



TIMETABLE PLANNER WEBSITE

**Final
Report**

From:
Group 3

PlanMate

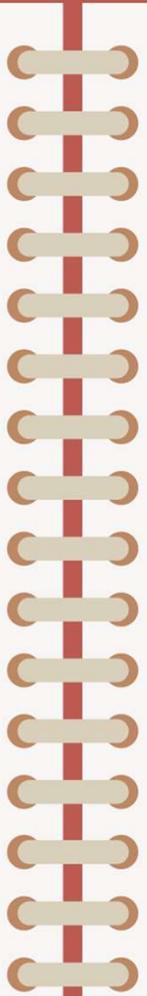
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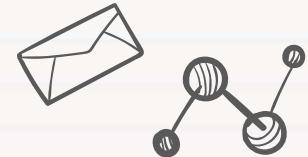
Design Evolution

**Final Prototype
Implementation**



**Reflection and
Next Steps**

**Also Included:
Appendix**





01

Project Introduction



**Nguyen Gia
Bao**



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ET-E16 – K66
UI Designer

**Nguyen Do
Hoang Minh**



20210591
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Web Developer

**Nguyen Huu
Phong**



20210668
ET-E16 – K66
Team Leader

Name, Logo and Slogan

- Name: PlanMate.
- Logo: A pen drawing/writing timetable with initial letters of the app.
- Slogan: "Your best mate in college".

-> Fun, short and easy to remember.
-> Highlight support and companionship for students.

Value
Position



Name, Logo and Slogan

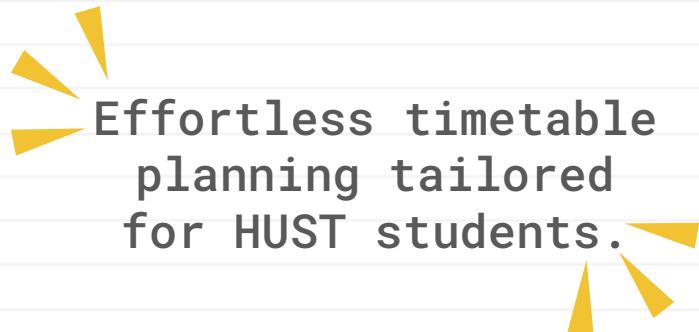


- Name
- Logo
- Colors
- Tagline

-> related to college

-> Highlight support and companionship for students.

Value Proposition





Problem

HUST students face difficulties visualizing their timetables before course registration due to the lack of an official tool.

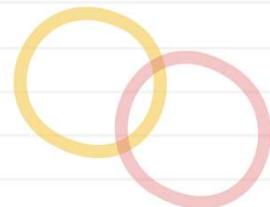
Primary Users

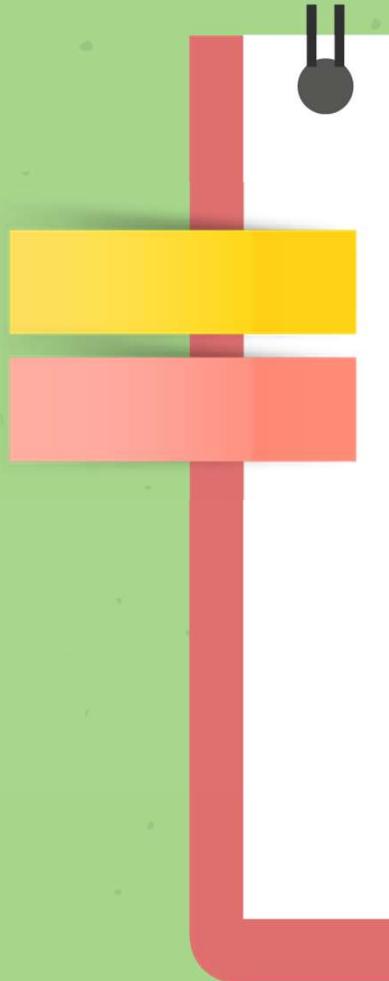
HUST students.



Solution

A user-friendly app that allows students to customize and visualize their timetables quickly, ensuring smooth course registration.





02

Needfinding

Target Participants

- Current HUST students.
- Students from other schools/universities.

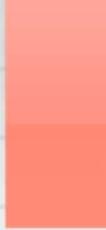
User Groups

- Normal Users (3): Basic tools/methods for scheduling.
- Expert Users (1): Advanced knowledge of the systems.
- Extreme Users (1): Unique/advanced scheduling behaviors.

Interview Method

- HUST students: Offline interviews, face-to-face at school (5-10, max 20 mins).
- Other students: Online interviews (Zoom, Messenger, etc.) (5-10, max 20 mins).





"How do you usually arrange your timetable? (Do you use any tools, like Excel, paper and pen, or websites?)"

"Are there any concerns you have when using these tools?"

"How do you feel when arranging your schedule for a new semester? Do you feel stressed when selecting courses or organizing them?"

"Have you ever needed to share your timetable with friends or professors? If so, do you think sharing your schedule would be a useful feature?"

"What do you think of the interface of the current system? Do you wish it would change in any way?"

Tools/Methods

Questions

User Experience

Feelings and Emotions

Difficulties and Solutions

Customizability and Features



Participants



Minh*

Expert User



Tai, Rose, Son, NMinh

Normal Users



Linh*

Extreme User

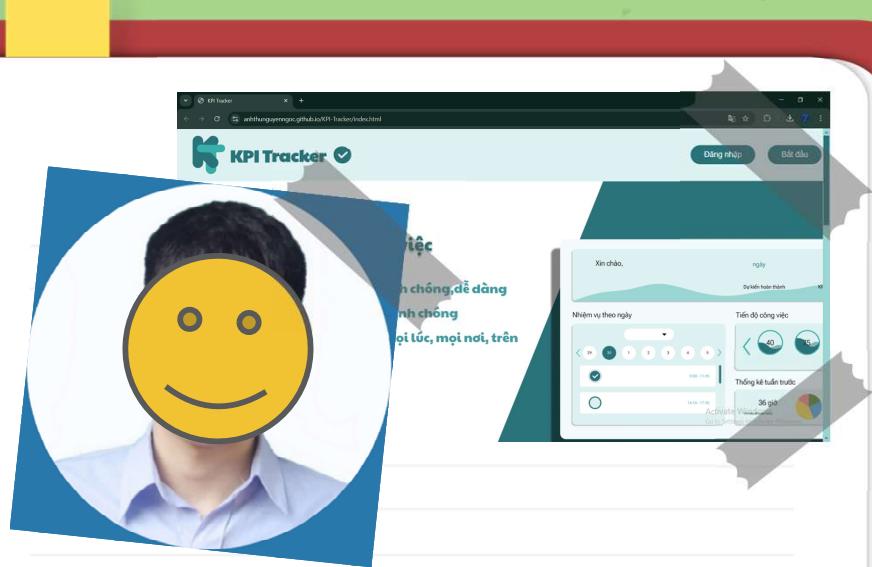
*: pseudonym

"Registering for classes is always a tough competition."

"Organizing a timetable online is really essential because it's more convenient than traditional methods."

"Different sessions of the same class are shown as if they are different classes."

"Both front-end and back-end optimizations are important."

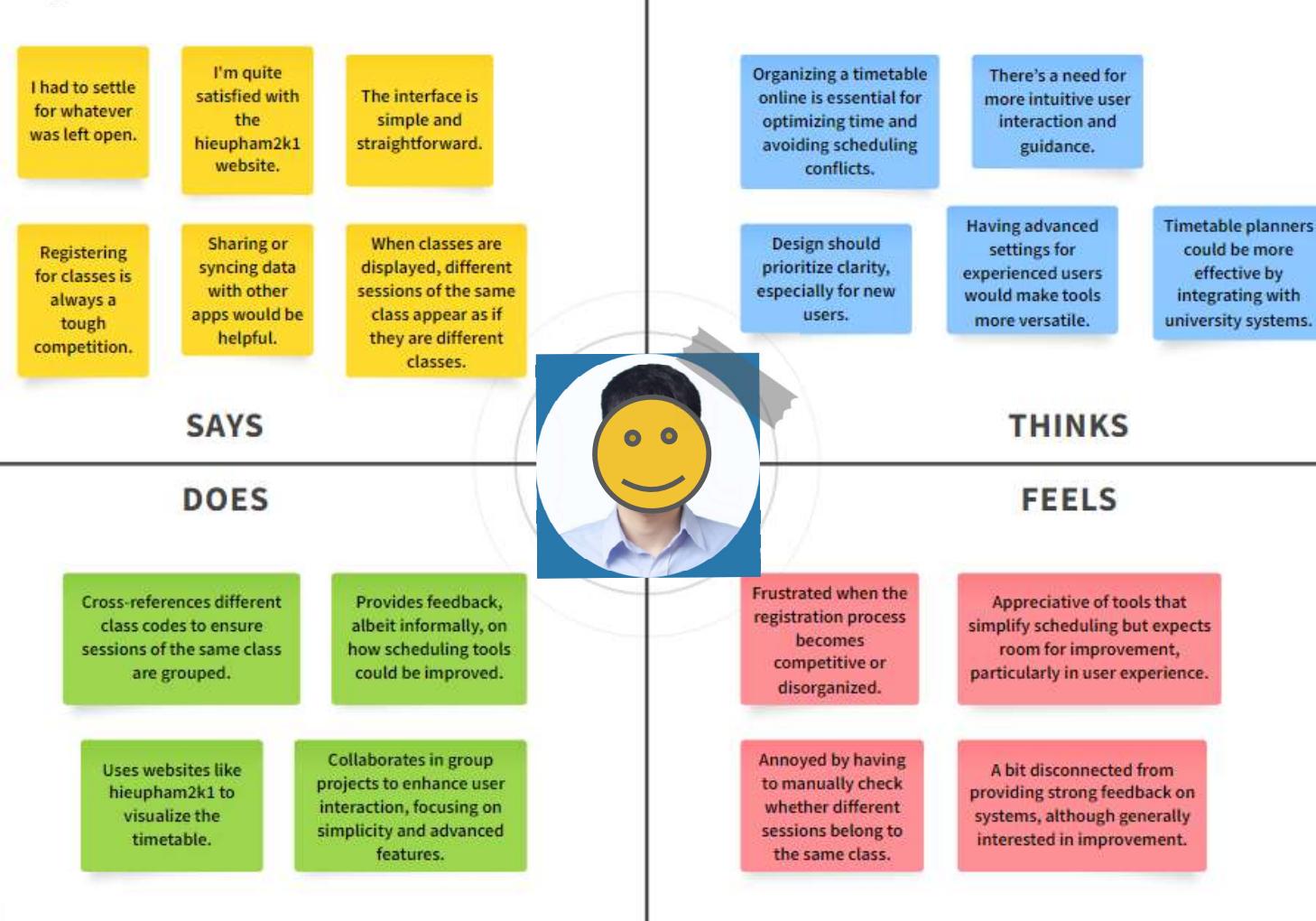


Minh* (20)

- 4th year student from SOICT, HUST
- Expert User (has experience in planner web development)
- Offline Interview



Empathy Map Using Timetable Planner Tools



Minh*

Needs

- **Efficient Scheduling:** Quick, clear course management.
- **Data Integration:** Sync with university systems to avoid conflicts.
- **Simple Interface:** Easy to use, with advanced options for experts.
- **Customization:** Instructor filters, sync with external apps.

Insights

- **Automation is Key:** Syncing saves time and reduces errors.
- **Visual Clarity:** Unified views prevent confusion.
- **Balance:** Users want simplicity with flexible, advanced features.

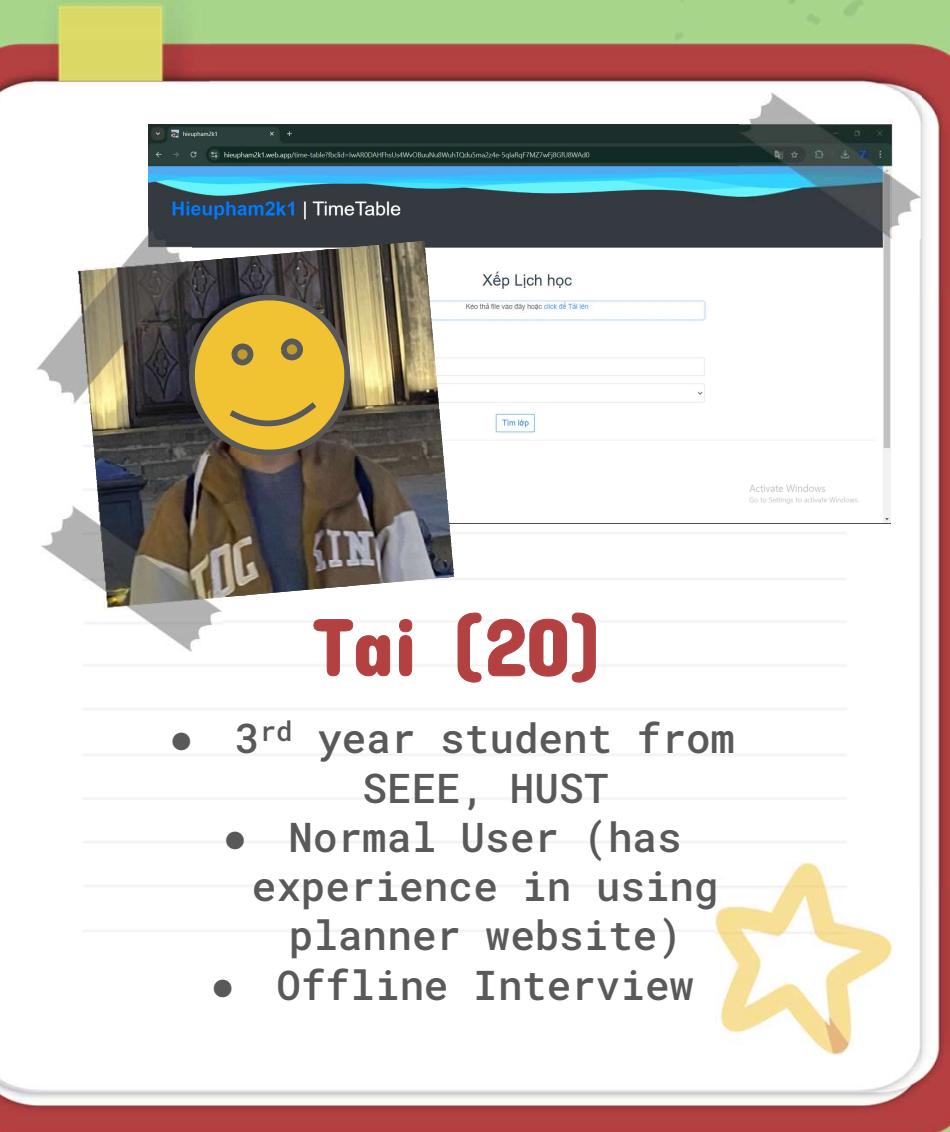


"I find online tools for scheduling timetables very useful... They save me a lot of time compared to traditional methods."

"I don't usually feel stressed when setting up my timetable for a new semester."

"Yes, I've already introduced the website to some friends for course registration."

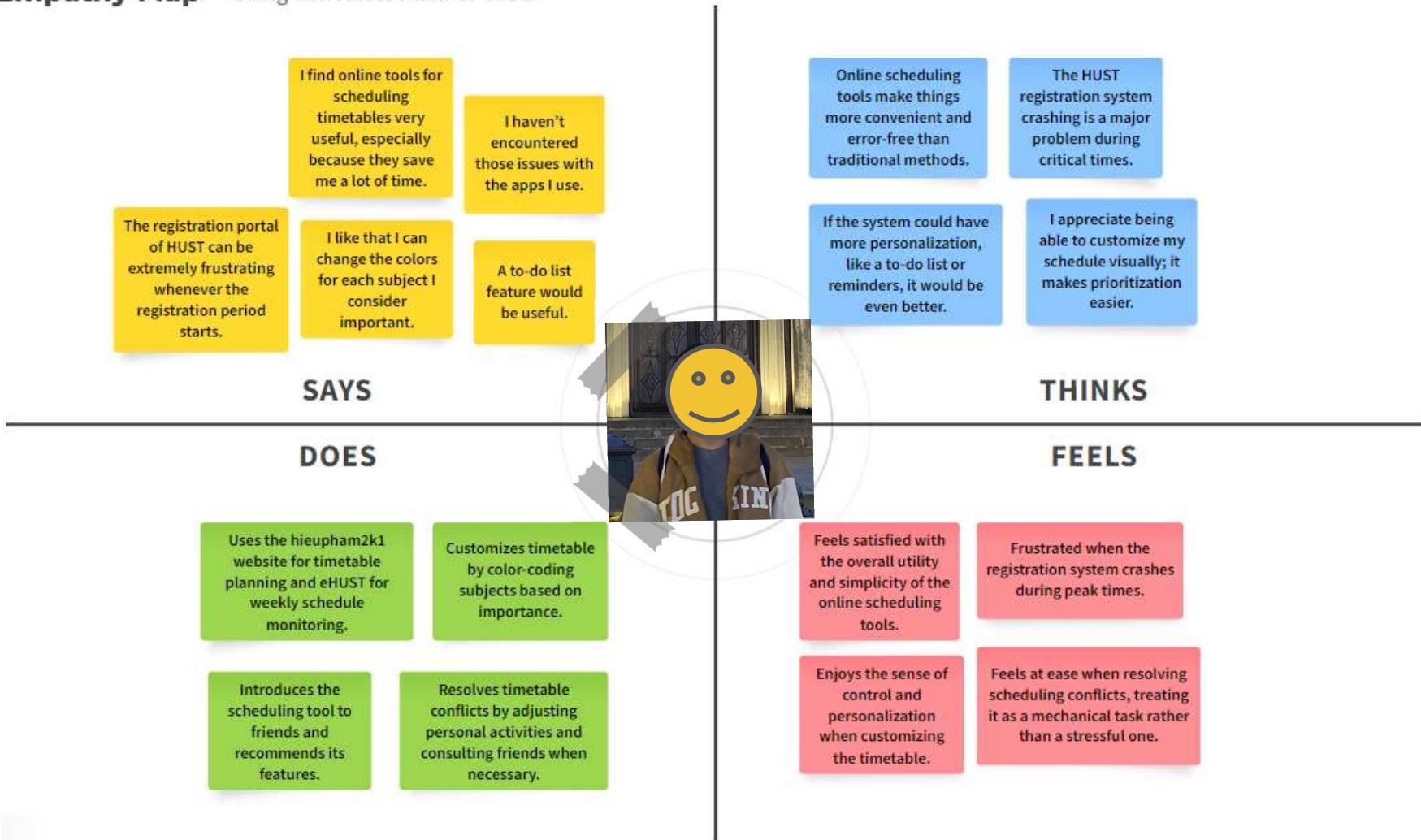
"I think everyone's schedule is private and personal."



Tai (20)

- 3rd year student from SEEE, HUST
- Normal User (has experience in using planner website)
- Offline Interview

Empathy Map Using Timetable Planner Tools



Tai

Needs

- **Stability:** Reliable, crash-free system, especially during registration.
- **Customization:** Personalize with colors and reminders.
- **Efficient Organization:** Easy, clear scheduling without overlaps.
- **Simple Interface:** Intuitive and easy to use, with helpful features.



Insights

- **Convenience:** Online tools save time and effort.
- **Reliability:** Stable performance is critical during registration.
- **Personalization:** Custom options enhance control and satisfaction.
- **Low Stress:** Users prefer simple, efficient tools, with extras as bonuses.



"I would definitely tell anyone that it's a solid tool if they were to ask."

"Every enrollment period feels like a battle... there's a lot of pressure to make sure you get into the classes you need."

"The scheduling tool automatically prevents you from enrolling in classes that overlap."

"It's useful when I need to send my schedule to my job... having a built-in feature to share would be really helpful."

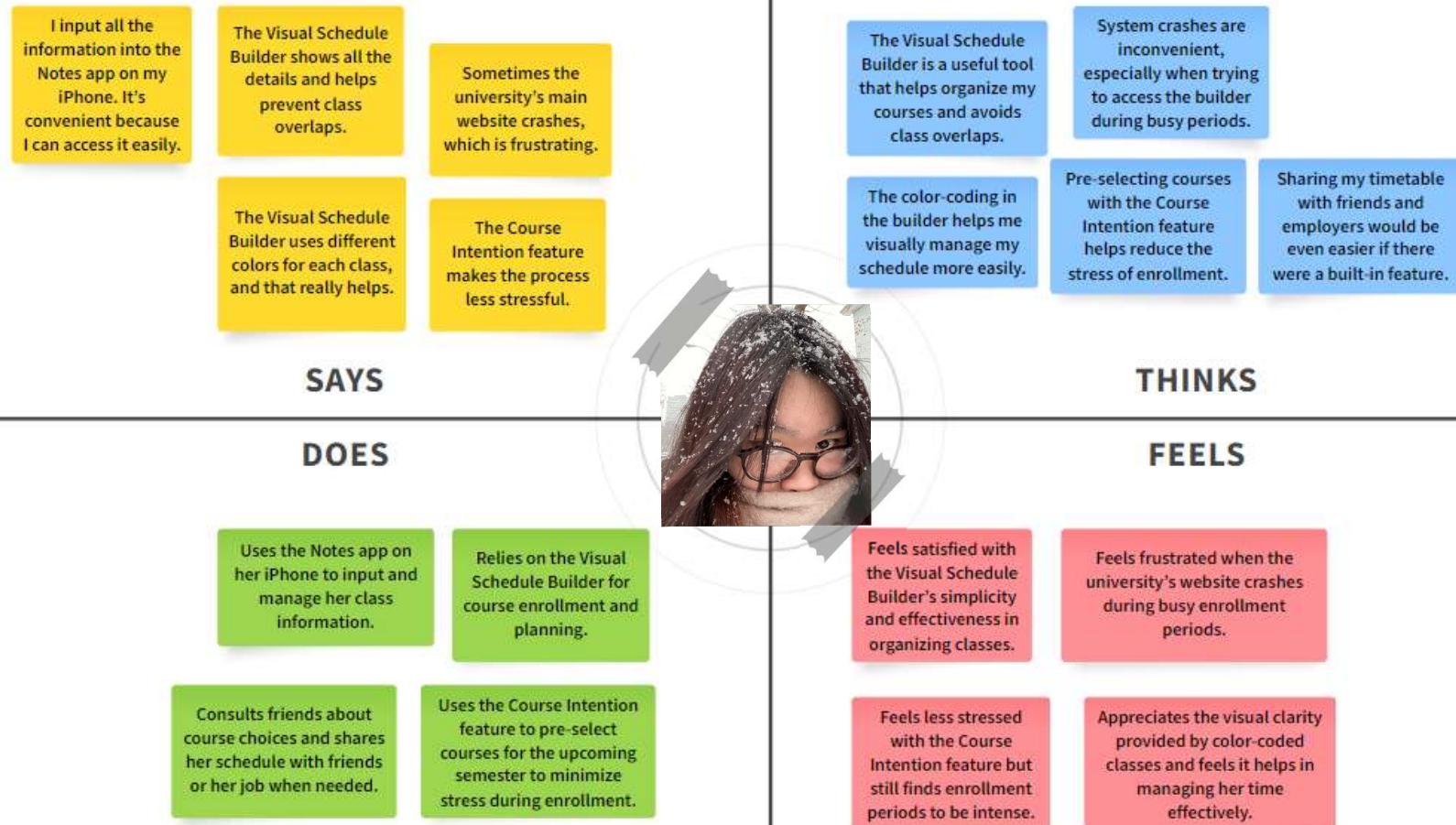


Rose (21)

- Student from Toronto Metropolitan University in Ontario, Canada
- Normal User (has experience in using Notes on iPhone + Visual Schedule Builder)
- Online Interview



Empathy Map Using Timetable Planner Tools



Rose

Needs

- **Reliability:** Stable site during enrollment.
- **Customization:** Simple tools with color-coding and clear layout.
- **Stress Relief:** Pre-select courses to reduce anxiety.
- **Sharing:** Easy schedule sharing for planning.



Insights

- **Simplicity:** Straightforward tools prevent conflicts.
- **Efficiency:** Crashes during peak times cause frustration.
- **Visual Clarity:** Color-coding boosts usability.
- **Sharing:** Customizable sharing options needed.

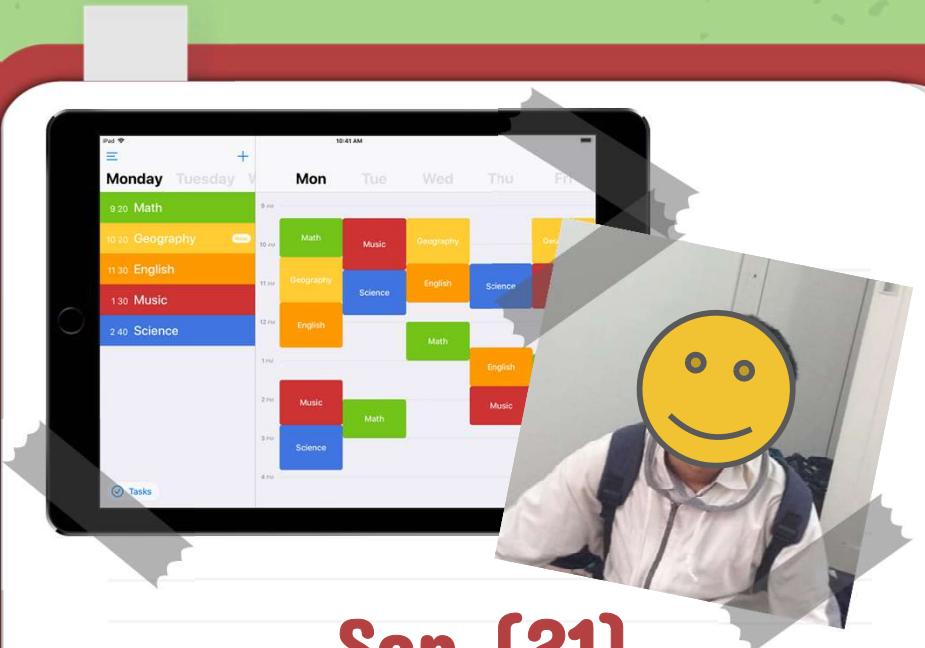


"Online tools are really useful... they simplify the process of organizing everything in one place."

"Organizing my schedule isn't really a stressful process."

"I really appreciate the app's speed and the overall smooth experience."

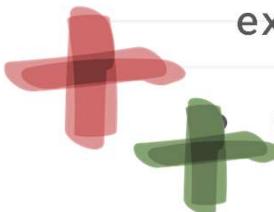
"I'm satisfied with the current interface... but I'd probably want more customization options."



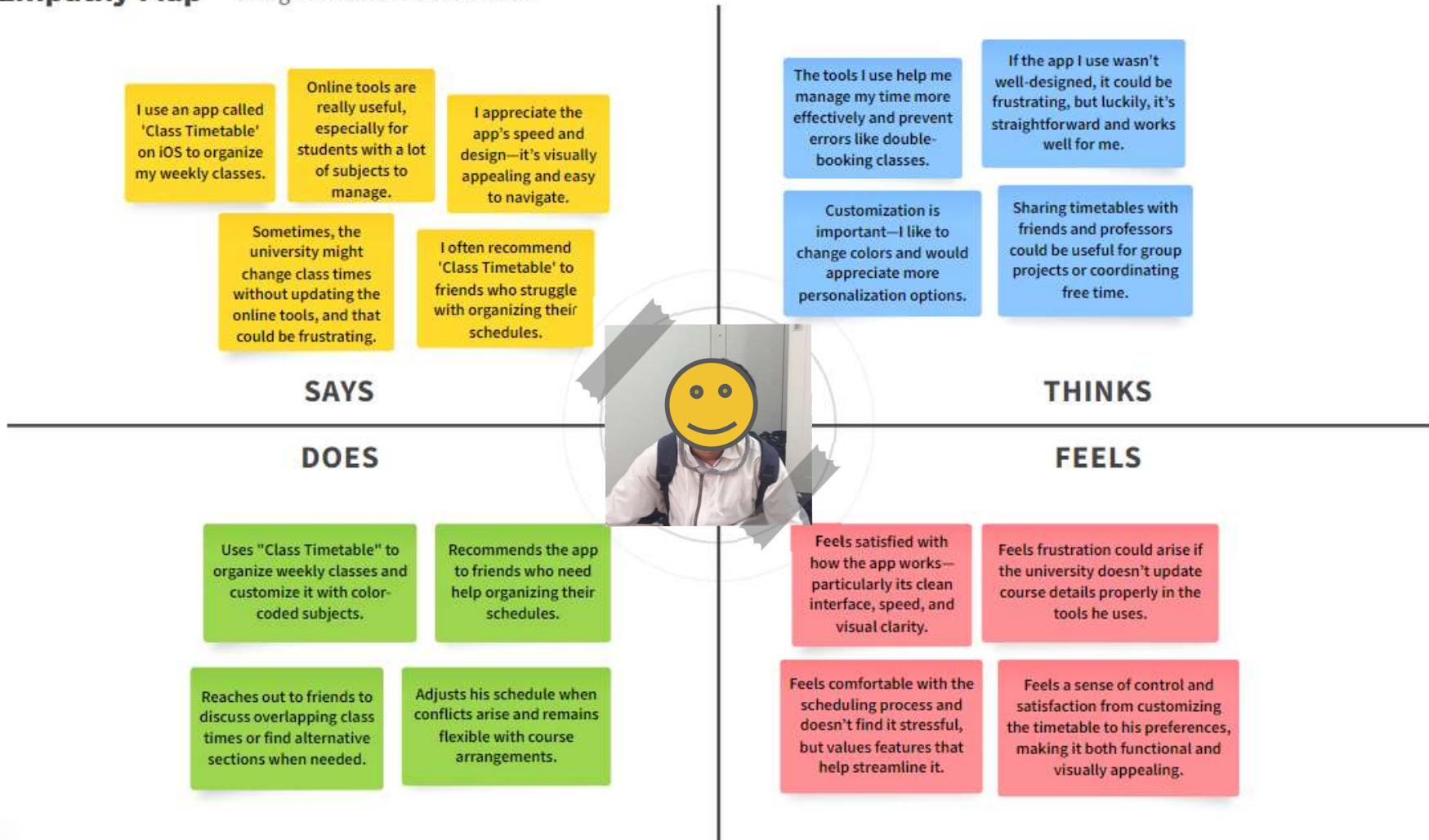
Son (21)

- 4th year student from HNUE
- Normal User (has experience in using planner app)

Online Interview



Empathy Map Using Timetable Planner Tools



Son

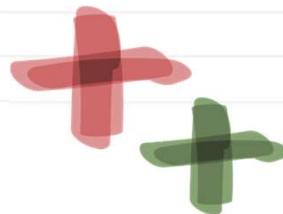
Needs

- **Reliable Updates:** Timely info on class changes.
- **Customization:** Personalize timetables (colors, layouts).
- **Sharing Tools:** Easy sharing with peers and professors.
- **Error Prevention:** Avoid scheduling conflicts, flexible adjustments.



Insights

- **User-Friendly:** Simple, fast tools ease organization.
- **Engagement Through Customization:** Color-coding aids usability; more options would boost engagement.
- **Critical Consistency:** Reliable university info is essential.
- **Future Sharing Needs:** Easy sharing features benefit group coordination.



"I find it pretty easy... the website has made the process straightforward and quick."

"The university's official system... has quite a few issues with the layout."

"I don't usually have any issues with scheduling, thanks to the website I use."

"I don't feel the need to customize my timetable."

Hieupham2k1 | TimeTable

Thời khóa biểu dự kiến

Tải file Excel TKB tại đây

Tên hoặc Mã HP

CT CHI TIẾT

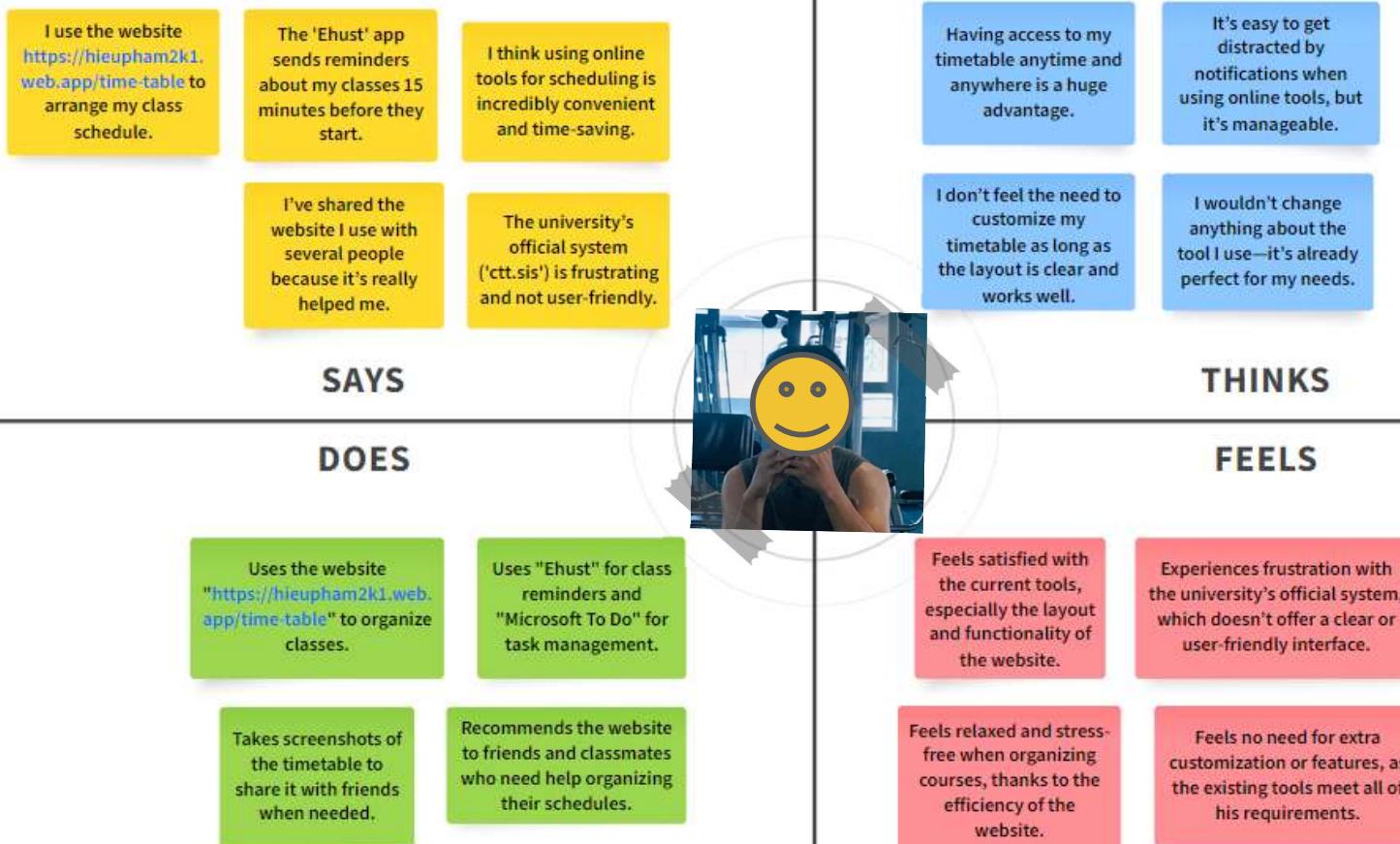
e
HUST

NMinh (21)

- 4th year student from SEEE, HUST
 - Normal User (has experience in using planner website + apps)
 - Online Interview

✓

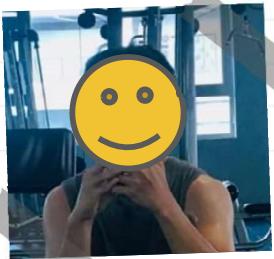
Empathy Map Using Timetable Planner Tools



NMinh

Needs

- **Easy Access:** Simple, clear, and mobile-friendly tools.
- **Timely Reminders:** Notifications to track schedules.
- **Conflict Prevention:** Tools to avoid overlaps and show complete schedules.
- **Sharing Options:** Easy sharing features for collaboration.



Insights

- **Prefer Simplicity:** Functionality over customization.
- **Convenient Access:** Mobile access reduces stress.
- **Frustration with University Tools:** Third-party apps are often better.
- **Collaboration Needs:** Sharing features are beneficial for group work.



"I haven't come across any specific applications yet, so I don't have any personal impressions about them."

"The thought of automating that process sounds incredibly appealing."

"I worry that it might be more complicated than I expect and that I might encounter a learning curve."

"I'm drawn to visually appealing designs... a cute and attractive interface would motivate me."



Linh* (18)

- 1st year student from RMIT, Hanoi
- Extreme User (manually plans timetable with helps from Notes on iPhone)
- Offline Interview

Empathy Map Using Timetable Planner Tools

I typically organize my timetable by writing down tasks and categorizing them based on urgency.

I use the Notes app on my phone because it's convenient.

I haven't come across any specific timetable apps yet, so I haven't used one.

I haven't explored apps for timetable organization, but if I find one that suits my style, I'd consider it.

If an app could automate organizing my timetable, I'd definitely find that useful!

SAYS

DOES

Uses the Notes app to manually organize her timetable and color-codes notes for clarity.

Plans her weekly schedule in advance, prioritizes tasks, and adjusts as needed.

Occasionally considers switching to an app but has not yet researched any options.

Remains open to exploring new methods of scheduling but sticks to familiar tools for now.



I like my manual method because it's comfortable and familiar, but using an app could be more efficient.

I haven't had major problems like class overlaps, but automating would save me time.

Transitioning to an app might have a learning curve, and I don't want to be overly dependent on it.

Having a visually appealing, customizable app would motivate me to use it more consistently.

THINKS

FEELS

Comfortable and in control with her current method of manual organization.

Slightly hesitant about trying new apps due to concerns about complexity or dependency.

Intrigued by the potential of automating schedule management and how it could save time.

Excited by the idea of a customizable, visually appealing app that could offer more efficiency and convenience.

Linh*

Needs

- **Familiar Tool:** Wants an intuitive app that feels familiar.
- **Automated Efficiency:** Seeks automation while keeping control.
- **Customizable Options:** Values personalization for engagement.
- **Control Assurance:** Prefers to avoid dependency on technology.



Insights

- **Open to Digital:** Will switch if it suits habits.
- **Customization Matters:** Needs visual appeal to stay engaged.
- **Efficiency with Control:** Wants to save time but maintain oversight.
- **Skeptical but Open:** Interested in free apps with clear benefits.



Tensions and Contradictions

Simplicity vs. Customization

Need for straightforward tools vs. desire for personalization; extremes feel overwhelmed, normals feel restricted.



Technological Hesitance vs. Digital Acceptance

Demand for reliable systems during peak times vs. need for flexible schedule management; crashes cause frustration.



Reliability vs. Flexibility

Extreme users are skeptical; normals and experts embrace technology.



Surprises

Simplicity vs. Customization

Normals prefer third-party tools, highlighting gaps in university offerings.



Importance of Visual Design

Visual appeal boosts usability and engagement more than expected.



Summary



Common Needs

Users want simplicity, reliability, and collaboration.

Key Tensions

Balancing simplicity with customization and ensuring reliability without sacrificing flexibility.

Development Insight

Address diverse user preferences while tackling shared challenges in scheduling.



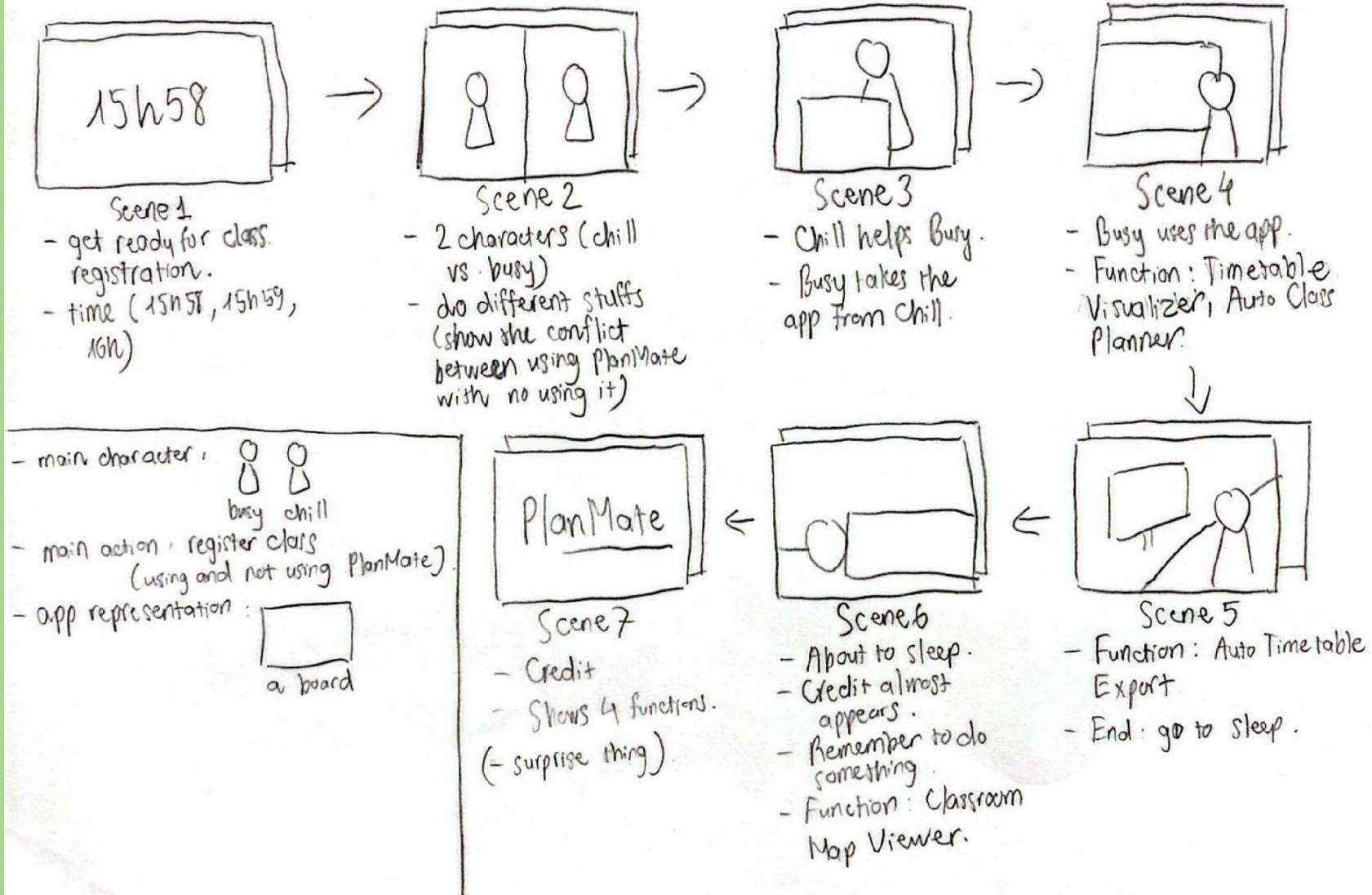
Please
remember
before going
to the next
step! ☺



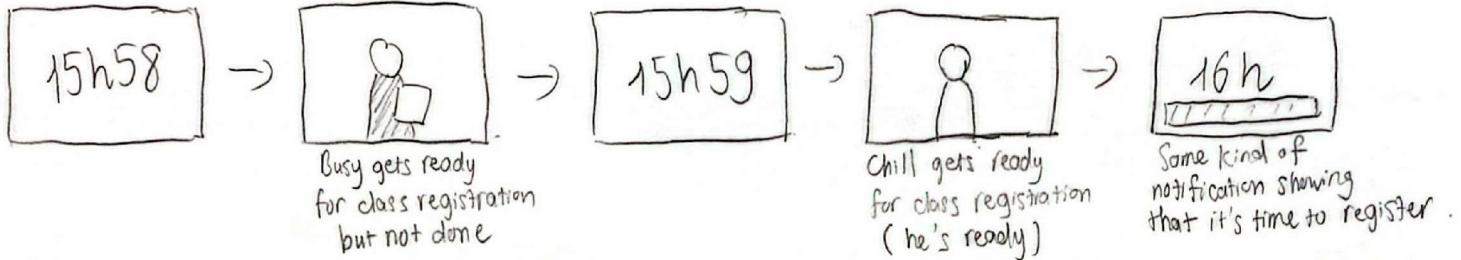
03

Concept Video

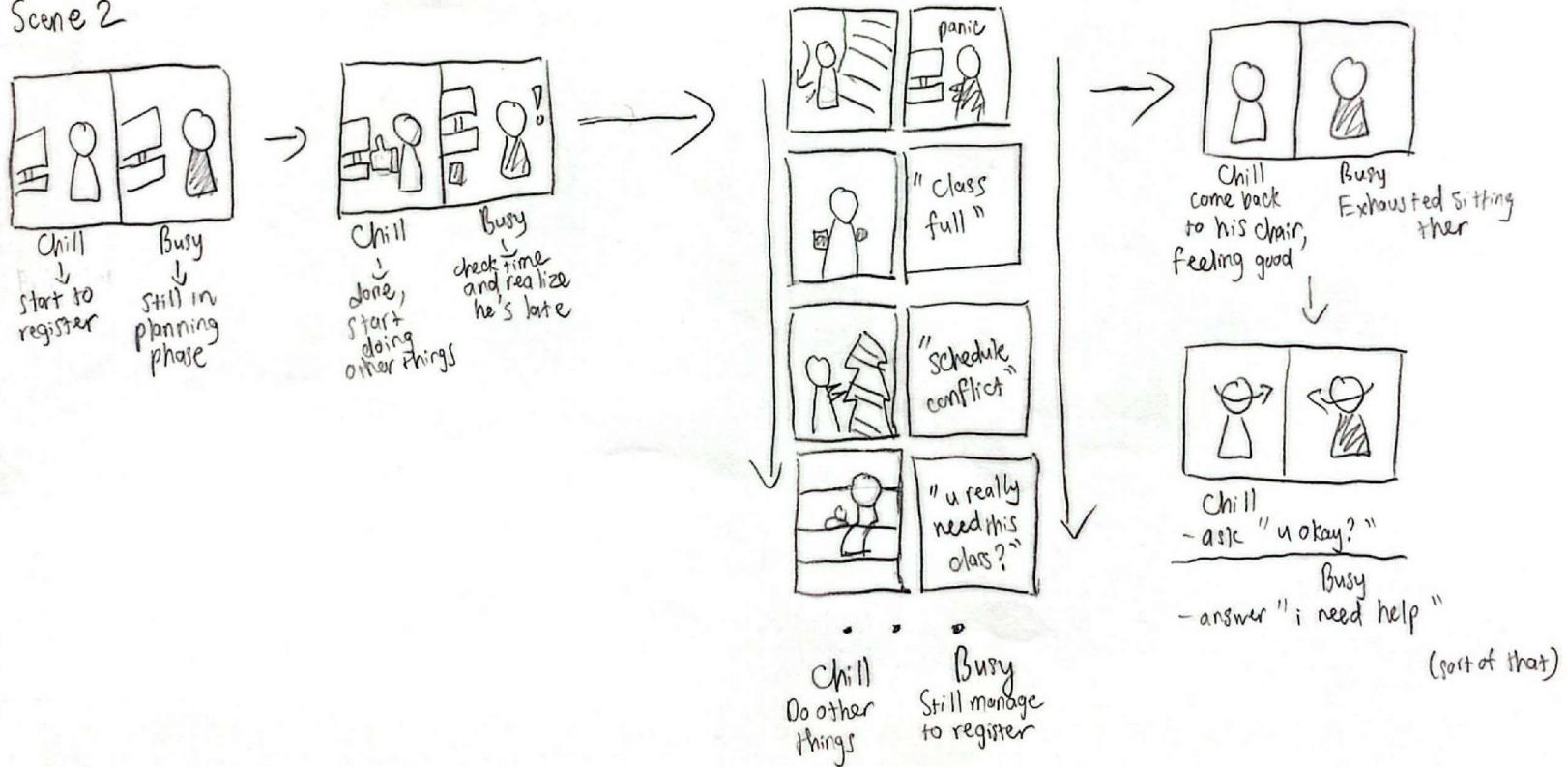
PlanMate concept video ideas / story board



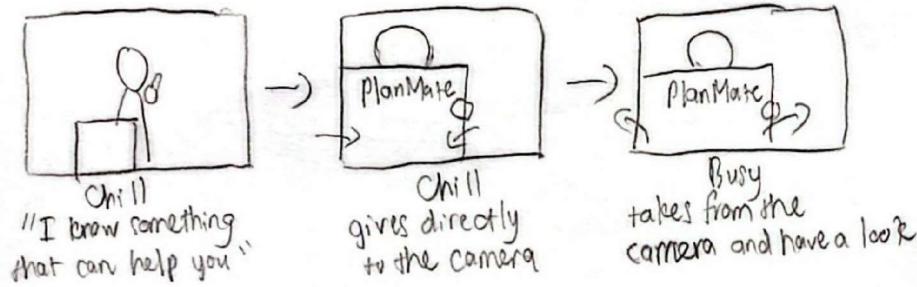
Scene 1



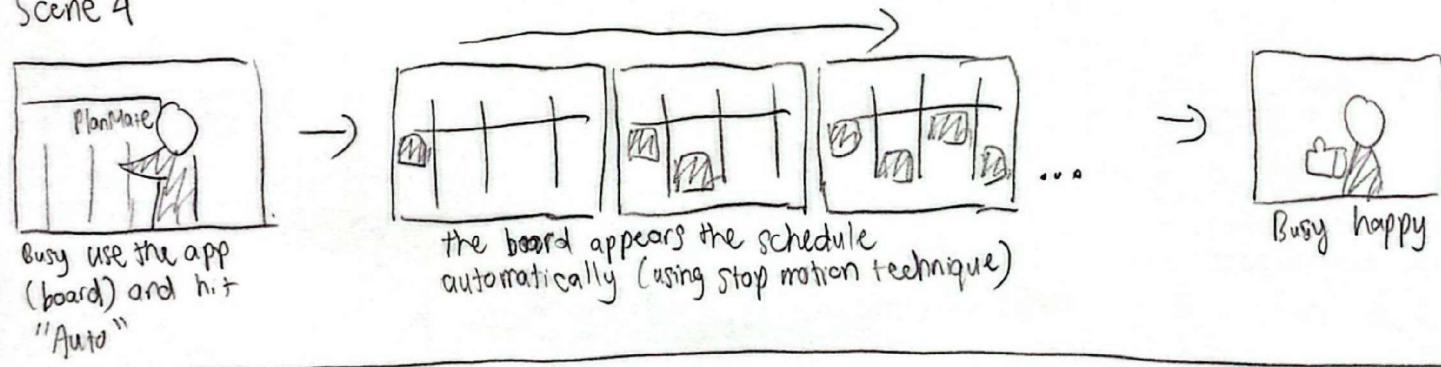
Scene 2



Scene 5



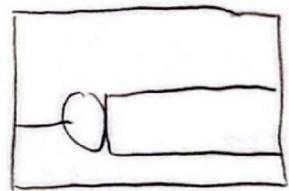
Scene 4



Scene 5



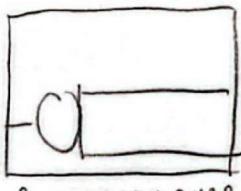
Scene 6



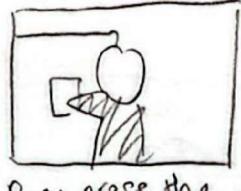
Busy close eyes



Credit almost appear but then disappear



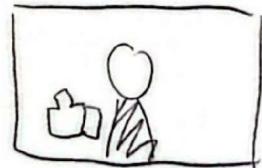
busy open eyes
and thought "wait
but where are the
classes?"



busy press the
"Location" button

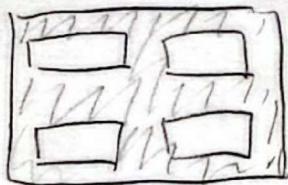


map appear



busy happy

Scene 7



Scene black out
and 4 function
appear



name and slogan
(with voiceover)



surprise thing
(with voice over)

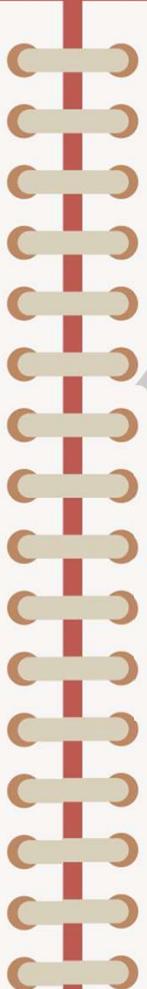
Overall Ideas

Characters



Chill Guy
(Using PlanMate)

Busy Guy
(Not using PlanMate)



Split Screens

Emphasize conflict between two sides.



4 Functions Demonstration

- Timetable Visualizer.
- Auto Class Planner.
- Auto Timetable Export.
- Classroom Map Viewer.



04

Design Evolution

Stakeholders

- **Direct**

- HUST students.
- System Developers.
- School/University.

- **Indirect**

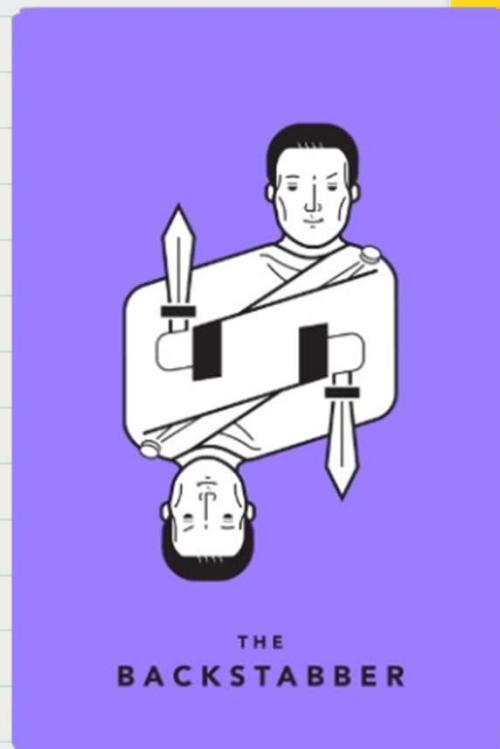
- Parents of Students.
- Competitors (Other Scheduling Apps).
- Student Clubs/Communities.



Ethical Implications



Ethical Implications



Ethical Implications



Ethical Implications

THE BFFs

◆
If two friends use your product, how could it enhance or detract from their relationship?

How does your product change or create new ways for people to interact?

Does your product fill or change a role previously filled by a person?



Ethical Implications

- Enhances friendships by enabling trusted schedule sharing, making it easier to coordinate study or social activities.
- Creates a new way to interact by automating timetable alignment, reducing the need for manual discussions.
- Could detract if privacy concerns arise or the feature is misused.

THE BFFs

If two friends use your product, how could it enhance or detract from their relationship?

How does your product change or create new ways for people to interact?

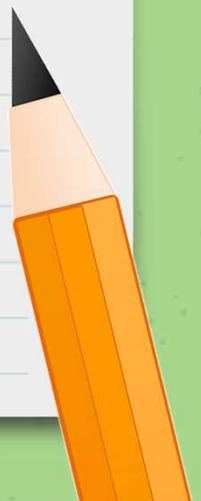
Does your product fill or change a role previously filled by a person?



Ethical Implications



THE
BACKSTABBER



Ethical Implications

THE BACKSTABBER



What could cause people to lose trust in your product?

What could make people feel unsafe or exposed?

What mechanisms are in place for listening to your users?

How will you recognize larger patterns in feedback so that action can be taken?



THE BFFs

Two friends use your product, how could it detract from your product?



Ethical Implications

- Trust issues could arise from data breaches or unauthorized schedule access.
- Users may feel unsafe if schedules are accidentally shared or data handling lacks transparency.
- Collect feedback via in-app surveys and dedicated support channels.
- Analyze feedback trends to identify and prioritize common concerns for updates.



THE BACKSTABBER

◆ What could cause people to lose trust in your product?

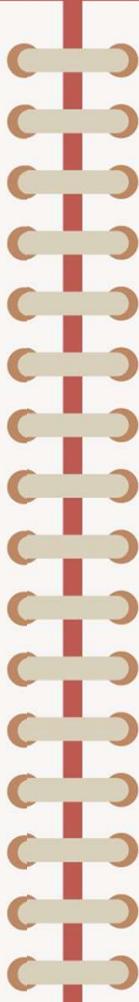
What could make people feel unsafe or exposed?

What mechanisms are in place for listening to your users?

How will you recognize larger patterns in feedback so that action can be taken?



3 Task Flows



Simple Task

Export the personalized timetable to a PDF

Moderate Task

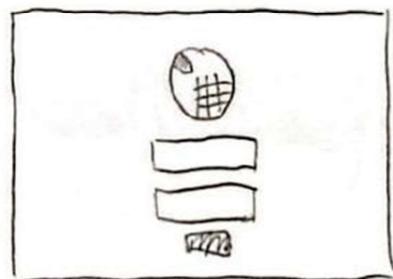
View the campus map with class locations

Complex Task

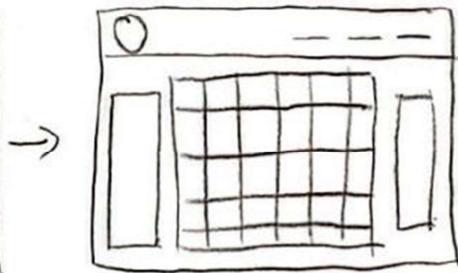
Automatically generate and view a personalized timetable

Concept 1: Website/PC App

Website / PC app



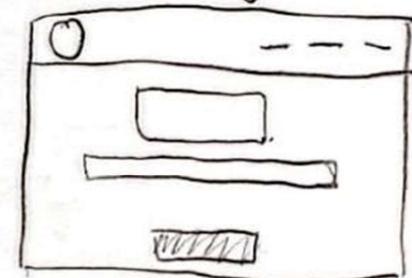
Log in



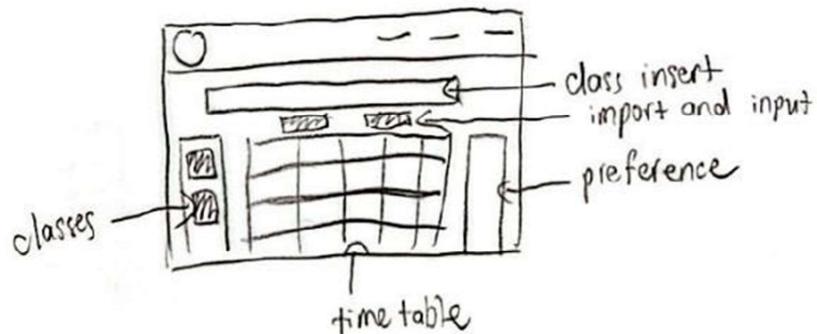
Timetable scheduling
page



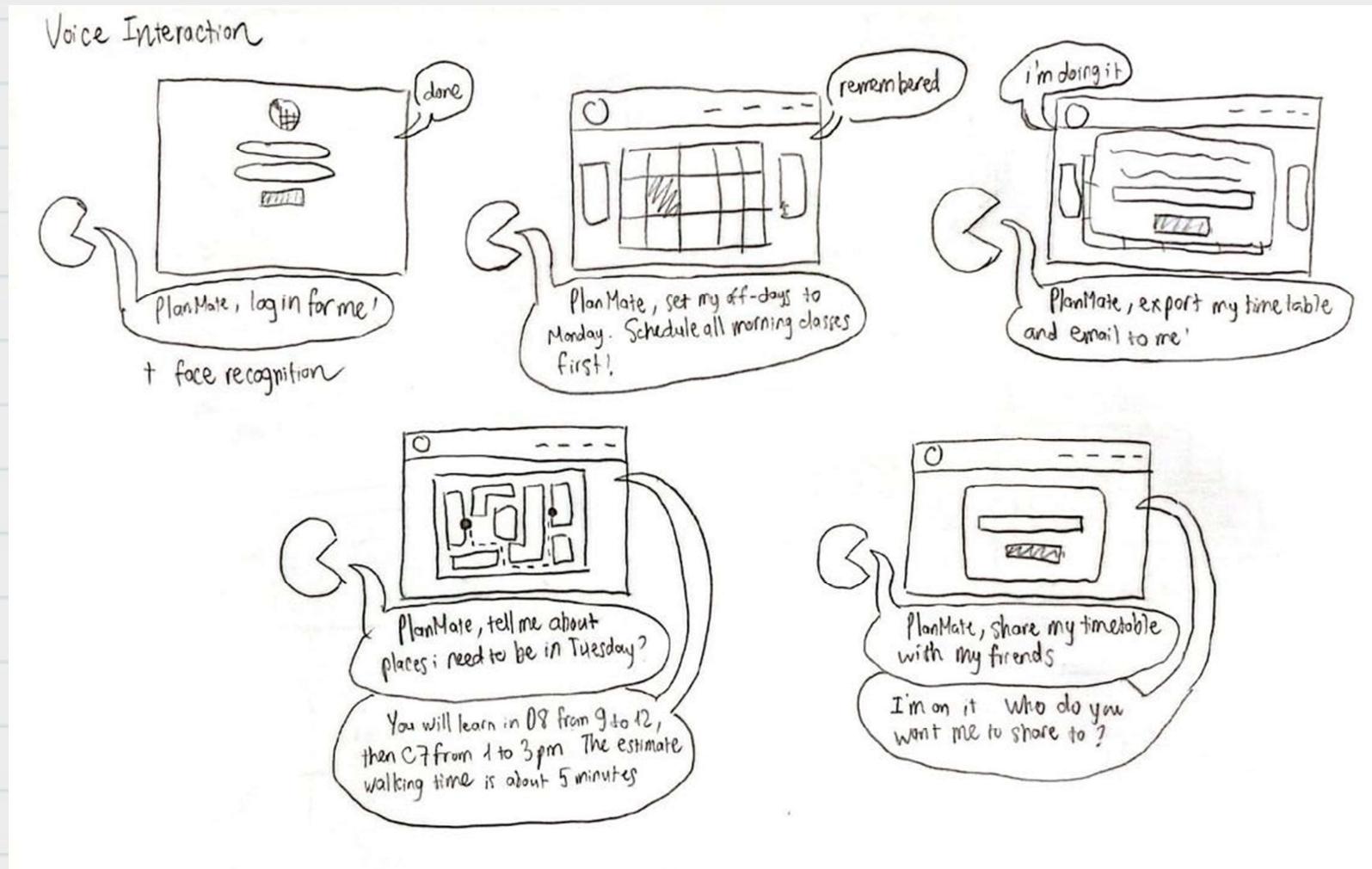
School map page



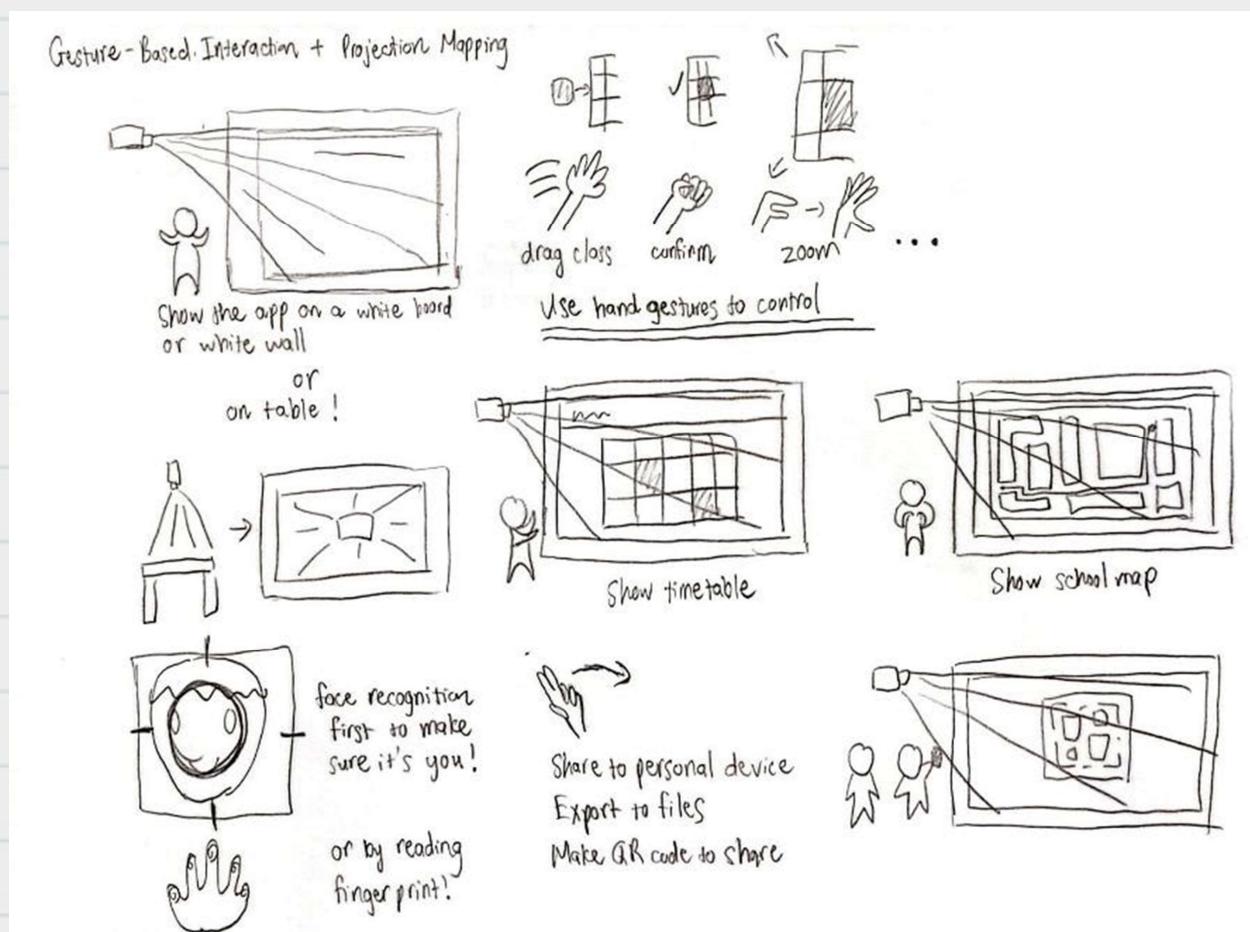
Friend sharing page



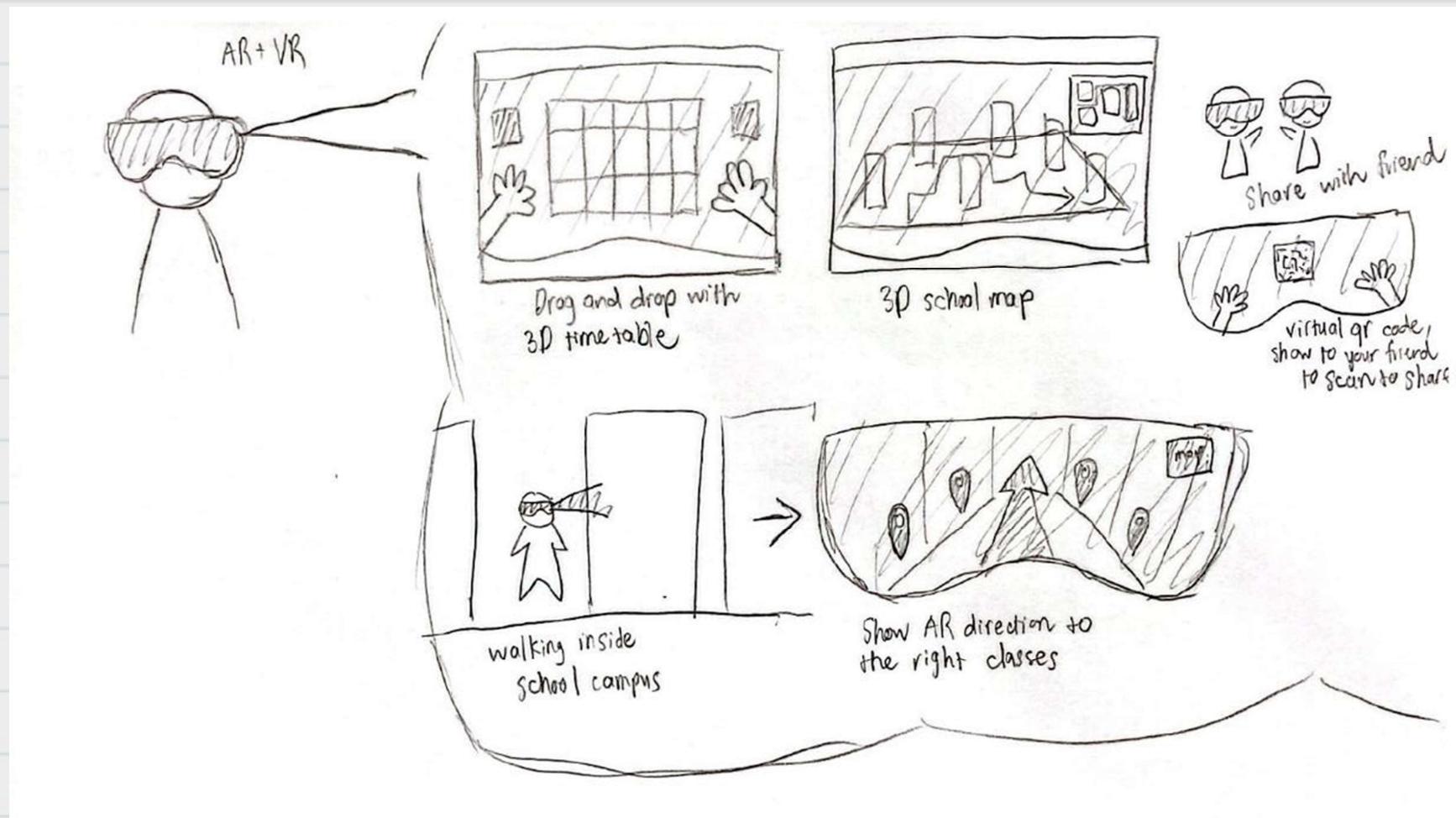
Concept 2: Voice Interaction



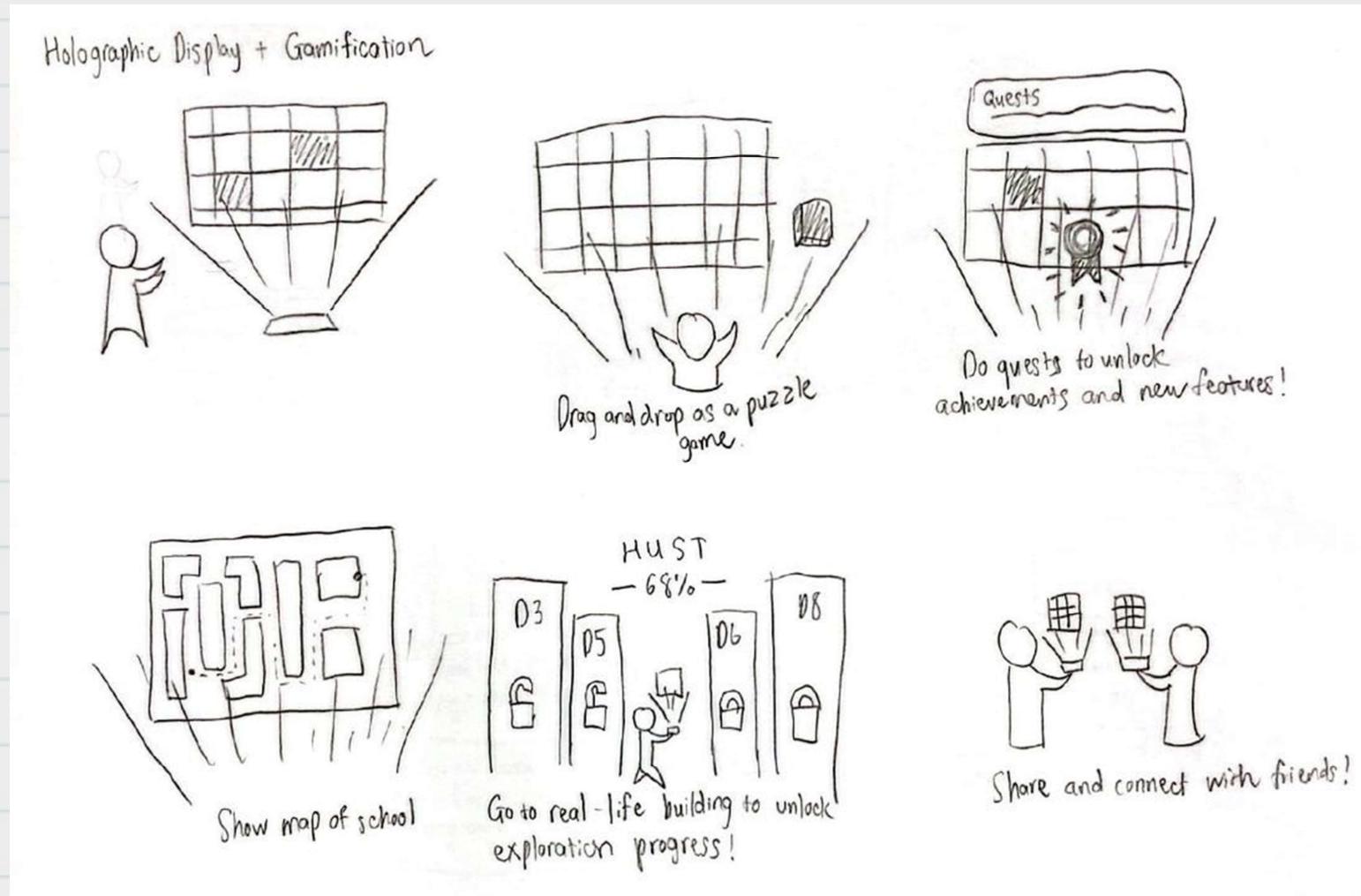
Concept 3: Gesture-Based Interaction + Projection Mapping



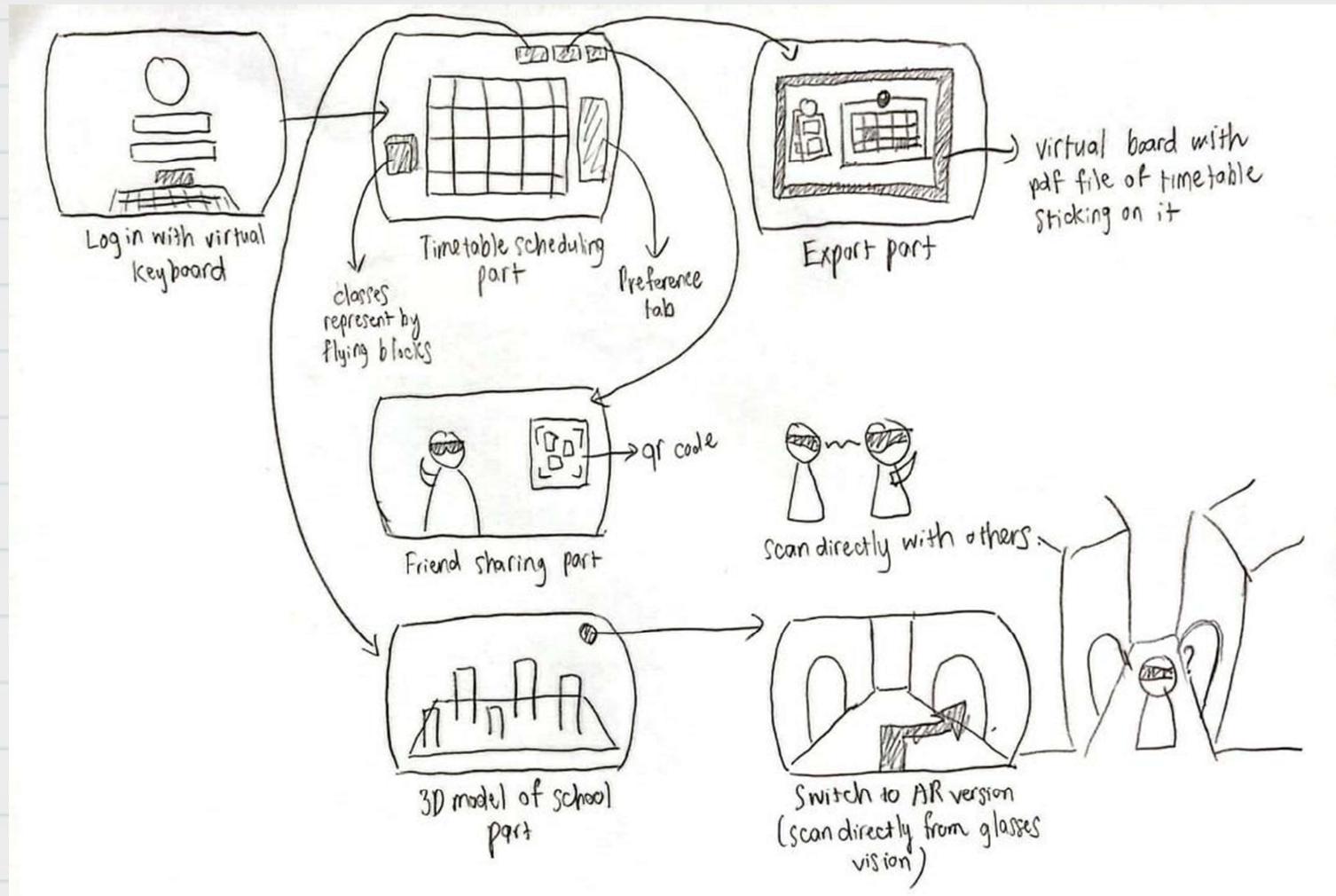
Concept 4: AR + VR Walkthrough



Concept 5: Hologram Display + Gamification



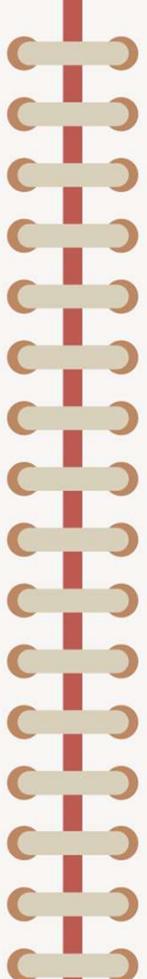
AR + VR Walkthrough



Pros

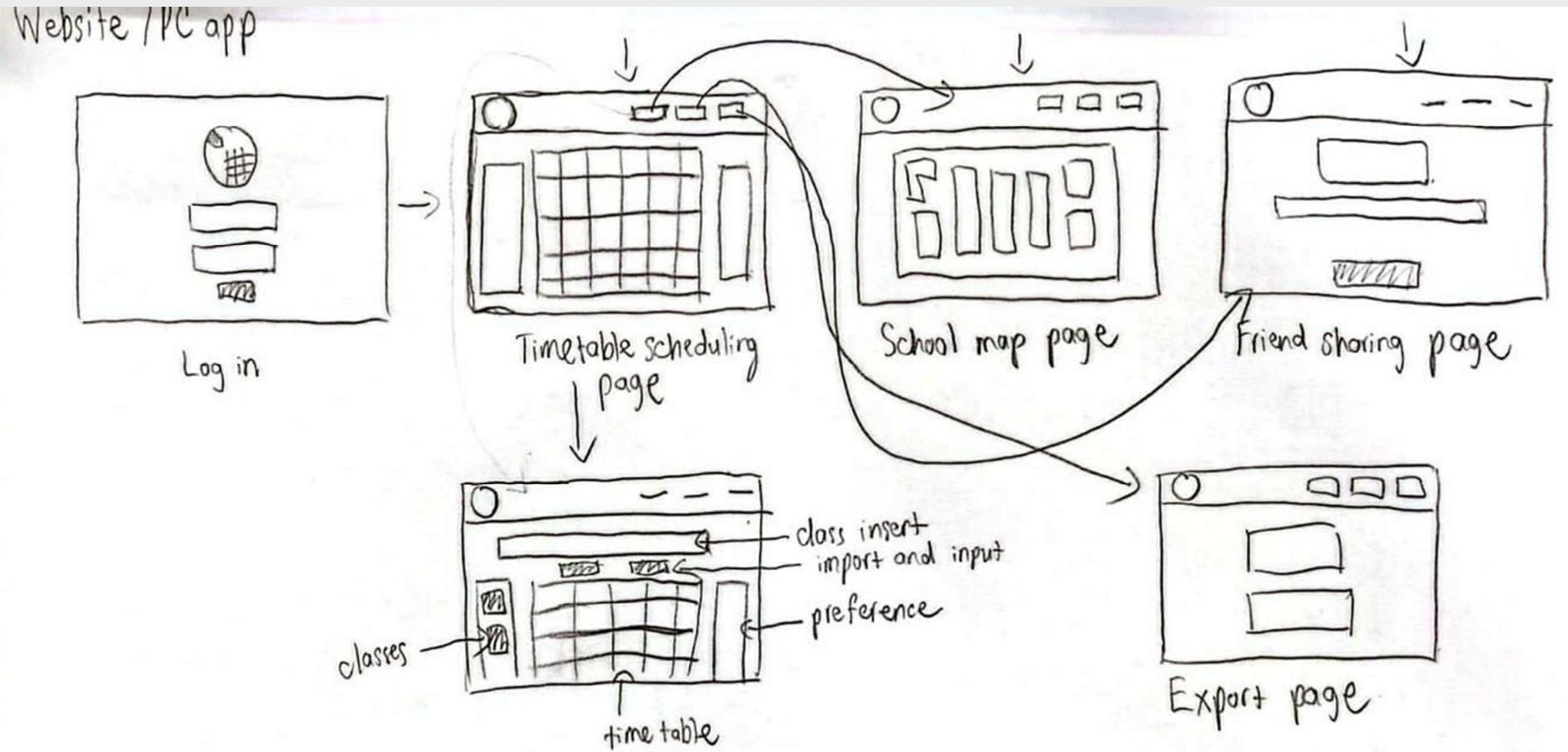


- **Immersive Experience:** Enhances user engagement through interactive 3D visuals.
- **Intuitive Navigation:** Helps students explore and plan using spatial interactions.
- **Innovative Appeal:** Attracts tech-savvy users with cutting-edge features.



- **High Barriers to Access:** Requires AR/VR-capable devices, limiting adoption.
- **Costly Development:** Significant investment in hardware and 3D design.
- **Complex for New Users:** Non-tech-savvy students may face challenges.

Website/PC App



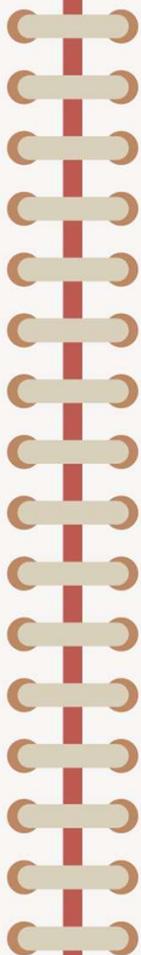
Pros



- **Wide Accessibility:** Works on any browser or device, no extra hardware needed.
- **User-Friendly Design:** Familiar interface ensures ease of use for all students.
- **Cost-Effective:** Lower development and maintenance expenses.



Cons

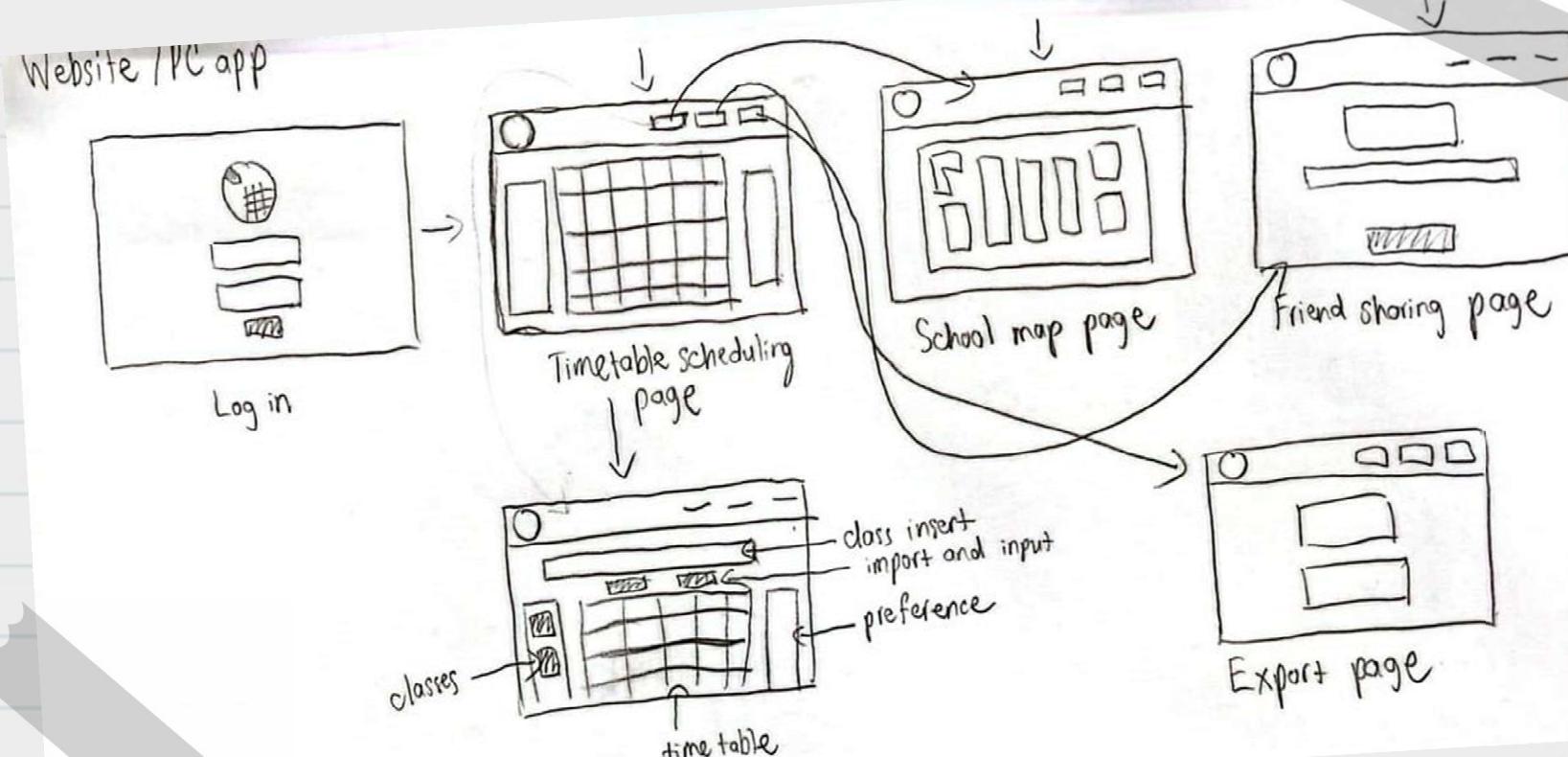


- **Lacks Immersion:** Provides a functional but less engaging experience.
- **Risk of Overcrowding:** Overloaded screens may confuse some users.
- **Limited Interactivity:** Offers fewer innovative features compared to AR/VR.

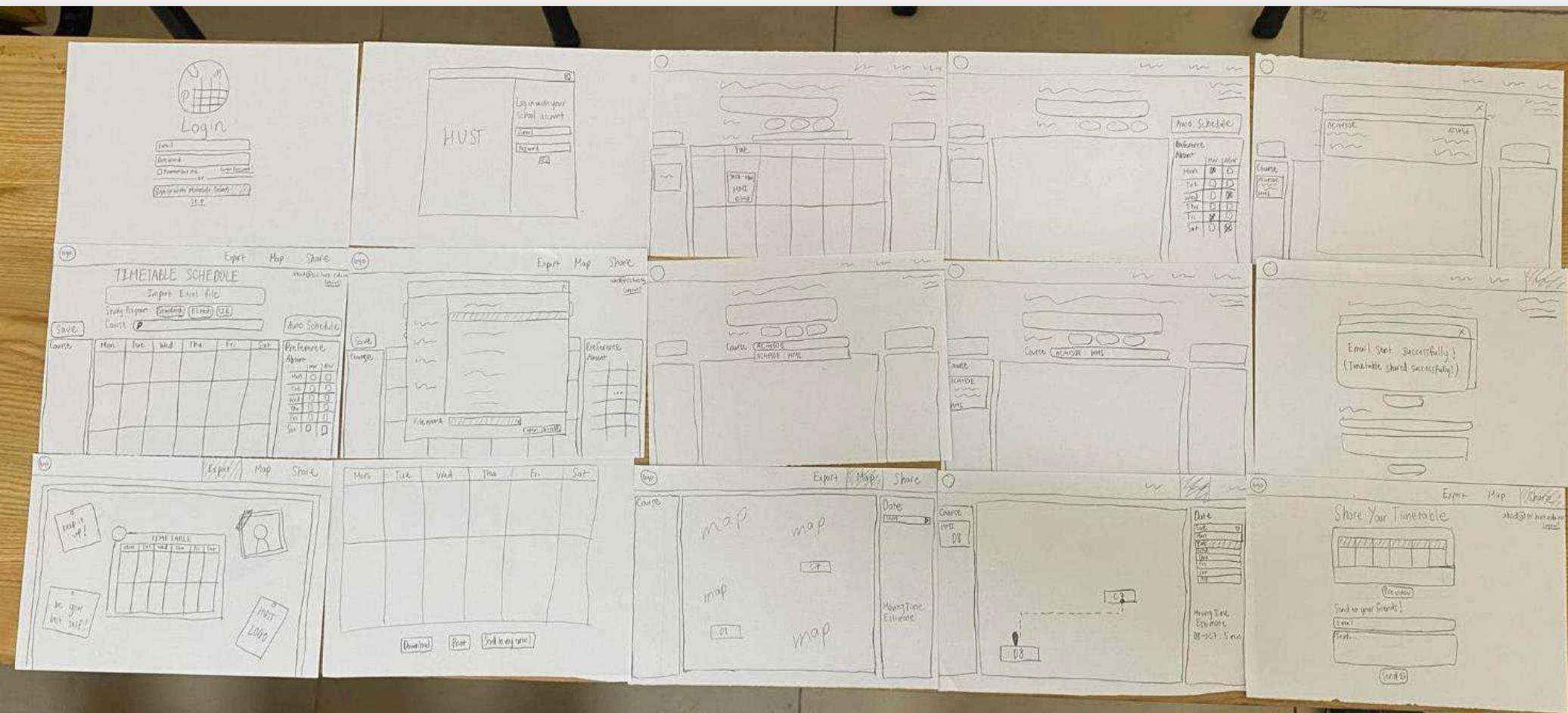
Comparisons

Aspect	AR + VR	Website/PC App
User Engagement	High immersion, engaging interactivity.	Moderate engagement, practical interface.
Ease of Access	Device-dependent, costly setup.	Accessible to all students.
Cost and Development	High development and hardware costs.	Moderate costs with easier maintenance.
Learning Curve	Steep for some users; tech-heavy.	Easy to use; familiar interface.
Scalability	Hard to scale without specialized devices.	Highly scalable with minimal restrictions.

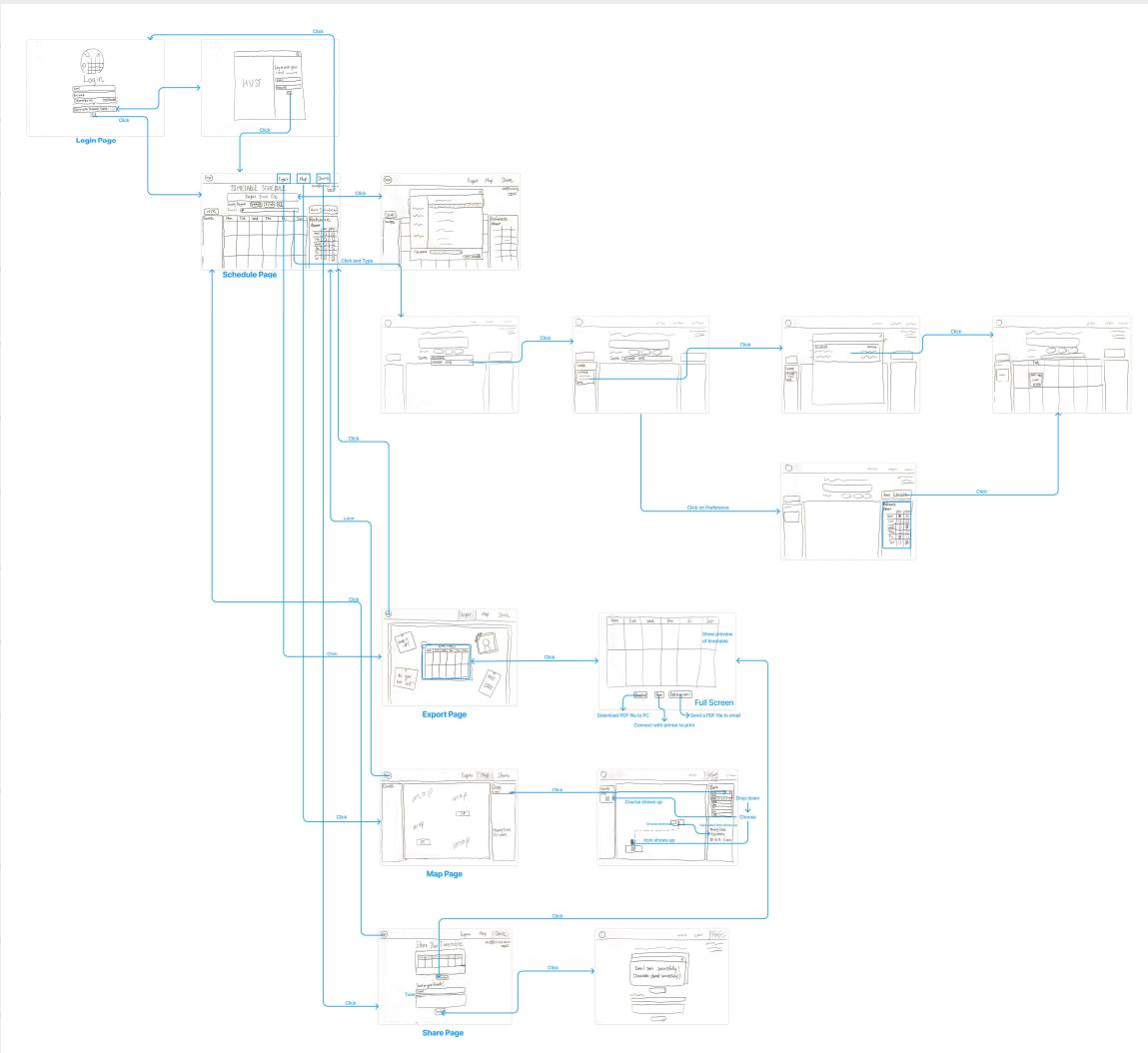
Selected Interface



Low-fi Prototype

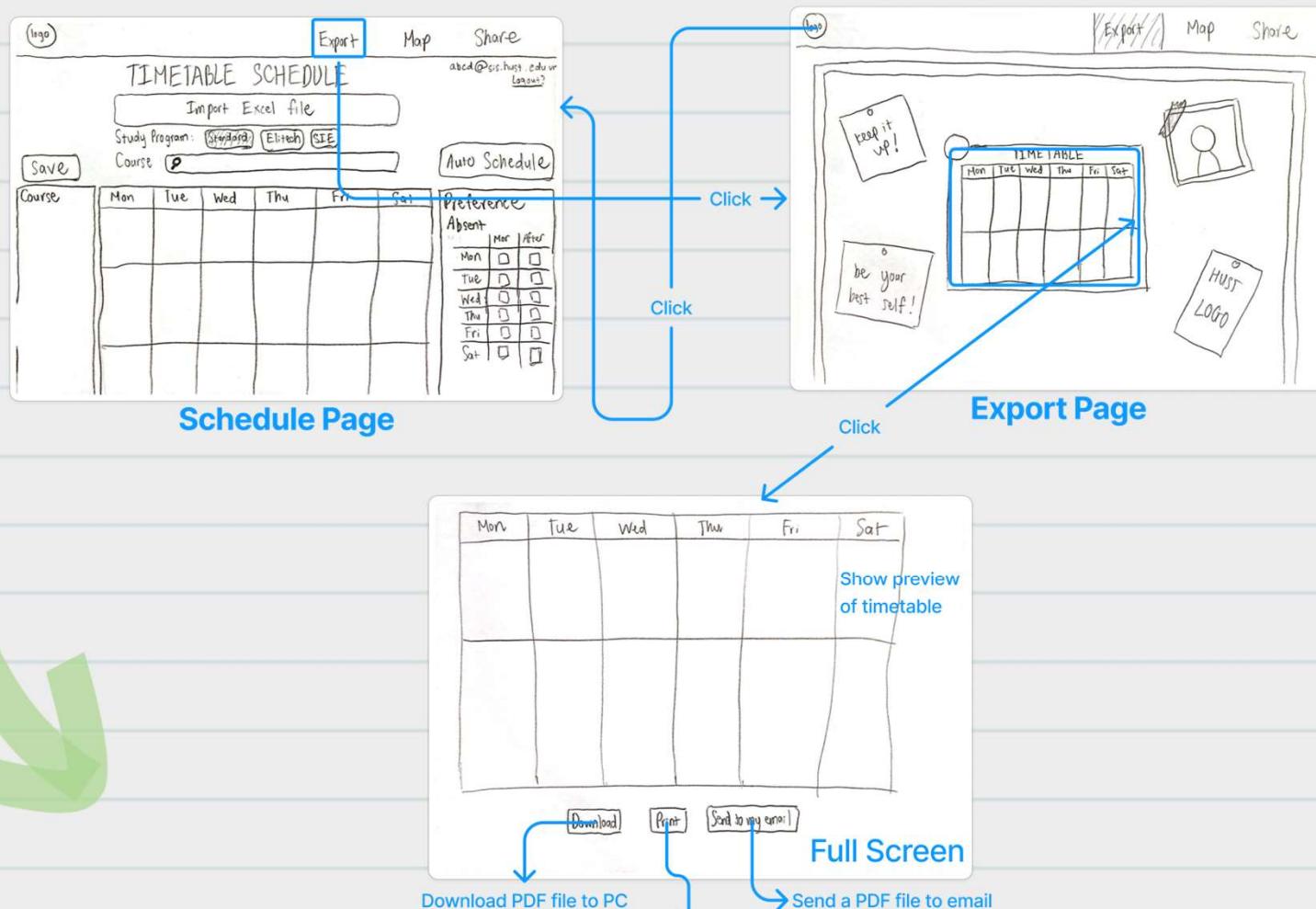


Low-fi Prototype



Simple Task Flow

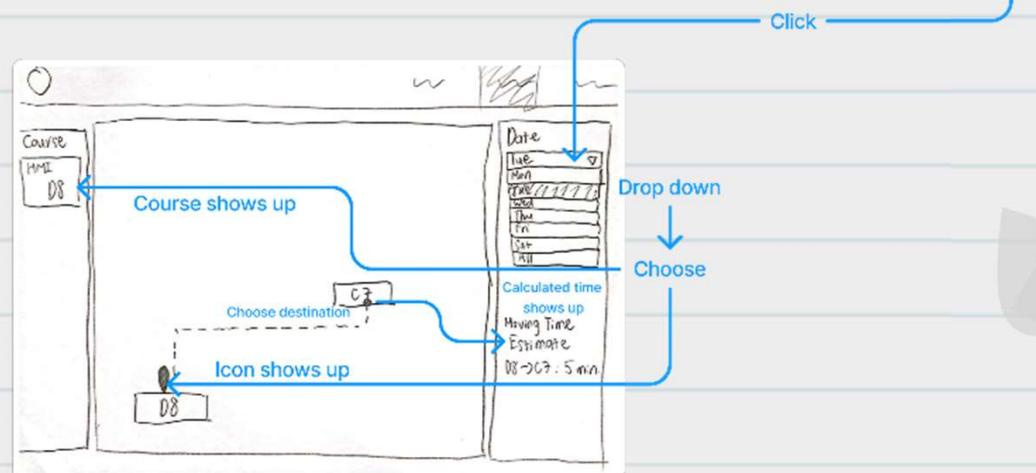
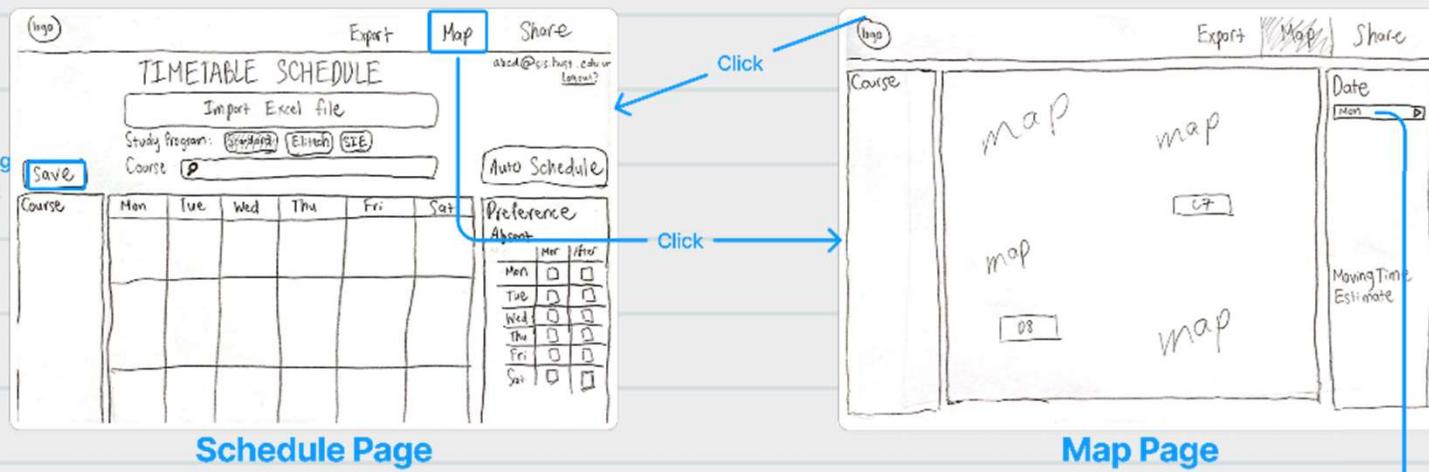
Export the personalized timetable to a PDF



Moderate Task Flow

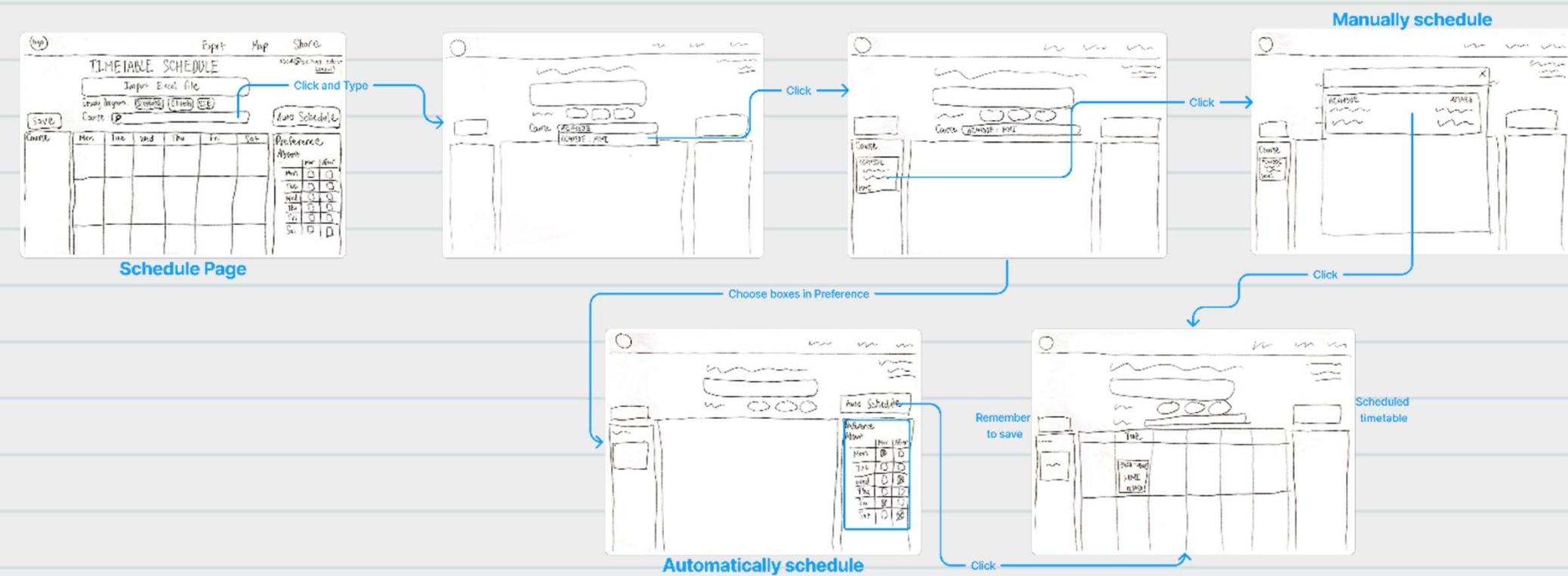
View the campus map with class locations

Remember to done scheduling and save the timetable first!



Complex Task Flow

Automatically generate and view a personalized timetable



Usability Testing



Duy
(20)
SOICT, HUST,
Hanoi



My
(21)
Banking Academy,
Hanoi



Nhi
(21)
University
of Exeter, England

Environment & Apparatus



We created a paper prototype and simulated user interactions manually.

The prototypes were arranged on a table, and participants interacted with them following our script.

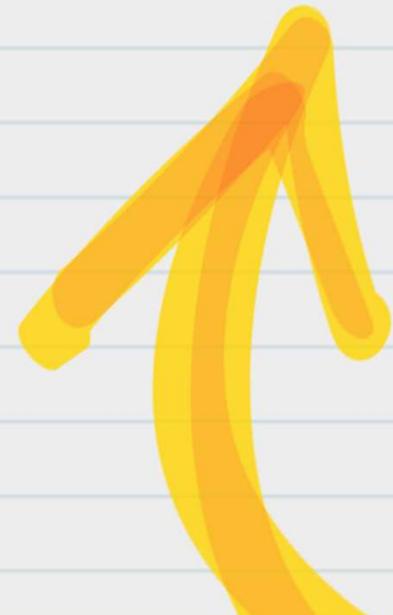
Procedure & Progress

Introduction

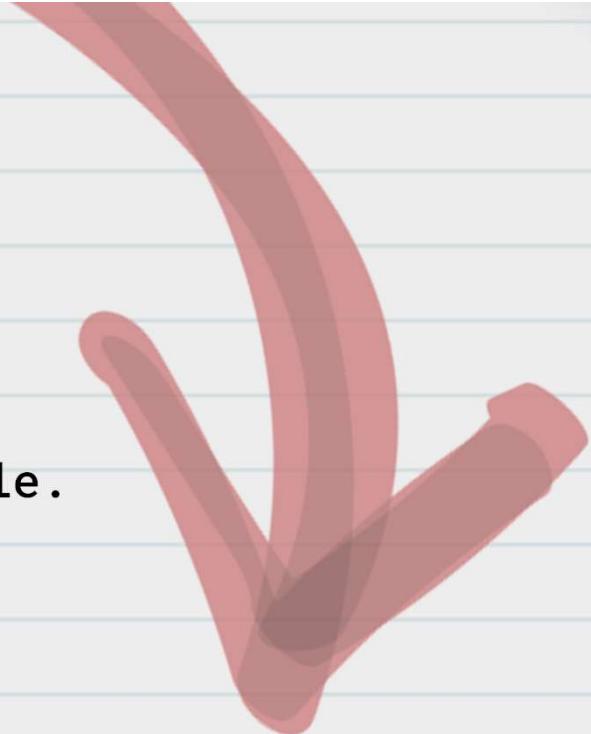
- Welcome participant and explain purpose (testing PlanMate prototype).
- Emphasize testing the prototype, not their skills.
- Obtain consent for participation and note-taking.

Set Up

- Arrange paper prototype elements logically.
- Explain roles (facilitator, computer, observer).
- Briefly outline the 3 tasks.



Procedure & Progress



Task Execution

- Task 1: Export timetable to PDF.
- Task 2: View campus map with class locations.
- Task 3: Generate and view personalized timetable.
- Observe user behavior and note challenges.

Feedback

- Ask about likes, dislikes, and moments of confusion.
- Collect suggestions for improvement.

Conclusion

- Thank participant and explain how feedback will help refine PlanMate.

Usability Goals and Metrics

1) Efficiency

- **Goal:** Participants should complete tasks quickly and without unnecessary steps.
- **Key Measurement:** Time taken to complete each task (measured in minutes and seconds).

2) Clarity and Intuitiveness

- **Goal:** The interface should be easy to understand and navigate.
- **Key Measurement:**
 - Number of errors (e.g., choosing the wrong feature or being unsure of what to do).
 - Participant feedback on clarity (e.g., a 1-5 scale on how intuitive they found the prototype).



Process Data

Task 1: Export Timetable to PDF

Common Feedback:

- **Strength:** The export function is straightforward once users locate the correct button.
- **Issues:**
 - Two participants misclicked the 'Share' button at least once, confusing it with Export.
 - The 'Export' button was described as hard to find and not prominent enough.
-> Mostly functional but lacks visibility for key buttons.



Process Data



Task 2: View Campus Map with Class Locations

Common Feedback:

- **Strength:** The map feature has strong potential and was positively received conceptually. Participants liked the idea of estimating travel time between classes.
 - **Issues:**
 - Navigation between tabs was a little bit hard to do.
 - The travel time estimation lacked clarity—users were unsure where to start or select endpoints.
- > Conceptually strong but needs better guidance for user actions.



Process Data



Task 3: Generate and View Personalized Timetable

Common Feedback:

- **Strength:** Participants found the concept of auto-generating a timetable appealing and thought it would save significant time during course registration.
- **Issues:**
 - Preferences setup was confusing, with a user misinterpreting it as manual selection instead of automated planning.
 - The 'Save' button was overlooked by all participants due to its placement and lack of visibility.
-> Valuable feature but struggles with unclear preferences and save functionality.

Bottom-line Data

Usability Goals Achievement Summary

- **Efficiency (Score: 3.5/5):**
 - **Achieved:** Basic tasks were completed, but not efficiently. Miscalclicks and navigation confusion slowed down completion times.
 - **Not Achieved:** Several users needed to backtrack or retrace steps, which led to delays across all tasks.
- **Clarity and Intuitiveness (Score: 3/5):**
 - **Partially Achieved:** The app had potential, but users required significant trial-and-error to complete tasks. Errors due to unclear button placements, and task confusion were common.
 - **Not Fully Achieved:** The prototype's lack of step-by-step instructions and misplacement of buttons significantly hindered task clarity.

Bottom-line Data

Implications

- **Button Placement & Labeling:** Miscalclicks show the need for better visual hierarchy and clear labeling to reduce errors.
- **Navigation Improvements:** Adding a 'Home' tab or breadcrumb trails can simplify task transitions and enhance user flow.
- **Guidance for Complex Features:** Tasks like setting preferences and using the map require tooltips or instructions to guide users, especially first-timers.



Bottom-line Data

Changes

- **Button Redesign:** Position critical buttons prominently and use consistent design patterns. Maybe add confirmation messages after actions.
- **Enhanced Navigation:** Add a 'Home' tab for easy access to the main page and breadcrumbs to show user location within the app.
- **Feature Guidance:** Provide tooltips or tutorials for the 'Preferences' setup and 'Travel Time Estimation'. Improve map annotations with clearer start/end points.



Bottom-line Data

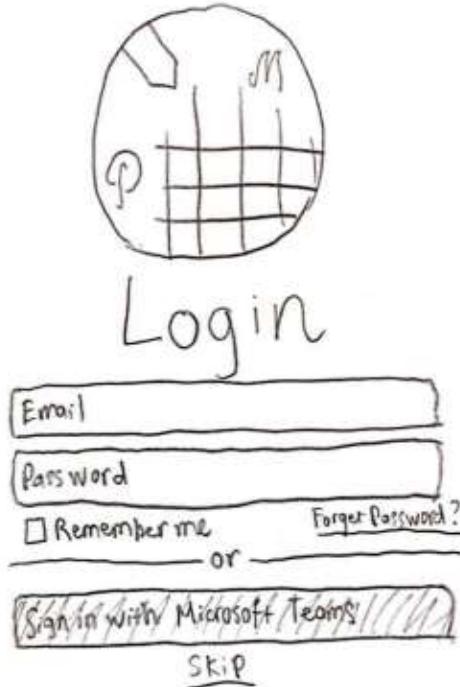
What's Testing Couldn't Reveal



- **Aesthetic Appeal:** The lack of color and final design elements means user opinions on the visual design were not assessed.
- **Long-Term Usability:** Testing was done on first-time use; how users adapt or perform over time was not evaluated.
- **Performance Under Load:** The prototype didn't simulate real-world usage, so performance and scalability remain untested.
- **Edge Cases:** Scenarios like conflicting preferences or incomplete timetable files were not fully explored.



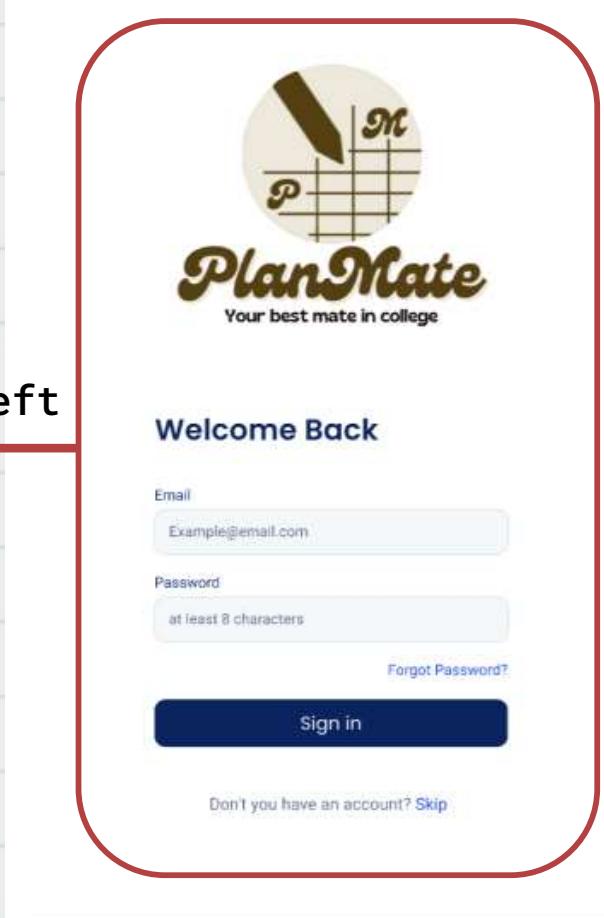
Change 1: Login Page



Before

Change 1: Login Page

Move to the left



The original PlanMate login page features a logo with a pen and a grid, followed by the text "PlanMate" and "Your best mate in college". Below this is a "Welcome Back" message. There are two input fields: "Email" containing "Example@email.com" and "Password" with the placeholder "at least 8 characters". A "Forgot Password?" link and a blue "Sign in" button are also present. At the bottom, there's a link for users without an account: "Don't you have an account? Skip".

New!



After

Change 1: Login Page

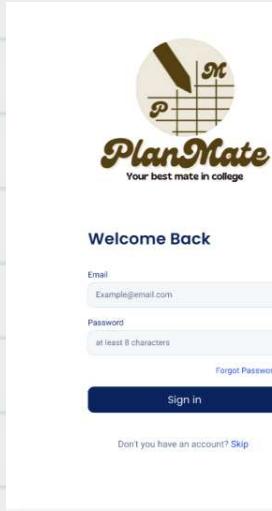
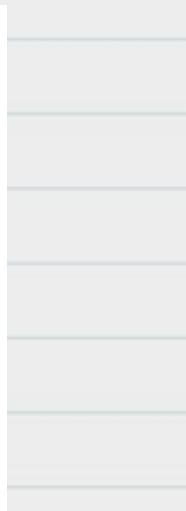
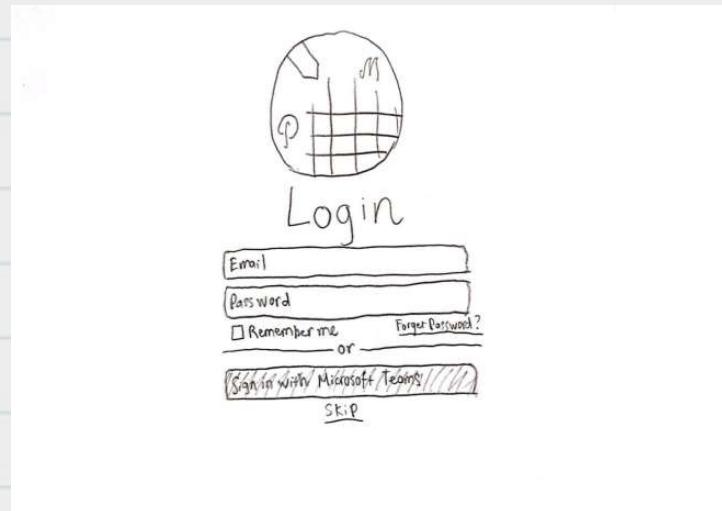
Changes

- Move the login box to the left

To create a more balanced layout and ensure better visual flow, improving user experience.

- Add an image of HUST campus to the right

Increases brand recognition and creates a more familiar and engaging environment for users.



Change 2: Timetable/Schedule Page

A hand-drawn sketch of a web-based Timetable/Schedule Page. The interface includes:

- Top navigation bar with a logo icon, Export, Map, and Share buttons.
- User information: abcd@sis.hust.edu.vn and Logout? link.
- Main title: TIMETABLE SCHEDULE.
- Import Excel file button.
- Study Program selection: Standard, Elitech, SIE.
- Course search bar with placeholder text: Course: #.
- Save button.
- Auto Schedule button.
- Course grid table with columns for Mon, Tue, Wed, Thu, Fri, Sat.
- Preference section titled Preference Absent with a grid for marking availability (Morning or Afternoon) for each day of the week.

Before

Change 2: Timetable/Schedule Page

The screenshot shows the Timetable/Schedule page with several UI changes highlighted by red annotations:

- Move to the left:** A red arrow points to the "Course Selected" and "Class Course Detail" sections, which have been moved to the left side of the page.
- Rearrange buttons:** A red box encloses the "Preference Absent" checkbox group and the "Auto Generate" and "Save Timetable" buttons, indicating they have been rearranged.
- Move to the right:** A red arrow points to the large "TIMETABLE SCHEDULE" grid, which has been moved to the right side of the page.

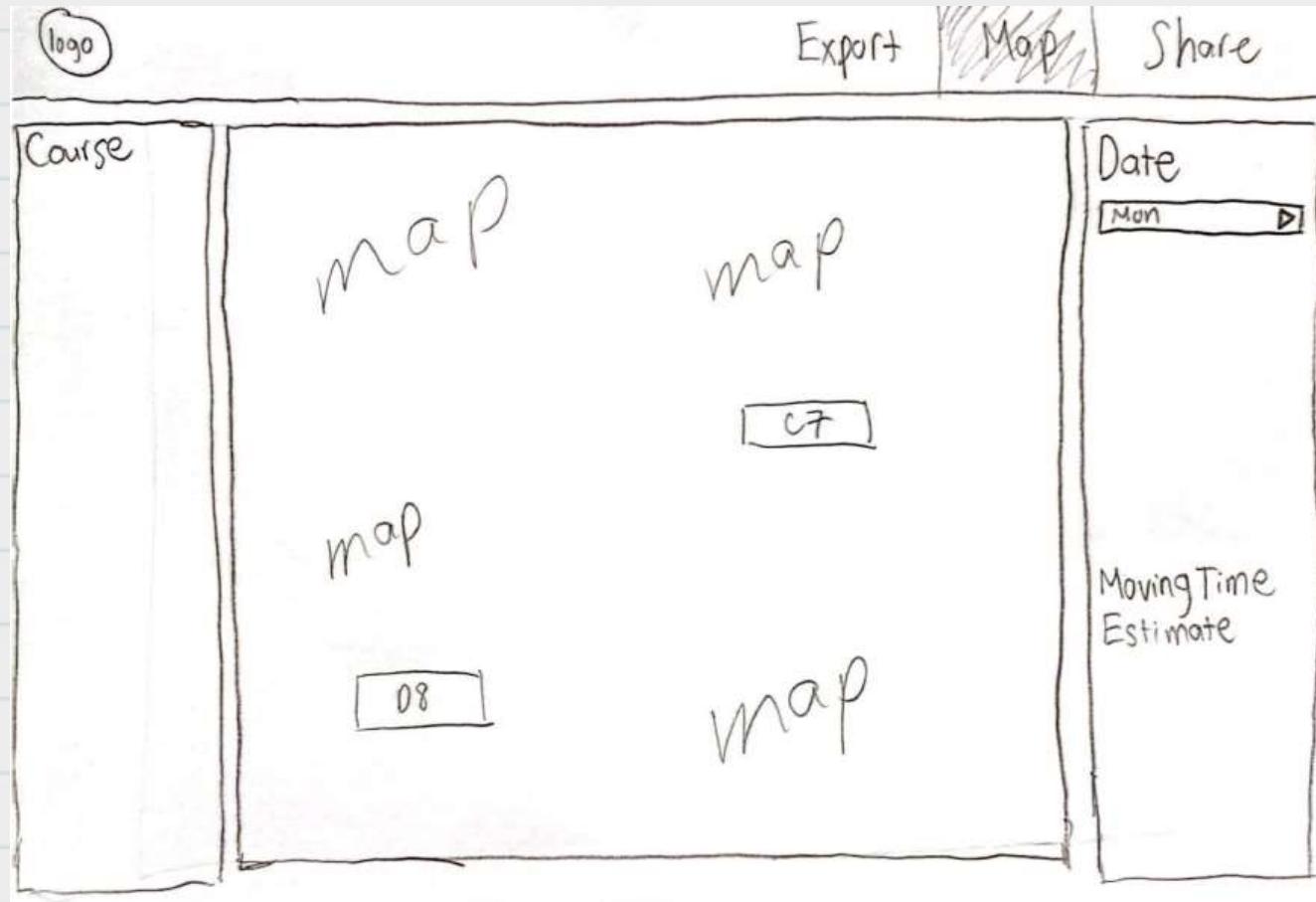
After

Change 2: Timetable/Schedule Page

Changes

- Add a "Schedule" page button (instead of using the logo)
Provides clearer navigation and makes it easier to return to the schedule.
- Move the "Upload File" and "Search Course" sections to the left
Creates a more organized layout and improves accessibility.
- Move the "Preferences" section to the left and adjust checkbox options
Improves readability by separating options, making it more user-friendly.
- Reorganize the "Auto Generate" and "Save" buttons close together
Enhances efficiency by grouping key actions for quicker completion.
- Shift the timetable slightly to the right
Creates a balanced, natural visual flow after layout adjustments.
- Add a button/tab for the profile instead of email/logout in the corner
Improves accessibility to profile and logout options, enhancing navigation.

Change 3: Map Page



Before

Change 3: Map Page

Move to the left
Change into checkboxes

The screenshot shows a university map page with several interface changes highlighted by red arrows and boxes:

- Day Check:** A section on the left containing a list of days with checkboxes. An arrow points from the text "Move to the left" to this section.
- Class Course Detail:** A section listing course details for three courses. An arrow points from the text "Change into checkboxes" to the checkboxes in this section.
- Map:** The central part of the page is a detailed campus map showing buildings, roads, and landmarks. An arrow points from the text "Move to the right" to this area.
- Location:** A section at the bottom left showing the distance and estimated time to travel between two locations (From: D8 Building, To: D8 Building).
- Moving Time Estimate:** A section at the bottom right showing estimated times for walking, biking, and driving.

Move to the right

Separate from
the "Day Check"
box
Move down here

After

Change 3: Map Page

Changes

- Move "Day Check" to the left and replace the dropdown with checkboxes

Synchronizes with the course schedule selection, making it more intuitive and consistent.

- Separate "Moving Time Estimate" from "Day Check" and move it to the bottom, adding extra details

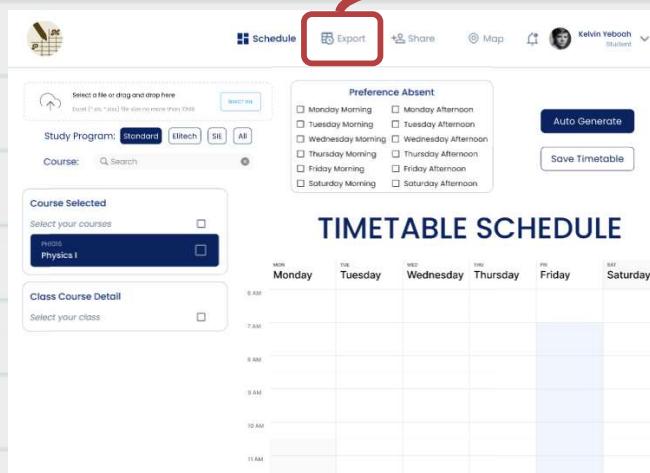
Improves clarity by isolating time estimates and providing additional information for better planning.

- Shift the map to the right

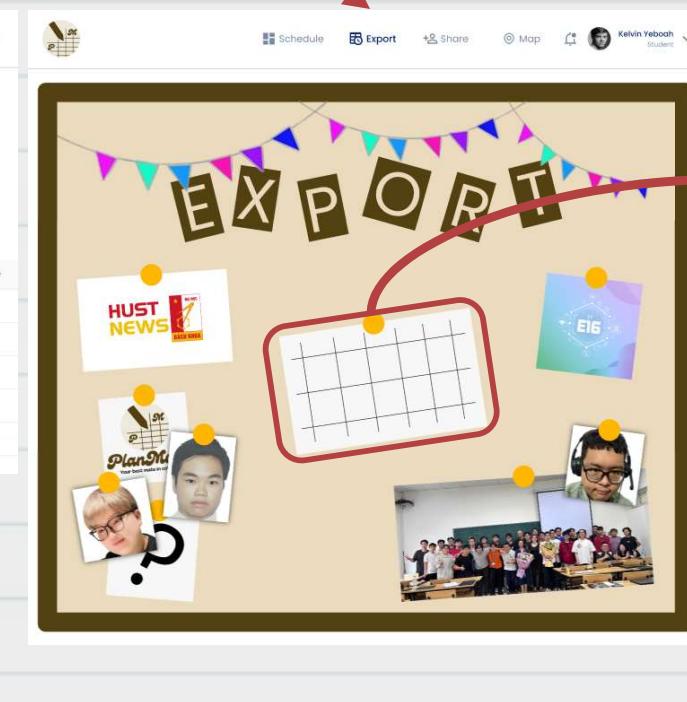
Creates a more balanced layout after rearranging the elements.

Simple Task Flow

Export the personalized timetable to a PDF



The screenshot shows the 'TIMETABLE SCHEDULE' page. At the top, there's a navigation bar with 'Schedule', 'Export' (which is highlighted with a red box), 'Share', 'Map', and a user profile for 'Kelvin Yeboah'. Below the navigation, there are sections for 'Preference Absent' (checkboxes for various days and times) and 'Auto Generate' (button). A large 'TIMETABLE SCHEDULE' grid is displayed for the week from Monday to Saturday, with time slots from 8 AM to 11 AM. On the left, there are dropdown menus for 'Study Program' (Standard, Ulrich, STI, All) and 'Course' (Search). A red arrow points from the 'Export' tab on the first screen to the 'Export' button on the second screen.



The screenshot shows the 'TIMETABLE SCHEDULE PREVIEW' page. It features a decorative banner with the word 'EXPORT' and various icons. Below the banner is a grid representing the timetable. A red box highlights this grid. To the right is a detailed 'TIMETABLE SCHEDULE PREVIEW' table for the week, showing hours from 8 AM to 7 PM. At the bottom, there are three buttons: 'Download' (highlighted with a red box), 'Print', and 'Send to my email'.

[Click “Export” tab]

[Click the picture of the timetable]

[Click “Download” button]

Moderate Task Flow [1]

View the campus map with class locations

The screenshot shows a student's timetable schedule and a campus map. On the left, the 'TIMETABLE SCHEDULE' section displays a grid for Monday through Saturday from 8 AM to 11 AM. A red arrow points from the 'Map' tab in the top navigation bar to the campus map on the right. The 'Map' tab is highlighted with a red box. The campus map shows various buildings and landmarks, with specific class locations marked. Below the map, there are sections for 'Day Check' (checkboxes for days and times), 'Class Course Detail' (listing PH1016 - Physics I (BT) with study week 1-8, 10-18, room D9-201, and Dr. Idonkorhene Her), and 'Moving Time Estimate' (from DB Building to DB Building, distance 3.5 km, walking time 1:00:07, bike time 18:25, car time 18:25).

[Click "Map" tab]

Moderate Task Flow (2)

View the campus map with class locations

The figure consists of three side-by-side screenshots of a university course search application interface. Each screenshot shows a campus map at the top with various buildings and green spaces. Below the map are sections for 'Day Check' (checkboxes for Monday through Saturday Morning and Afternoon), 'Class Course Detail' (list of courses with descriptions and checkboxes), 'Location' (dropdowns for 'From' and 'To' buildings), and 'Moving Time Estimate' (distance, time, and mode options). A red box highlights the 'Day Check' section in the first screenshot, the 'Class Course Detail' section in the second, and the 'Moving Time Estimate' section in the third.

[Choose wanted days in
"Day Check" checkboxes]

[Choose wanted courses
to see the classes]

[The map displays the
classes and estimate
moving time shows up]

Complex Task Flow [1]

Automatically generate and view a personalized timetable

The image displays two side-by-side screenshots of a web-based timetabling application interface.

Left Screenshot: A user has uploaded an Excel file named "Imported Timetable.xlsx" to the "Select a file or drag and drop here" input field. The "Imported Timetable.xlsx" file size is 10MB. Below the file upload area, there are filters for "Study Program" (Standard, Elitech, SIE, All) and a "Course" search bar. A red box highlights the "Imported Timetable.xlsx" file entry. The main section shows a "TIMETABLE SCHEDULE" grid for Monday through Saturday from 6 AM to 11 AM.

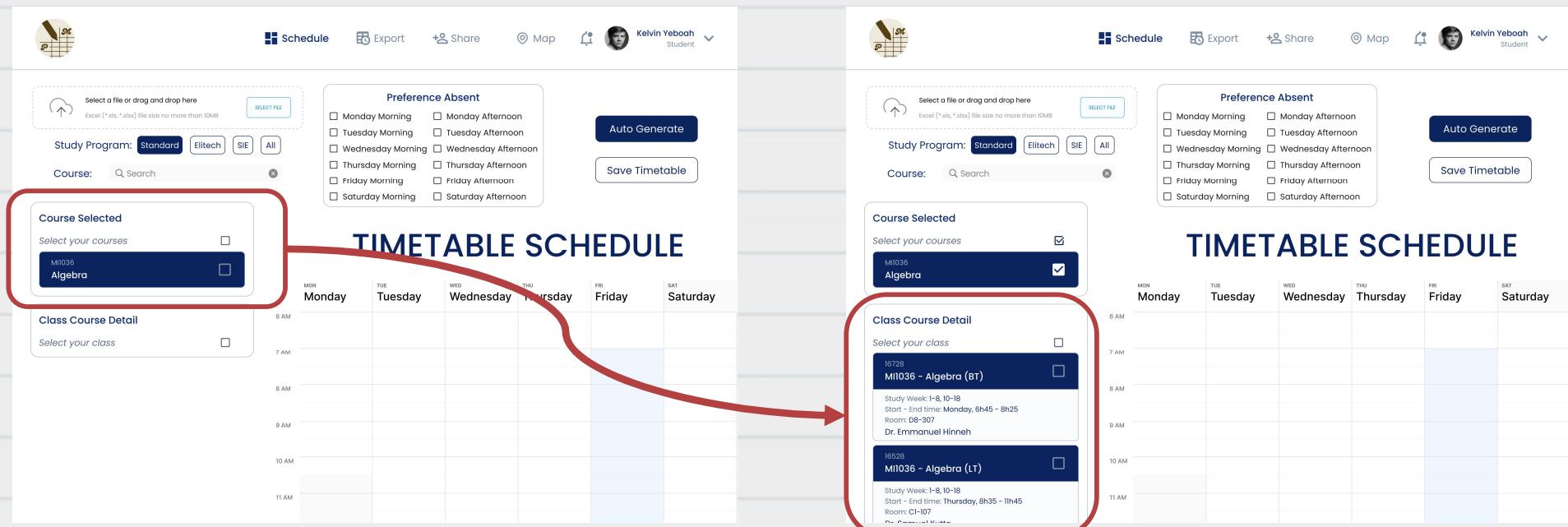
Right Screenshot: The user has selected "Standard" as the study program and searched for the course "Mathematics". A red box highlights the "Course: Mathematics" search entry. The "TIMETABLE SCHEDULE" grid is identical to the left screenshot.

[Click to import Excel file]

[Check the Study Program and Search for the course's name]

Complex Task Flow (2)

Automatically generate and view a personalized timetable



[Choose the course to show more information]

[The details of the classes of that course show up]

Complex Task Flow (3)

Automatically generate and view a personalized timetable

The screenshots illustrate the steps to generate a personalized timetable:

- Step 1:** The user selects "Preference Absent" checkboxes for specific days and times (e.g., Monday Morning, Tuesday Afternoon).
- Step 2:** The user clicks the "Auto Generate" button.
- Step 3:** The generated timetable is displayed, showing the scheduled classes and the checked class (Algebra BT) in the "Class Course Detail" section.

[Check the boxes from the “Preference Absent” checkboxes]

[Click on the “Auto Generate” button]

[The timetable automatically schedules, also the chosen class is checked]

P/S: Remember to click “Save Timetable” for further uses!

Heuristic Evaluation

Category	# Viol. (sev 0)	# Viol. (sev 1)	# Viol. (sev 2)	# Viol. (sev 3)	# Viol. (sev 4)	# Viol. (total)
H1: Visibility of System Status	0	0	1	2	0	3
H2: Match between System & Real World	0	0	2	1	0	3
H3: User Control & Freedom	0	0	1	2	0	3
H4: Consistency & Standards	0	0	3	0	0	3
H5: Error Prevention	0	0	0	3	0	3
H6: Recognition Rather Than Recall	0	0	0	3	0	3
H7: Flexibility & Efficiency of Use	0	0	5	0	0	5
H8: Aesthetic & Minimalist Design	0	3	0	0	0	3
H9: Recognize, Diagnose, & Recover from Errors	0	0	0	1	1	2
H10: Help & Documentation	0	0	1	0	0	1
Total Violations by Severity	0	3	13	12	1	29

Heuristic Evaluation

Severity / Evaluator	Bao	Minh	Phong
% Sev. 0	0%	0%	0%
% Sev. 1	33.33%	33.33%	33.33%
% Sev. 2	53.85%	30.77%	53.85%
% Sev. 3	8.33%	25%	66.67%
% Sev. 4	0%	100%	0%
Total (Sev. 3 & 4)	7.69%	30.77%	61.54%
Total (all severity levels)	31.03%	31.03%	55.17%

Heuristic Evaluation

13 issues with severity 3 and 4:

- **H1 Visibility of System Status (2 issues)**: Users may not receive timely feedback, leading to confusion.
- **H2 Match Between System and the Real World (1 issue)**: Some design elements don't align with user expectations, affecting intuitiveness.
- **H3 User Control and Freedom (2 issues)**: Lack of options to undo or escape actions, causing frustration.
- **H5 Error Prevention (3 issues)**: Design elements fail to prevent user mistakes, increasing error-proneness.
- **H6 Recognition Rather than Recall (3 issues)**: Users are forced to remember information, raising cognitive load.
- **H9 Error Recovery (2 issues)**: Insufficient error diagnosis and recovery support for users.

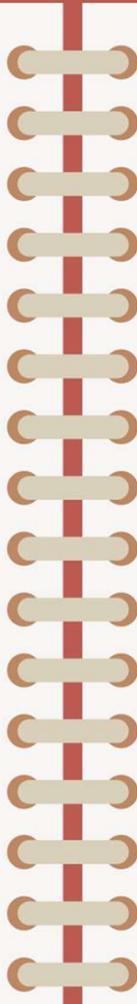
Identified Values

Intuitiveness

Students should quickly understand how to use the website without needing instructions.

Efficiency

Students need to organize timetables quickly to save time during course registration.



PlanMate

Your best mate in college

Personalization

Different students have different scheduling needs, so flexibility is crucial.

Spatial Awareness

Knowing where classes are located helps students plan their day effectively.

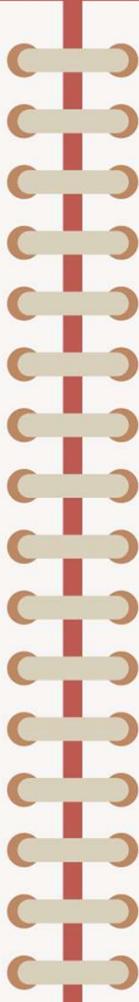
Value-Aligned Features

Intuitiveness

Drag-and-drop Excel upload with instant confirmation.

Efficiency

Auto-generate timetable based on user preferences.



PlanMate
Your best mate in college

Personalization

Set custom preferences like off-days or study times.

Spatial Awareness

Campus map showing class locations clearly.

PlanMate

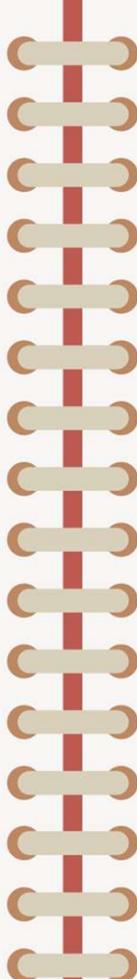
Your best mate in college

Simplicity vs. Customization

Balancing ease of use with user control over personalizing the system.

Efficiency vs. Comprehensiveness

Striving for a fast, efficient interface without sacrificing detailed functionality.



Conflicting Values

Clarity vs. Visual Balance

Enhancing clarity may disrupt visual harmony.

Streamlined Design vs. User Needs for Detail

Simplified design vs. the need for detailed information.

PlanMate

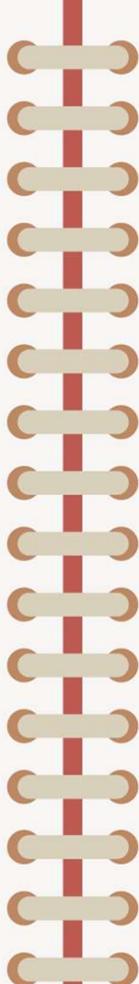
Your best mate in college

Simplicity vs. Customization

Simple default settings with options for color and layout adjustments.

Efficiency vs. Comprehensiveness

Streamlined layout with drill-down options for more details.



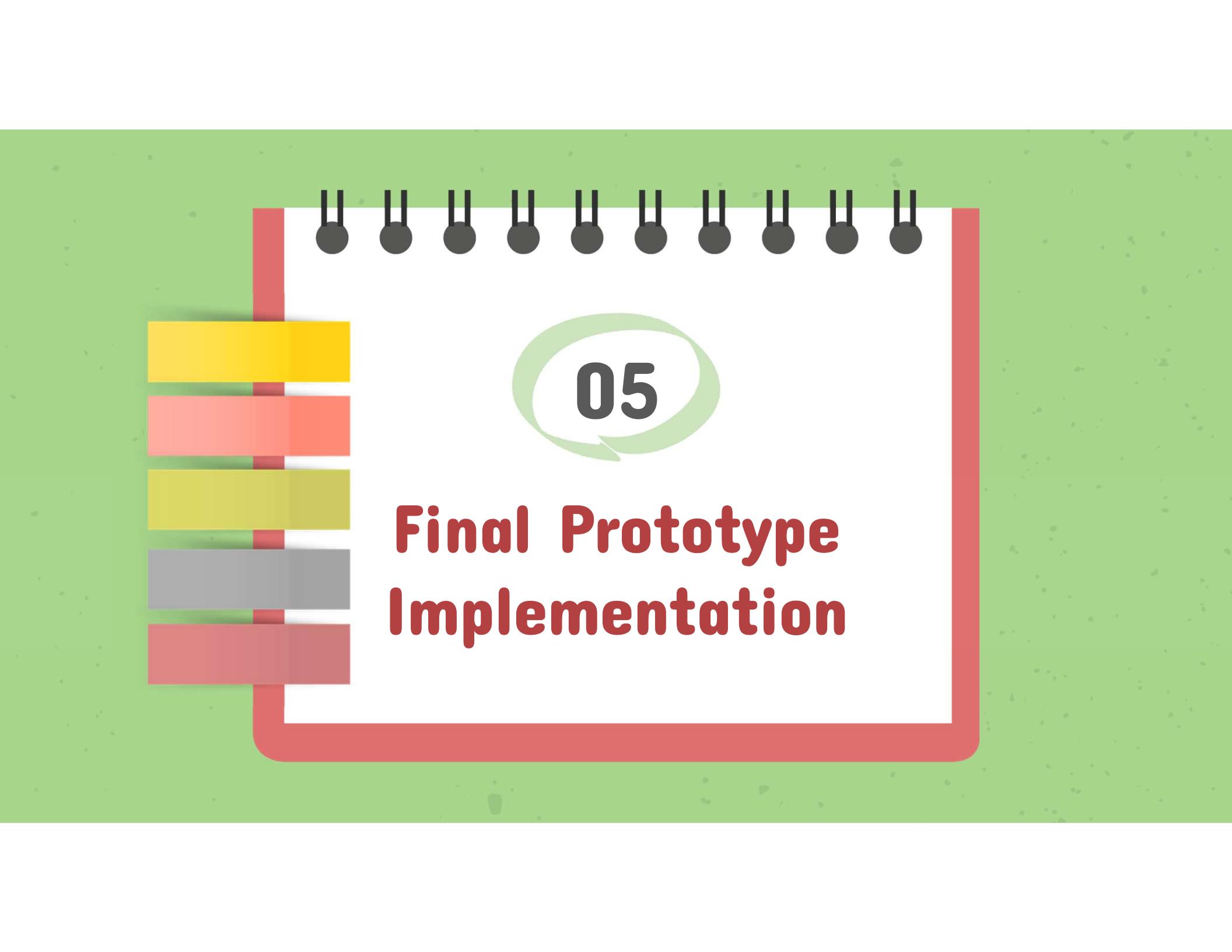
Value-Aligned Features

Clarity vs. Visual Balance

Clearer elements, but slight layout imbalance.

Streamlined Design vs. User Needs for Detail

Key features visible, with optional detailed views.



05

Final Prototype Implementation

Design And Prototyping Tools

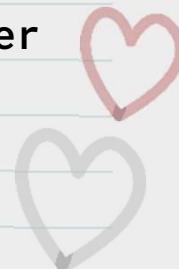


Pros

- **Collaborative:** Real-time feedback and team collaboration.
- **Interactive:** Create clickable prototypes for testing.
- **User-Friendly:** Easy to design and prototype without advanced skills.
- **Cloud-Based:** Accessible from anywhere, enabling remote work.

Cons

- **Limited Interactivity:** Can't fully simulate advanced user flows.
- **Performance:** Large files may slow down.
- **Not Fully Realistic:** Doesn't replicate the full app experience.



Limitations And Trade-offs



- **No Specific User Profiles:** Lacks personalized user data or profiles.
- **Incomplete Button Implementation:** Some buttons are not fully functional, limiting interactions.
- **Limited Search and Import Features:** Search and import course functions are not fully developed.
- **Incomplete Map Functionality:** The map does not display all locations or features yet.
- **Limited Testing Scenarios:** User flows and behaviors can't be fully tested as the prototype is not fully interactive.

Wizard-of-Oz



- **Course Search:** Manually simulate the search results when users input a query, even if the search function isn't fully implemented.
- **Timetable Generation:** Simulate automatic timetable creation by manually arranging courses, as the algorithm for auto-generating the timetable isn't active yet.
- **Map Functionality:** The map is incomplete, simulate location-based actions, like showing the classroom locations, manually selecting from pre-defined spots on the map.
- **Save/Load Timetable:** When users try to save or load timetables, simulate the action manually, even if backend storage isn't implemented yet.



Hard-Coded Items

- **Predefined Timetable Layout:** The layout for the timetable is fixed, with pre-set courses and schedule structure that users can view but not interact with dynamically.
- **Fixed Course List:** The list of courses that users can choose from might be static, with no real-time updates or personalized course options.
- **Static Preferences:** Preferences such as days or times for courses may be hard-coded into the interface, with limited options and no dynamic customization.
- **Map Display:** The map is likely to show fixed locations, such as buildings, but does not dynamically update or adjust based on user input or the courses selected.



06

Reflection and Next Steps

Key Learning

About the Design Process

We learned the importance of empathy, iteration, and user feedback in creating a solution that meets user needs and continuously refining ideas.

About the Studio Theme

This project emphasized the importance of creating a functional, user-friendly design that reduces stress and enhances student experiences.

About the Project

We balanced creativity with practicality, learning how flexibility and teamwork are key to delivering a functional, user-centered product.

Future Work

- **Web/Mobile App Deployment:** Move from prototype to a fully functioning web or mobile app, integrated with university systems for seamless scheduling and personal planning.
- **Personalization Features:** Allow students to customize layout, colors, and reminders; add advanced options like task management and study time suggestions.
- **Notifications & Reminders:** Extend notifications for deadlines, exams, and study group meetings to help students stay organized.
- **Backend Scalability:** Develop a robust backend system to handle large data volumes and real-time updates for course availability and schedule conflicts.
- **Long-term Goal:** Provide a tool that helps HUST students with intuitive time management, improving productivity and well-being.

Acknowledgements



We would like to express our sincere gratitude to the participants of our user interviews for their invaluable feedback.

Special thanks to Assoc. Prof. Dr. Tran Thi Thanh Hai and Dr. Nguyen Viet Tung for your expert guidance and support.

Lastly, thanks to everyone who has supported us throughout this project. Your contributions made this journey meaningful.

- From: Group 3 -

For further details, please refer to the Final Report and Appendix.

Thanks
For
Listening!

From:
Group 3

PlanMate

Thank

APPENDIX

tening!

From:
Group 3

Plagiarate

Needfinding Interview Script

Take a look!



PlanMate
Your best mate in college

Concept Video



Have fun!
😊



Low-fi Prototype



Better Version



Usability Testing Script



Take a look!



Me-fi Prototype



Have a try!



And...



**For Other
Details**

