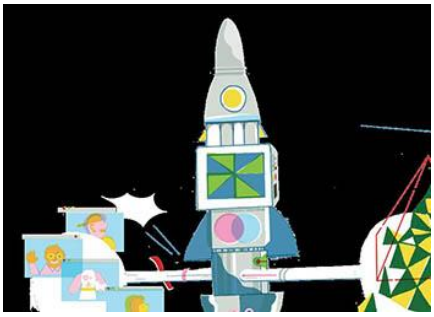
Milestone #7-9: Development & Evaluation



Project: NY SUNWORKS
Project team members: Samantha, Sondra, Bihan, Beiheng

MILESTONE #7:

Activity 7.1: Pick a Development Area to Define 1st Sprint

As a team, you will need to discuss what part of your learning design you will more fully develop and evaluate during this two week "Sprint". Usually teams conduct multiple sprints selecting a finite amount of work to finish before moving on to the next sprint. Each sprint ends with a team 'retrospective' where team members (of with outside facilitation) discuss what worked well as a team, what to keep doing, what to change moving forward. The idea is that teams improve how to work with one another as they do more and more sprints and refine their process as they go.

What you choose to build in any given Sprint will likely be a subset of the entire Learning Design. In this first (and only) sprint, your entire team will be engaged in developing a few aspects of your project that will serve as a 'proof of concept' or beta version for some of your leading strategies and design decisions.

The goal of this Sprint is to be able to have something learners (or "proxy" learners as the case may be) will be able to *experience* and give you *feedback* on in our evaluation phase in Milestone 8. Additionally, you will be developing things you can *show* (vs. just talk about) with your primary stakeholder (real or imagined) so that they might give you feedback as well.

Each team will need to think about how best to accomplish these two goals, whether creating a lesson plan for one of the learning modules, including full details on learning activities, media and assessments. Or whether it's setting up an online community with some sample posts and resources, alongside a 'just in time' or interactive resource or whether its creating 'beta' videos or other media (interactive handbooks,, simulations or assessments, etc), or whether it's setting up a 'course' in an LMS or use e-learning tools like Captivate or Storyline to create interactive activities. There is no right or wrong, just think about the two goals mentioned above as your guide in what to select.

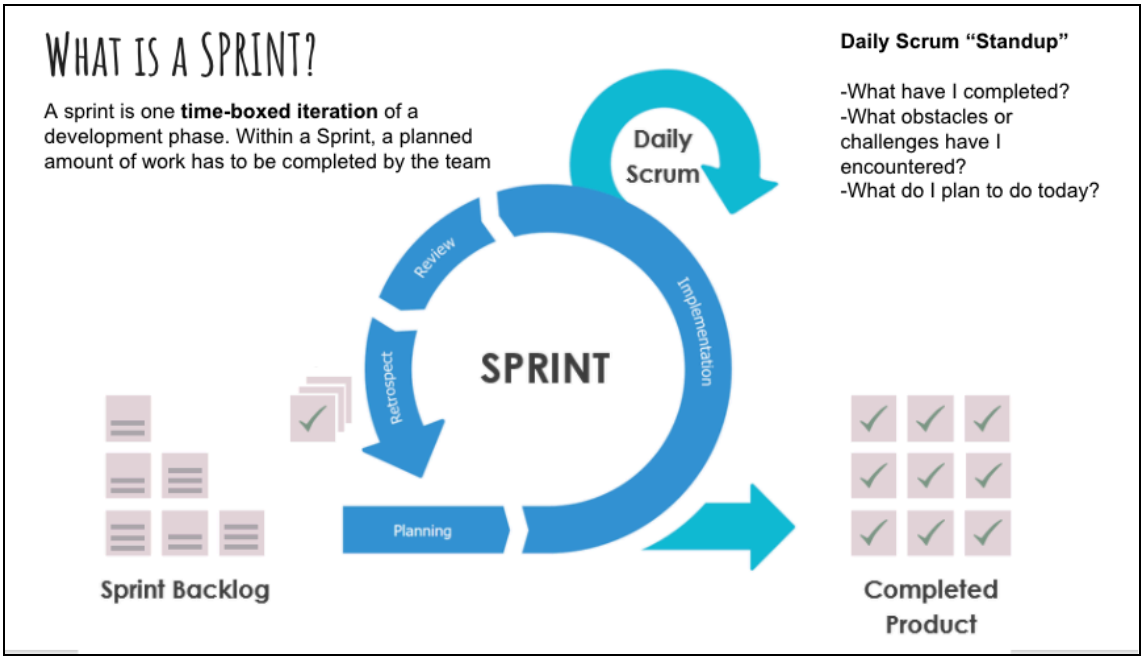


Figure 1: What is a Sprint? (visual-paradigm.com)

This decision of *what* and *how much* you build should consider following:

1. **Feasibility**: As a team, take (or revisit) the inventory of the skills you have among your team. Also, what are your interests in developing new skills? (for example, do some of you already have video editing skills? Are some of you good at exploring and perhaps setting up different platforms or tools that might useful?) THIS SHOULD BE AN ALL HANDS ON DECK SPRINT. Everyone should expect to actively participate.

   Tip #1: Keep in mind that while you don't want to engage in a HUGE learning curve, this is an opportunity to step into unfamiliar territory. As you'll see in next activity, you'll keep in close touch with your team about your progress and obstacles/roadblocks. This sprint can be flexible and if needed, you change course or collaborate with those on team who might help you out if you get stuck. In short,, be confident in your ability to explore new skills, embrace uncertainty. We're aiming for betas and prototypes, not perfection.

2. **Scope**: The effort involved might be unknown at this point, but that's ok since you'll break down and prioritize the tasks associated with the build in the next step in this milestone. In doing so, you may find that you only get through half of what you planned. So just take a guess at what your team might be able to accomplish. And don't worry about being too ambitious. Again, you can always cut back if needed.

3. **Relevance to your Goals/Objectives:** Since the goal of this sprint is to get feedback from your learners and primary stakeholder, it's ideal (not required) to pick the parts of your design that your team feels are most likely to serve your goals/objectives (or at

least some of them). However, Feasibility and Scope are of course also important so try to find a good balance.

Activity 7.2: Create Kanban Board and Decide How /When to Update It

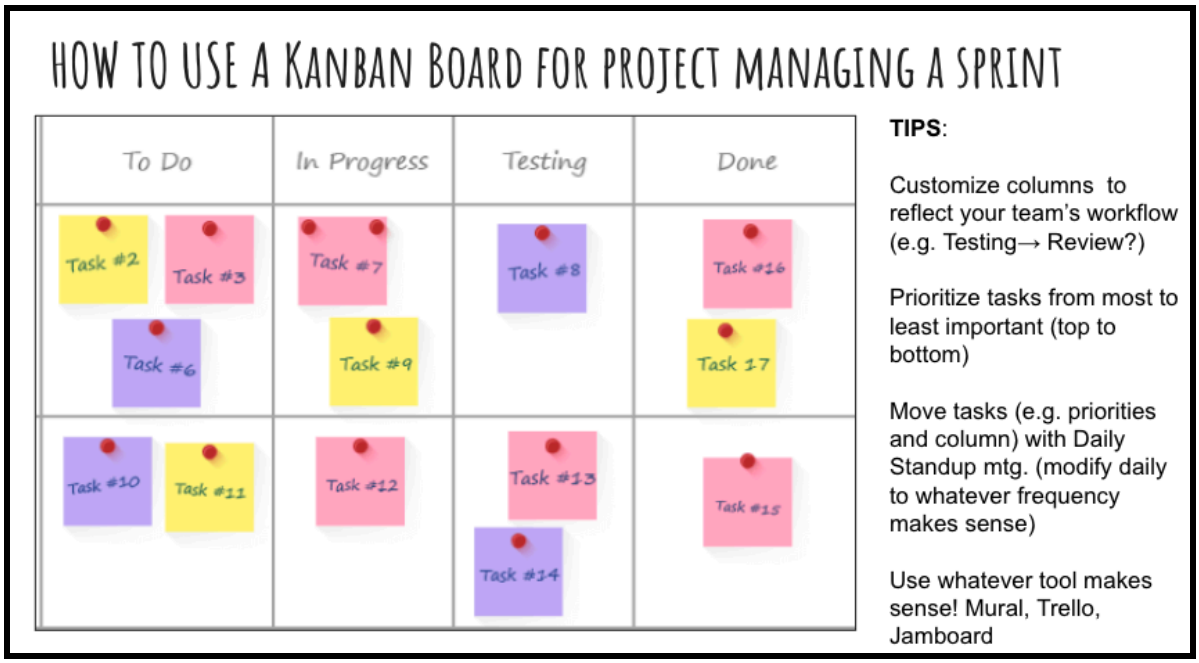
After deciding what to work on, your team's job now is to break down the work into tasks and figure out who does what. You'll put these tasks on your Kanban board under the **To Do** column. You can use Trello for this, or any other project management tool or "whiteboard" tool (e.g. Jamboard, Mural). Make sure everyone has access to this board..

Using the **Kanban board format,** place one task per box though you might want to group tasks that make sense to group. For example, in creating a sample video, the team might group four tasks related to creating a video. For example, tasks might include:

1. Creating a storyboard for the video (your team might discuss how to approach this task and add notes or even resources to the task card--- e.g. see this how to create a video storyboard article)
2. Creating the full narration script (this likely elaborates on the storyboard, with links to images or video, footage or titles that will be included)
3. Record the narration
4. Create video, integrating narration, background music, images and video, titles etc

Once you have these 4 tasks identified, put them on the kanban board, in order from top priority to bottom and/or indicate where there are dependencies by numbering the tasks related to video production (e.g, storyboard must be completed and reviewed before other steps can be completed, etc).

You can then assign who does what. You might decide to work in pairs, or you might divide and conquer and work alone. Keep in mind that one of your columns is likely "Review" so you'll have others on your team looking at work that has been completed. After review, the task may go back to "In progress" with notes of stuff to change" before it goes into the 'DONE' column.



The "Scrum or Standup Meeting"

If you are not familiar with this critical communication method while teams are in rapid development mode, read more about this method here.

You will likely modify this daily scrum meeting format to suit your team (e.g. meeting every x days instead of daily, posting updates on slack between meetings, etc). That said, the purpose of these high frequency communication points is to keep each other up to date without spending a lot of time in long meetings or having to write and read piles of status reports. It focuses on quick discussion of progress, plans, and problems. The main purpose of the meeting is to let the members of the group quickly understand of:

- What each person did yesterday
- What they are going to do today
- If there are any obstacle
- If they need any assistance

Before moving on to Activity 7.3, decide as a team:

1. What are the tasks? Who will do what?
    a. Sam – community forum designs, Timeline: seed to mature plant photos
    b. Sondra – revised text and formatting manual, reorganizing TOC, redesigned NFT system diagram and related pages, redesigned seeding pages
    c. Beiheng – glossary
    d. Bihan – redesigned crop calendar, redesigned video tutorial
2. What tool will you use for the kanban board?

    a. Trello

3. What columns will you have on kanban board, and what do each mean? (for example, if you have a 'review column' will the team review collaboratively during the meeting, or will you do review via Slack? What is expectation for turnaround time on review? Who is expected to review?)
    a. To-Do: Tasks that have been assigned to the team and have not been started
    b. Doing: Tasks that have been started and are a work in progress
    c. Review: Tasks that have been completed and need to be reviewed by the entire team
    d. Done: Tasks that have been approved by the team during the review phase
    e. Previously completed: Tasks unrelated to the sprint that have already been completed

4. How frequently will you meet?
    a. Daily updates in Slack and full meetings on Sundays at 12pm

5. What is the format and activities of the meeting? What is length? (it's often recommended that you keep meetings frequent but short, for details and ideas read more here., you might also look up tips for remote scrum meetings)
    a. Using Zoom audio, round robin updates from each member
    b. About 45 minutes meeting (Sundays)
    c. Next steps and delegation

6. Who will facilitate these meetings?
    a. Project manager

Activity 7.3: Develop stuff and Update Kanban Board

Now for the fun part. Get to work. Meet frequently as a team to update Kanban, share progress, challenges, etc. Use asynchronous communication as well (e.g. email/slack/shared google docs, whatever your team thinks is best). Ask each other, class peers and me for help. Don't be a perfectionist. Embrace uncertainty and failure (and remember nothing is a failure if you learned something).. Share obstacles and what you need help with openly and honestly.

Resources available to you:

- LinkedIn Learning: To learn how to use media production software (free to NYU students)
    - Explore E-learning tools, video editing, simulations, prototyping tools- e.g. Figma, etc.
- How to Youtube videos
- Use NYU library resources to search for articles on best practices (e.g. educational video production) or e-books on certain topics/skills
- Skillshare.com (free for 14 days!)

- Ask for help from peers, me (via course slack channel), for peers you might offer a Give/Ask format. Hey, anybody know some good resources for x? Can anybody show me how to y?

Be prepared to share kanban board and progress in class on Tuesday, April 13.

MILESTONE #8: Evaluation

As you can see from the illustration on the right, evaluation is (ideally) included in each phase of the design process. The next set of activities will help your team more holistically think about the evaluation questions and methods you would use to determine if/how the learning design was effective, efficient and appealing.

Activity 8.1: Create a Comprehensive Evaluation Plan

For this activity, you will create a **comprehensive plan** for your evaluation that includes formative and summative evaluation in an imagined future where you have finished and fully implemented your design. In next activity (8.2) you will pick a small subset to execute in the next week.

Please review this summary of evaluation models and methods, or see class readings from Week 10-11..

Evaluation plans usually include four components:

1. **QUESTION EVALUATION WILL ANSWER:** What do you want to know? Usually this will fall into categories such as:
    a. Usability: How well does it work? What are learner reactions?
    b. Conceptualization: is the project conceptualized in a way that SHOULD work? You should refer to logic model to evaluate the assumptions about various relationships, e.g. activity→ output
    c. Process: How did your design process play out? Were outputs in various phases useful? How might your process (e.g, outputs, how team functioned) be improved
    d. Effectiveness: Did students learn, did learning transfer, etc

2. **JUSTIFICATION FOR QUESTION**: Why is this important? Who will be interested in results? (are you sure results will be valued, purposeful and meaningful?)

3. **METHODOLOGY**: How will you find out? (think about using multiple methods for triangulation, identifying tradeoffs between rigor/precision vs. practicality/feasibility) Reflect on why you are choosing your methods

4. **CONDUCTING EVALUATION METHODS:** How will you gather data and analyze results?

5. **REPORTING**: How will you report on findings?

Start by thinking about the **first three components above**. Define at least 1-2 evaluation questions in all of the categories mentioned above (usability, conceptualization, process, effectiveness). For ideas/help with this, refer to: Dirksen Chap 12, evaluation models and methods and UX methods

QUESTION EVALUATION WILL ANSWER: **What do you want to know?**	**JUSTIFICATION FOR QUESTION:** **How will answering this question be useful? For whom?**	**METHODS:** **How will you find answers to questions?** (be specific with what method you are using and why)
[EXAMPLE] How did students experience the module design? Where can we improve ● the instructions on self-paced activities ● amount of content ● Video design ● Use of flipgrid	[EXAMPLE] This early stage usability testing will help design team improve the design	[EXAMPLE] **Usability test:** we will conduct a usability test with 3-5 learners, using a combination of observation (with prototype and think aloud) and interview. Observation will help use see where the issues are but interviews can help us ask questions about things that aren't represented in the prototypes or ask learner to elaborate on things we/they observed.
Did the learners (teachers) learn the right answers? ● Can they turn on/off the NFT? ● Can they add nutrients to the water, as well as test, read, and adjust the meter levels?	Effectiveness: This will help us determine if we've included the necessary information in the manual, for example. If not, we can adjust as needed.	**Usability Lab Studies:** The teacher would read one part from our manual. NYSW meets with the teacher at the school lab and asks them to perform a task from start to finish, thinking out. To observe, we would film this activity to see where the teacher got stuck.
Do we have enough content? Too much? ● Missing topics from original guide (valves, lighting, timers) ● Too much info (compositing, aquaponics)	If we expect the manual to be the go-to resource for users, is there enough content to make that happen? Is there so much that it's overwhelming/confusing?	**Focus Group**: Choose 3-4 teachers to talk about their experience with the old manual and the new interactive guide. They would give verbal feedback before and after provided scenarios. Teachers would gauge whether there was too much or too little information, and if they would want to (couldn't) refer to this manual for reference.
Do the QR codes lead to resources the users found helpful/relevant?	We can adjust the resources to meet users' needs before deploying.	**Remote Usability Studies**: We would have NYSW team use the manual and we would record their clicks on their phones and while thinking aloud to make sure there are no missing content or broken links.
Are learners using the community forum to ask and answer questions, share their experiences, etc? Do adjustments need to be made to make it more appealing or user-friendly?	We can modify the forum to make it easier to use or more appealing to test-users before our real users have access to it.	**Clickstream Analysis:** Each test user will be given a login and 2 weeks to participate in the community forum. We will gauge how often they visited the site, how long they spent on the forum, how many clicks to view comments, number times they commented on a post, number times they began a thread. We would need to decide

		ahead of the test, what are the appropriate ranges for each of these scenarios and if the users fell below this threshold.
Are the instructions clear? Are users able to identify and troubleshoot independently?	Our goal is to allow our learners to be able to take charge of their systems without needing to rely on NYSW. If instructions aren't clear and they can't meet that goal, we need to adjust in the early stage.	**Field Studies:** Users would meet with a researcher through Zoom and the observation recorded. Since most teachers learn while at home or outside of classroom time, we would want to have them talk aloud while reading through the manual. Which instructions are not clear and could be communicated more clearly?
Do teachers feel comfortable and confident in their abilities to maintain the lab knowing they have this guide as a reference?	Hannah and Kristen mentioned that they want teachers to feel confident in their skills and to feel that it's ok to make mistakes. We are focusing less on recall and more so on the comfort levels of the teachers knowing that they have a guide with all the answers if they need it.	**Customer Feedback Survey:** We would provide 5-7 questions that rate their comfort levels before using this manual and after. We would show one section from the old guide and compare it to the new guide. In an open ended question, we would have them describe what works in the new guide.
Do the new interactive features enhance the learning experience? Or do they impede the facilitation?	We must make sure that the new interactive features will help transfer knowledge and not inhibit learning.	**Participatory Design:** We would show the new interactive tools and ask the teachers to verbalize how these tools help them to understand the lab processes. Which components are more helpful? Can any components be combined with another tool? Which tool is more aesthetically-pleasing than beneficial?

Activity 8.2: Conduct Evaluation

Our goal in this class is to practice running 1-2 of the methods you've identified so that you can gain experience planning, analyzing and reporting out on your evaluation.

Plck a few methods from list above that you feel you could do based on the development work you've done on your project. Create a **specific plan** for how you will carry out the method(s).

NOTE: if you don't have access to target learners, you can use peers as "proxies" for your learners. We'll also spend some class time on this activity.

Plan should include details::

- Recap: what is method
- If applicable, what are the questions you will ask, or the survey questions you will include?
- Who will participate? How will you conduct it? (step by step process)
- How will you analyze results?

METHOD	Email Survey
QUESTIONS TO ASK: On a scale of 1-10, one being worst and ten the best...	1. How would you rate the **clarity** of the seeding instructions in Guide A? 2. How would you rate your **comfortability** using this reference to perform seeding in Guide A? 3. How would you rate the **clarity** of the seeding instructions in Guide B? 4. How would you rate your **comfortability** using this reference to perform seeding in Guide B? 5. Compare graphic A and B - which graphic improved your understanding of plant growth phases? 8. Open ended question: ● Was there anything in Guide B that was confusing or unexpected? ● How would you suggest improving Guide B? 9. Additional comments, thoughts, or ideas?
PARTICIPANTS	Ideally we would have liked to ask NYSW teachers to answer our survey questions, but we will ask 3-4 DPL classmates to perform the survey.
CONDUCTING	1. We will first present the previous guide by NYSW to the 3-4 users, but we will label this "A" and not tell them this is the old guide. 2. We will have them look at the seeding portion. 3. Then we will present our guide called "B" and not tell them this is the new guide. 4. They will then look at our seeding chapter. 5. Last, we will ask them to answer the email survey questions to rate their comfortability using the old and new guide.
ANALYZE RESULTS	Using the scales of 1-10, one being the worst and ten being the best, we would tally up the scores in questions 3-7. The best scenario would be the 50 points, but we would like anything from 30+ points because there is always room to improve. The open-ended question would address any technical issues with the interactive pieces or content requiring more clarification. Also, there will be a space for additional comments or design thoughts. In the affinity map, we will sort users' answers into different categories and using the results to improve the final design.

Activity 8.3: Analyze Results

As a team, analyze results. You may wish to use affinity mapping for this, using Mural or Jamboard.

- How will you analyze results? (please list step by step process)

MILESTONE #9

Evaluation Report, Final Presentation, Website Updates & Final Challenge Project Submission

Activity 9.1: Evaluation Report

EVALUATION REPORT

Based on analysis from Activity 8.3 above, your team will create a mock evaluation report. Since you've only had time to implement a small portion of your full evaluation plan, please use this opportunity to practice writing a report rather than worrying about how comprehensive it is. Make sure to define the audience for your report!

Format of your Evaluation Report
(see Brown & Green. The Essentials of Instructional Design, pg 166 for more details)

- Audience
- Evaluation purpose : • evaluation issues— stated as questions • description of the instruction being evaluated.
- Methodology used : • methods • participants • instruments used to gather data.
- Results : • analysis method • findings.
- Conclusions and recommendations

TIP: "It is important to remember that the purpose of the evaluation is to provide recommendations based on the data collected.. be certain to highlight the conclusions and recommendations". (Brown & Green, pg 166)

Activity 9.2: Final Class Presentation (4/27)

Refer to Final CP Submission Rubric for guidance on next few activities.

This final presentation should be 10 minutes total, leaving 5 minutes for discussion/feedback. As previous presentations, feel free to present using your team website (assuming it's updated and ready to be used for that purpose), or create an accompanying slide deck for the presentation. Please cover following sections, making sure to practice so that the time does not exceed

overall 10 minutes. If needed, cut back superfluous details and share what you feel is MOST interesting and relevant!

~1 minute: RECAP (just to refresh our memory): the problem/need/opportunity, learners, and goals/objectives of your project, highlighting anything that changed since last presentation, if applicable.

3-4 min: Your solution, including 1) the big picture (highlighting changes you made since last presentation) and 2) the part your team developed. Please go through the design as if you were the learner going through the learning experience (e.g. what would they be doing, what instructional materials and instructions would they encounter, how would the facilitator/educator/tool provide supports and when would that happen, what would they ideally be learning, feeling, processing). Highlight at least 5 important learning design decisions and your justification/ rationale for the way you designed it.

2-4 minutes: Your evaluation plan & mock report (from activity 8.1 & 9.1 above), including 1) brief overview of holistic plan from activity 8.1r. 2) Evaluation report (on small portion of full plan from Activity 9.1 above)

2-4 min: Your team's ideal 'design process model'- . This is a chance to have fun, discuss as a team HOW you would tackle this project if you were to do it again. Look back at Week 2 for examples of models. In creating your own model (feel free to name it if you want), how would you approach the design process in a more ideal environment. (how long for each phase, what steps would you take within each phase, where sequence, how recursive vs. linear). Make sure to include some of the specific steps included in a typical LEARNING DESIGN process (e.g. learner/content/context analysis, establishing learning goals and objectives, designing learner assessments, instructional strategies, activities, materials, evaluation etc).
This is a chance to discuss what parts of the design process you would KEEP, CHANGE, or REMOVE if you were to do start from scratch.

2-3 min: ***Optional*: concluding thoughts, reflections on aha moments or lesson learned!** Each team member should try to make a few connections between your things you learned in doing this Challenge project and goals of course, go back to Course overview if needed. If you don't have time to present this in class, you can include in your team website.

Recap (1 min)
Solution (3-4 mins)
Evaluation & mock report (2-4 mins)
Ideal design process model (2-4 mins)
Reflections (Optional, 2-3 mins)

Activity 9.3: Team Website Updates

Update existing sections as needed.

Add new sections:

Development - Embed screen shots and/or include links to SHOW what you developed. Annotate what you designed, highlighting design decisions, tying it back to your design rationale, and including any other relevant details to help audience understand

Project Management (Sprint) - Include a description of your team's project management strategies and process (e.g. how did you divvy up tasks, roles, communication strategies. OPTIONAL: Include screenshots of meetings, kanban board, etc.

Evaluation Plan

Evaluation Report

Your teams' personalized **Design Process Model** (with explanations of relevant features)

Final Reflections (each team member should try to make a few connections between your things you learned in doing this Challenge project and goals of course, go back to Course overview if needed)

Activity 9.4: Final Challenge Project Submission

Incorporate final changes to your team Website and send the link to me via SLACK COURSE CHANNEL by END OF DAY EDT, Tuesday, 5/11.

IMPORTANT NOTE: If resubmitting earlier ANALYSIS and DESIGN SECTIONS please also include in your SLACK POST a link to the original RUBRIC I sent to your team, with your notes indicating what was changed. (if you wish to keep rubric private, simply don't change permissions)

Of course, I'm not expecting that you incorporate all my suggested changes as stated in the earlier rubric, but in areas marked approaching or weak, I need to know what- if anything changed - so that I can revisit those areas in rescoring the rubric for those sections.