
}

.header h1 {
margin: 0;
font-size: 24px;
}

.header p {
margin-top: 5px;
font-size: 14px;
}

/* Career cards container */
.career-container {
padding: 20px;
flex: 1;
display: flex;
flex-direction: column;
gap: 15px;
}

.career-card {
padding: 15px;
background-color: #caf0f8;
border-radius: 10px;
text-align: center;
font-weight: bold;
font-size: 16px;
cursor: pointer;
```

```
        transition: transform 0.2s;
    }

.career-card:hover {
    transform: scale(1.05);
}

/* Next button */
.next-button {
    margin: 20px;
    padding: 15px;
    background-color: #0077b6;
    color: white;
    border: none;
    border-radius: 10px;
    font-size: 16px;
    font-weight: bold;
    cursor: pointer;
    text-align: center;
}

.footer {
    font-size: 12px;
    color: #555;
    text-align: center;
    padding: 10px;
}

</style>
</head>
<body>

<div class="phone">
    <!-- Header -->
    <div class="header">
        <h1>Welcome to CoursePath</h1>
        <p>Choose your career interests to see courses that match your goals</p>
    </div>

    <!-- Career selection cards -->
    <div class="career-container">
        <div class="career-card">UX Designer</div>
        <div class="career-card">Product Manager</div>
        <div class="career-card">Data Scientist</div>
    </div>
</div>
```

```
<div class="career-card">Mechanical Engineer</div>
</div>

<!-- Next button -->
<button class="next-button">See Courses</button>

<!-- Footer -->
<div class="footer">
  You can update your career preferences anytime
</div>
</div>

</body>
</html>
```

index.html  
README.md

Thank you!