CS 425 **Project assignment 4**

To Deliver

- *Upload a pdf file to the Gradescope assignment with results for challenges 1-5, you need to mark which pages address which challenge.*

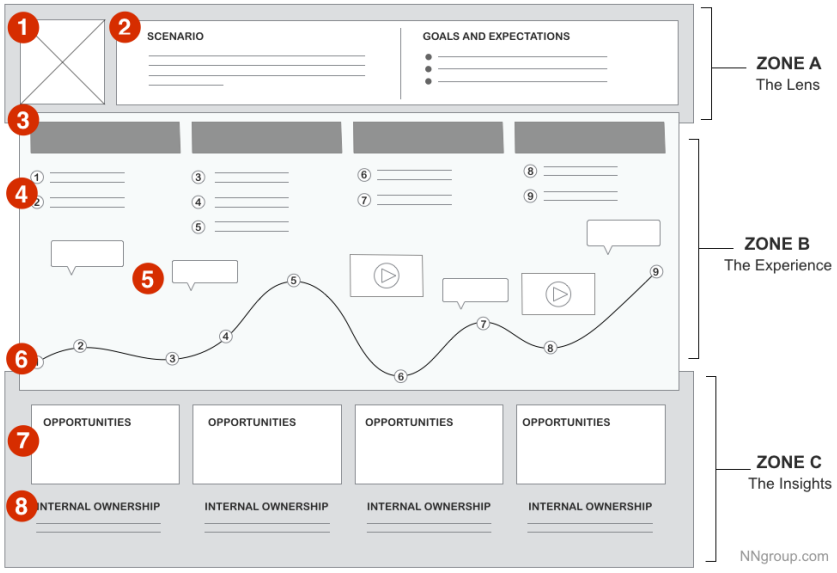
Objectives:

- Learn basic techniques for UI/UX design
- Learn how to work with software that supports team work
- Practice researching the state of the art, being creative about finding solutions

In general, I expect you to break down the overall assignment into individual tasks that team members opt for and take responsibility for. Who did what needs to be stated within the deliverables. If all names show up for all bits and pieces of all challenges, you do something wrong, you don't coordinate, parallelize, and take responsibility for particular results.

Challenge 1: Develop 2 User Journey Maps

We discussed a user journey map in class, now is the time to develop two for your project. Check also https://www.nngroup.com/articles/customer-journey-mapping/ for more information and a template to use. The point of view should be that of your persona, the archetype of your



customer segment. The scenario should be the main use that you foresee for your product. One user journey map should show the current reality for a user, the second one should show the "to-be" experience that you design for your product. The perspective is short term, a specific scenario, e.g., if your product is a course registration website, then the journey would be how a student registers for their classes in spring 2021.

1) What is required for your response
    1) A user journey map for your customer's current experience, how they solve the problem you address right now.
    2) A user journey map for your customer's experience with your new product.

3) A written reflection of the strengths and weaknesses of this format for designing a user experience. Did you learn anything interesting from a user journey map? Was it helpful to design your system? Did it help with communication among team members?
4) The name of the responsible team members for the user journey maps and the reflection.

Challenge 2: Design a User Interface

Design a User Interface for your project. Use your journey map from Challenge 1 to get your team on the same page. Exercise one of Leah Buley's suggestions to quickly come up with several possible designs and sketch those on paper first. Use these to build a quick & easy paper prototype that you can try with other team members or other students to see if it works. Once you achieved a design that you find acceptable, only then put the effort into drawing actual wireframes with a professional tool (because this takes time and effort such that doing a quick & easy paper prototype first is more productive). The wireframes will give you a clickable prototype that you can then also use to evaluate your approach with users. Use a professional tool for wireframing such as Balsamiq (balsamiq.com, free 30 day trial) or Axure (axure.com, free 30 day trial). Note: https://balsamiq.com/for/entrepreneurs/

2) What is required for your response
    1) Document which of Leah Buley's approaches to create several designs you tried and provide pictures of the paper sketches you made.
    2) Take a few pictures to document the paper prototype that you made with paper and pencil/pen and that you tested with team members before you made the wireframes.
    3) Describe in writing the design idea and particular decisions you made, for instance for navigation, for the text/wording you used on the UI.
    4) Provide a clickable prototype for your UI based on wireframes: for instance a pdf file where certain areas are clickable and lead to other pages (uploaded to the folder), or a link in the text document for this challenge if the prototype is stored in the cloud.
    5) Name the responsible team members for this challenge.

Challenge 3: Setting up Gitlab for the project

We will use the W&M Gitlab as a shared repository for code, documentation, and issue tracking. The instructor will create a project for your team under code.wm.edu/CS/425, please share which template you would like to use asap. All team members will have access to the GitLab repository.

- Decide on template you would like to use for your project (see Piazza post on choices).
- Identify a team member who will be responsible (maintainer) for the gitlab project repository.
    - Setup 2 folders in your repo: Artifacts and Code
    - Create labels: Bug, New Feature, High priority, Medium Priority, and Low priority
    - Create milestones that correspond to sprints (deadlines for P4, P5, P6, …)
    - Create a README.md file in the root of the repo which includes the Project's description, the technologies used, and references
    - Explore how to benefit from the CI/CD pipeline.
- All issues for the current sprint must have a team member (student) assigned to it.

3) **What is required?**
    1) The repository needs to have 2 folders (Artifacts and Code).
    2) The issue tracker needs to be set with milestones, a back log and the default columns. The back log needs to be filled with issues (user stories, tasks, spikes) as you have it.

3) The name of the team member who is in charge of organizing gitlab for the team (the Gitlab expert). The task is to setup the Gitlab repository according to spec and keep it organized and operational for team members and grader. Merging branches into the master branch which will be considered for grading. Making sure that issues carry a milestone, are assigned to a person, and are properly labeled.

Challenge 4: Research spike

You need to make sure that your proposed topic has something innovative, something novel in it that existing solutions do not have and can not easily copy from you. This is what gives your startup a **competitive edge** in the otherwise brutal competition among competitors for market share. Please research publications such as journal and conference papers and alike on what could be specifically challenging and novel in your project, reach out to W&M faculty & staff whose specialty may be related and who could share some guidance. What follows is some food for thought (an incomplete list of notes from my side):

- Lively: The key question is what are the characteristics of 2 people who manage to live together and share a room such that both are sufficiently ok with this, ideally they become longterm friends. What makes a good match? Are people similar or complementary? One can expect a body of knowledge in Psychology on this plus corresponding methods on how to recognize the personality traits that matter for a match (or mismatch). Who are subject matter experts on campus? Psychology faculty, student counsellor, administration that deals with housing issues? Also: who is offering such a service already? E.g.: https://www.chicagotribune.com/business/ct-roommate-matching-chicago-startup-adv-biz-20140821-story.html A contrarian approach: just learn from observations what kind of people live together and how happy they are (do a survey, generalize from that, and have a learning system that recognizes over years what works and what not).
- PolyglotClubhouse: As this is about language learning, culture, and friendship, what can make a digital experience really fly? Who are subject matter experts on campus? One can expect a body of knowledge on language learning in the School of Ed as well as in Modern Languages at W&M. STLI at W&M could be useful for existing technology. When it comes to matching people to learn together, your topic relates to Lively, so please check the notes above but from your point of view. Could you benefit from modern technology (say an AI chat bot), or what could be conversation starters: a book, news, music? Also: who is offering such a service already? You identified e.g. HelloTalk (good find).
- Textbookshare: As this is about course materials and access to it, buying & selling, sharing information. What are recent trends in course materials (publishers offer licensing models for not just text but learning, exercises, etc)? Where does content come from? Could students write their own notes/examples/content such that it is not a copyright violation to share it (think Wikipedia).
- Spotter: This is about allocation of shared resources in user friendly manner, which is a classic topic with many applications. Check the literature, use analogies (who has a similar problem and how is it solved), broaden the topic (how about the overall gym experience, is this just personal or also about being with friends (invite friends to join?), is this about competition, an opportunity for gamification?. Where does information for occupancy come from: smart devices, students/staff/people (crowd sourcing), camera footage-image analysis-machine learning, wireless access points (counting smartphones connecting to an access point). Who are subject matter experts: students/staff at rec center, people in the athlete program (extreme users). Aside: https://www.cnn.com/2020/11/19/us/gym-ventilation-covid-trnd/index.html used a carbon dioxide detector to estimate occupancy and Covid transmission risk, interesting to see how to come up with sensing tech.

- LaundryCheck: check notes for Spotter, this is about allocation of shared resources in a different setting. Also: think back to the airport gate design challenge in the brainstorming lecture. How could you change the overall experience about doing your laundry at W&M.
- I-Pickup: You can see the parcel pickup as a classical business problem, how to organize a shop, minimize wait times for customers, optimize procedures in the back office / storage with a corresponding body of knowledge (say in the Business school), but you can also think of it as a Design Thinking exercise (like the airport gate design challenge), to address wait times not at the airport gate but at the post office desk. You talked to the USPS manager already, which is great. Who else knows more about this? If you consider analogies, where does something similar happen, but the experience is much better? How could modern tech (smart phones, sensing technology, crowdsourcing) etc help to make this better? How does it work if you order a Pizza online at a Pizza chain and then pick it up yourself, e.g. check the Dominos app for example.
- PlanIt: This is part of student time management. What would be a smart system to help students with time management, what are best practices, check with WM counseling (extreme cases of students with problems and their recommendations, school of ed (techniques for learning, time management for learners), business school (personal time management for productivity), have an AI/ML recommendation system as a backend, students could share if they worked on assignment red/yellow/green from their pov which could lead to a smart acceptable notification system *hey it's 3 days before OS is due, want to get started, 2 office hours left for guidance", or it may have room for gamification (who is first with topic, how difficult is it, how busy are office hours, FAQ), analogy: SW dev and agile: operate a task board, estimate speed, time budget?
- StudyBuddy: similar to Lively and PolgyglotClubhouse, what people match such that they learn well together. Please read notes above from your point of view. In addition, there could be interesting synergy effects: finding other students from same zip code to share a ride (or memories from same high school), finding people who you could not just study with but also do sports with …

4) What is required?
    1) Identify a number of promising publications. Each team member needs to read at least one relevant publication (if it is a longer publications like a MS/PHD thesis, a whole book, at least 1-2 relevant chapters per team member) and provide in writing a short summary of what the publication is about and a list of main findings relevant for your project.
    2) A critical conclusion on what your competitive edge is or should look like, what questions/issues you have do address for your project, what answers you have found for them, if these answers are satisfying and resolve an issue or if you need to look for something better.
    3) Try to make the case for your competitive edge. Nail it down to a concrete, promising solution as much as you can.

Challenge 5: YAP: Yet another presentation (but no video)
We need to prepare for presentations inside and outside of class. Please prepare for a 5 min presentation of your current project as a team. The presentation is planned for the first class meeting after the deadline. Students will provide feedback but also vote on which projects should go forward!

You are expected to address:

- Which problem
    - what is the problem, who has it, the size of this customer segment
    - why customers are determined to solve it, how they solve it right now, what your competitors do about it
- Why you
    - **what is your competitive advantage**
    - why are you the right team to do this, what's your story
- How to solve it
    - **how you address the problem at a conceptual level**
- What can you show right now
    - how does your **prototype for the solution look like** and to what extent is it working
- Why now
    - why the window of opportunity to make this is now (technology is ready, demand is there, competition is weak/unaware/focuses on something else)

As we are moving forward, **I highlighted the aspects that are important to get feedback for, make sure you present these aspects well.**

4) **What is required for your response?**
    1) The presentation, either a slide deck or a link to some online site to access it. If your presentation requires specific software to present it, consider submitting a pdf to avoid potential issues for grading.
    2) You will need to post our slide deck ahead of the presentation in class together with a voting poll similar to the previous assignment.