

## Milestone Four

Voltron

Comma

### Heuristic Evaluation:

- **Visibility of system status:** The 'summary' widget of the application updates and displays the update each time the user inputs new data.
- **Match between system and the real world:**
- **User control and freedom:** The user is free to perform any action or access any resource at all times and is widely not restricted in the application. Many users might appreciate this freedom, but those who are inexperienced with technology might be negatively affected by the lack of guidance.
- **Consistency and standards:** Attributes of this application act as expected in similar situations.
- **Error prevention:** The user is given clear prompts, and color-coded options in icons like the calendar in order to maximize visibility and minimize potential errors.
- **Recognition over recall:** Once the user creates an account and logs into Comma, the application stores all of their information in order to continually update the user's statistics. This effectively prevents the user from having to log-in again every time they open the application, by keeping them logged in until they make the decision to log out. Additionally, by having an account, all previously entered information by the user remains within the knowledge base.
- **Flexibility and efficiency of use:** The user can perform any action at any time. This application provides the user with a flexible as opposed to sequential experience. While this adds to the design flexibility, it likely costs efficiency by allowing the user to guide themselves through the application instead of being guided.
- **Aesthetic and minimalist design:** Previous designs of Comma received feedback about color schemes and widget sizing which have been taken into account for improvements. This design adheres to the Gestalt principles well.
- **Helps users recognize, diagnose, and recover from errors:** Once the user enters information into the application, the information is immediately displayed. If the user notices that they have made a mistake in their entry, they are able to delete the entry and make a new one, but are not allowed to edit previous entries.
- **Provide suitable help and documentation:** The help and documentation provided are adequate.

### Cognitive Walkthrough:

#### Roles:

- **Instructor:** One Voltron team member, representing an expert to the interface who prompts the tester throughout the walkthrough with instruction and help when and if needed.

- **Observer:**Voltron team member(s) who observes the tester throughout the walkthrough in order to gather observable data on the user experience at each point in the process.
- **Tester:** A member of the target user group with no prior experience of the interface whom performs actions at the prompting of the instructor and is observed by the observer.

**A few metrics which the Observer is considering:**

- Time taken to perform task
- Number of errors made
- Number of times help was required
- Visible signs of frustration from tester

**Instruction**

- In our instruction phase, the Instructor prompts the Tester with the following, “Hello! The prototype you are about to experience is a product of the Voltron Project, and is a mobile application called Comma. We greatly appreciate your participation in this evaluation, and would like to make known that the purpose of this evaluation is to test the design, not you. Comma has been developed as a tool for women to promote their feminine health by providing a variety of functions to track their bodies as well as providing informational resources. In this evaluation, you will be asked to perform multiple tasks using this design so that we may identify potential improvements to be made. Once again, it is the design that is being tested in this evaluation.”

**Tasks**

- 1. You woke up with a headache this morning. Record this in the application.
- 2. Find the day at which your next cycle will start
- 3. Set a daily alarm to take your contraceptive pill.
- 4. Set a reminder to refill your prescription on June 16.
- 5. Edit which contraceptive method you’re currently using.
- 6. Report a problem

We chose these tasks because they incorporated the functionality that is most important in our application. We wanted to focus on symptom tracking, discrete reminders, cycle tracking, and contraception.

**Results**

- Participant 1
  - Demographics:
    - Age: 43
    - Marital Status: married
    - City: Memphis, TN
    - Race: White
    - Profession: Homemaker
  - Task 1: 33 sec

- Participant was confused if she was “supposed to pretend it was today’s date when recording the headache. The instructor had to intervene and tell her this was okay.
  - Task 2: 20 sec
    - Participant at first appeared frustrated/confused by the green and red circles on the calendar but soon understood what they stood for.
  - Task 3: 32 sec
  - Task 4: 30 sec
  - Task 5: 32 sec
    - Participant pressed return instead of clicking.
    - The method of birth control didn’t actually change after she had tried to change it.
  - Task 6: 16 sec
  - # errors: 2
  - # times needed help: 1
- Participant 2
  - Demographics:
    - Age: 21
    - Marital Status: single
    - City: Atlanta, GA
    - Race: White
    - Profession: Student
  - Task 1: 33 sec
  - Task 2: 31 sec
  - Task 3: 28 sec
  - Task 4: 34 sec
  - Task 5: 34 sec
  - Task 6: 13sec
    - Couldn’t use the scrolling feature of the help
  - # errors: 0
  - # times needed help: 0
- Participant 3
  - Demographics:
    - Age: 16
    - Marital Status: single
    - City: Atlanta, GA
    - Race: Hispanic
    - Profession: Student
  - Task 1: 28 sec
  - Task 2: 15 sec
  - Task 3: 11 sec
  - Task 4: 8 sec
  - Task 5: 22 sec

- Participant clicked information at first instead of 'my profile'.
  - Task 6: 12 sec
  - # errors: 1
  - # times needed help: 0
- Participant 4
  - Demographics:
    - Age: 21
    - Marital Status: single
    - City: Charlotte, NC
    - Race: White
    - Profession: Student
  - Task 1: 22 sec
  - Task 2: 14 sec
  - Task 3: 33 sec
  - Task 4: 31 sec
  - Task 5: 28 sec
    - Participant clicked information at first instead of 'my profile'.
  - Task 6: 8 sec
  - # errors: 1
  - # times needed help: 1
- Participant 5
  - Demographics:
    - Age: 38
    - Marital Status: married
    - City: Atlanta, GA
    - Race: White
    - Profession: lawyer
  - Task 1: 26 sec
  - Task 2: 19 sec
    - Participant was confused about what the red and green circles represented at first.
  - Task 3: 22 sec
  - Task 4: 28 sec
  - Task 5: 32 sec
    - Participant went to 'information' first instead of 'my account'.
  - Task 6: 19 sec
  - # errors: 2
  - # times needed help: 1
- Participant 6
  - Demographics:
    - Age: 26
    - Marital Status: single
    - City: Atlanta, GA

- Race: Black
    - Profession: Bankteller
  - Task 1: 19 sec
  - Task 2: 21sec
    - Participant clicked on symptoms instead of tracker but quickly recovered from this mistake.
  - Task 3: 26 sec
  - Task 4: 14 sec
  - Task 5: 28 sec
  - Task 6: 15 sec
  - # errors: 1
  - # times needed help: 0
- Participant 7
  - Demographics:
    - Age: 31
    - Marital Status: single
    - City: Valdosta, GA
    - Race: White
    - Profession: Cashier
  - Task 1: 24 sec
  - Task 2: 21 sec
  - Task 3: 30 sec
  - Task 4: 24 sec
  - Task 5: 37 sec
    - Participant immediately clicked on 'view my summary' instead of seeing that the current birth control method was already displayed.
    - Participant then had difficulty seeing how to get back to the home screen because the home icon was not in the usual place.
  - Task 6: 23 sec
  - # errors: 1
  - # times needed help: 0
- Participant 8
  - Demographics:
    - Age: 21
    - Marital Status: single
    - City: Atlanta, GA
    - Race: White
    - Profession: Cashier
  - Task 1: 17 sec
  - Task 2: 18 sec
  - Task 3: 21 sec
  - Task 4: 23 sec
  - Task 5: 21 sec

- Task 6: 12 sec
  - # errors: 0
  - # times needed help: 0
- Participant 9
  - Demographics:
    - Age: 46
    - Marital Status: married
    - City: Austin, TX
    - Race: White
    - Profession: Teacher
  - Task 1: 22 sec
  - Task 2: 14 sec
  - Task 3: 17 sec
  - Task 4: 28 sec
  - Task 5: 30 sec
    - User clicked on 'information' instead of 'my profile' but quickly recovered.
  - Task 6: 8 sec
  - # errors: 1
  - # times needed help: 0
- Participant 10
  - Demographics:
    - Age: 65
    - Marital Status: married
    - City: Atlanta
    - Race: Hispanic
    - Profession: Child-care specialist
  - Task 1: 31 sec
  - Task 2: 18 sec
  - Task 3: 29 sec
  - Task 4: 27 sec
  - Task 5: 18 sec
    - Participant pressed return instead of clicking.
  - Task 6: 14 sec
  - # errors: 1
  - # times needed help: 0
- Averages
  - Task 1: 25.5 sec
  - Task 2: 19.1 sec
  - Task 3: 24.9 sec
  - Task 4: 31.1 sec
  - Task 5: 28.2 sec
  - Task 6: 14 sec
  - Average # of errors per participant

- Average # of times help needed per participant

### **Predictive Evaluation (KSLM):**

- 1. You woke up with a headache this morning. Record this in the application.
  - $P + P1 + P + P1 + P + P1 = 3(1.10) + 3(0.20) = 3.9 \text{ sec}$
- 2. Find the day at which your next cycle will start
  - $P + P1 = 1.10 + 0.20 = 1.30 \text{ sec}$
- 3. Set a daily alarm to take your contraceptive pill. ("birth control")
  - $P + P1 + P + P1 + 4K + 7K + 13K + P + P1 + P + P1 = 4(1.10) + 4(0.20) + 24(0.35) = 13.6$
- 4. Set a reminder to refill your prescription on June 16. ("refill prescription")
  - $P + P1 + P + P1 + 4K + 7K + 18K + P + P1 + P + P1 = 4(1.10) + 4(0.20) + 29(0.35) = 15.35$
- 5. Edit which contraceptive method you're currently using (typing 10 letters for birth control)
  - $P + P1 + P + P1 + 10K + P + P1 = 3(1.10) + 3(0.20) + 10(0.35) = 7.4$
- 6. Report a problem (typing 20 letters to describe problem)
  - $P + P1 + P + P1 + 15K + P + P1 = 3(1.10) + 3(0.20) + 15(0.35) = 9.15$

### **Retrospective Testing Interview:**

- **Process:** For a few of the people who performed the cognitive walkthrough evaluation, videos of the evaluation were taken. Then, the evaluator and the observer from the team asked the participants questions about the participants thought processes during the evaluation in order to gain a better idea of where potential problems in the app were occurring.
- **Results:**
  - Participant 5:
    - Participant 5 appeared to have trouble in understanding what the red and green circles meant in the calendar in regards to finding the end date of her last cycle. I asked the participant how we could improve this aspect of the app. She said that because it was her first time using the app, she was unfamiliar with how these things were to be represented but she quickly understood what the circles were supposed to indicate. I then asked if there was any feature we could add that would make this more intuitive. She said that maybe if clicking on the circles prompted a sort of pop-up window that said something like "period ended: 04/29/2019", it could be helpful.
    - In task 5, the participant immediately clicked on the 'information' icon instead of the 'my account' icon, which brought her to the wrong page. After perusing this page for a few seconds, she turned back to the home page and found the information about which birth control method she was currently on. I asked what her thought process was at the beginning of this task. She said that she thought 'my account' would have more to do with her subscription to the app and settings about her account rather

than information about women's health. After the information she was looking for was not present in the information tab, she looked to the my account tab next. I asked how we could make this aspect more intuitive and she said that the current method of birth control should either go in the information tab, or the tabs should be renamed.

- Participant 7:

- In task 5, participant 7 clicked on my account but instead of seeing that the current birth control was already displayed, she clicked 'view my summary'. This screen says it has not currently been implemented yet and it took her a few seconds to figure out how to return back to the homepage. I asked her what caused any potential confusion in that aspect. She said that because there wasn't the usual home button icon in the lower left-hand corner like there usually is, she had a little trouble figuring out how to return. This is something that will be fixed in future models, however, when this page is fully implemented. I then asked why she immediately clicked 'view my summary' and she said that the current method of birth control displayed didn't catch her eye and that her attention immediately went to 'view my summary', which she assumed contained information about her current method of birth control.

### **Think-Aloud Evaluation:**

- **Process:** For this evaluation, the same introduction was read as for the cognitive walkthrough, and testers were given the additional instruction to "think aloud" throughout the entire evaluation. The testers were then reassured that again, it is the design being tested and not them, and were encouraged to keep a constant stream of thinking aloud. In this scenario, the instructors played the additional role as coaches, encouraging the testers to keep speaking aloud at all times. A voice recording was taken with consent of each participant to allow for further thought evaluation later on. The tasks that the users were asked to perform were the same as those used for the cognitive walkthrough evaluation.
- **Results:**
  - From the first task, the users noted that there was no feedback to let the user know that the symptom was successfully logged. Upon noticing this, the user then tried to access the working symptom history tab which needs to be implemented.
  - The user was able to complete the second task with no trouble.
  - From the third task, users said that the reminder was easy to set, but again there was a lack of feedback to tell the user that the alarm was successfully added. The new alarm does not appear in the list.
  - Again feedback was an issue in the fourth task.
  - In the edit the active contraceptive task, users had significant difficulty finding where to make this happen. The BC: title was confusing to users and not easy to spot. Again feedback is an issue here as the active birth control method does not change



- In the final task, users noted that they noticed the report a problem button when completing other tasks, making this task easy to complete. Users noticed that text does not wrap properly within the text box given and again feedback was an issue as users were unsure as to whether or not the problem had been successfully reported.
- When asked to give overall comments, users had the following to say. They were unsure about hitboxes for buttons within the application. They weren't sure how accurate they needed to be with their clicking in order to make things happen. They thought the My Account page was misleading as it is involved with the actual functionality of the app. It was suggested that there be a separate page for account info such as email and name, separated from the information related to birth control and symptom management. It was suggested that in the tracker, the boxes representing days until start of the next cycle be filled with a soft green to give the user a visual. It was suggested that the app provide the user with an estimated date of ovulation and to provide the user with a calculation for their risk of getting pregnant. Finally, users suggested that the app provide options and information for other forms of birth control besides oral. While the application is not complete and these are things that would be implemented in later editions, it is important to note that these were things noticed by users.
- Based on the results obtained from the think aloud evals, the most important thing that needs to change is the feedback features. Users need to see and feel when the actions that they are performing actually occurred in the system. Users mentioned that they liked the design of the application. They noted that the colors were clean and simple and that things were easy to read. They liked the large button main screen, and that it was easy to see your options. Overall they liked the simplicity of the design and how things aren't cramped or convoluted.
- If we had more time to continue this design, we would implement many of the above ideas. We would have to continue updating and testing with users to see how exactly to implement the new ideas and which ones are the most efficient. The major issue we had with Milestone 3 was that although a lot of the functionality was implemented, a few things were not able to actually make changes which is confusing for the user testing. The most stated problem was with the My Account screen. Users said that it was misleading because they felt that the information should be separated.

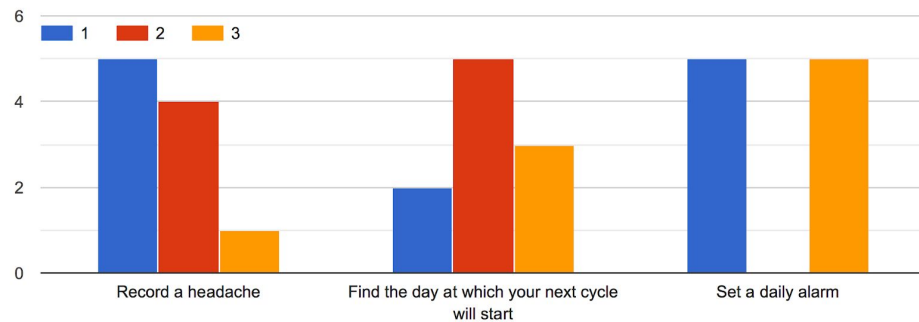
### **Questionnaire:**

- Questions:
  - 1. Rank which tasks easiest to hardest (rank)
  - 2. What are three positive aspects of the app? (open ended)
  - 3. What are three negative aspects of the app? (open ended)
  - 4. Would you recommend this to a friend (yes/no)

- 5. The organization of things on screens is easy to understand (disagree to agree)
- 6. The interface is pleasant (agree scalar to disagree)
- 7. Which feature do you think has the potential to be most helpful to you (multiple choice)
  - Reminders
  - Cycle tracking
  - Birth control information
  - Symptom tracking
  - I don't think any of these would be helpful
- 8. Do you have any suggestions for additional functionality? (open ended)

● **Results:**

Rank which tasks were easiest(1) to hardest(3).



○

## What are 3 positive aspects of the app?

10 responses

Based on the home screen I knew where to click for each of the tasks right away, it seems to cover all the major aspects involved in having a period, it's simple

convenient, helpful, and effective

easy to navigate, good home page with all the different options, not convoluted ways to get to different aspects of the app

I like the coloring, I liked the set-up of the home screen, and I liked the ability to track symptoms.

I liked the icons in the home page, the ability to remind myself to take my birth control, and the ability to see when my past cycles were.

I liked the simple look of the app, think the features could be helpful, and how they included a help button for any problems I might have.

I liked the ability to set reminders, the pleasant colors, and the icons.

easy to record symptoms, easy to use the calendar feature, easy menu to navigate

I liked the easy to learn set-up, I liked the variety of symptoms to add, and I liked the simplicity.

I liked how the home screen was just big simple icons, I liked how you can track your symptoms, and I like how it will help me remember when my past cycle was.

○

## What are 3 negative aspects of the app?

10 responses

when you change something it does not save it, it's a weird color, the clicker is funny and too big

i don't like the colors, help section is confusing, and the date icon is small

the daily alarm could be better,

I am unsure if I would trust this app with all of this personal information and I wish there was a way to customize it more.

I didn't like the coloring of the app and I was concerned about giving an app such personal information.

I did not like the green color, I think I would feel more trusting in an app with more professional colors.

I did not like having to select the date for when my period would come and I did not like the app having information about what type of birth control I use.

the interface could look more modern, hard to set a reminder

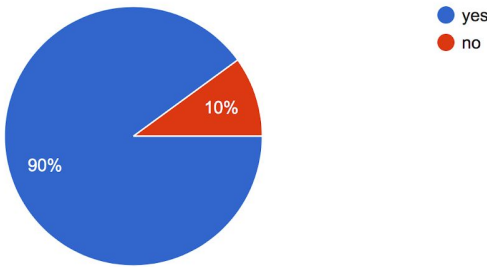
I did not the design but I can't think of anything else that I did not like other than the app potentially taking up more space on my phone than it was worth.

The trouble of entering symptoms doesn't seem like it would be all that worth it, the simplicity of the design seemed a bit unprofessional, and I am confused why having your birth control type would prove beneficial to anyone.

○

Would you recommend this app to a friend?

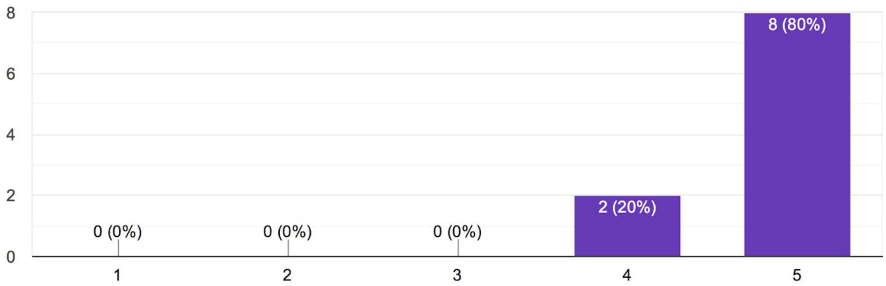
10 responses



○

The organization of things throughout the app is easy to understand.

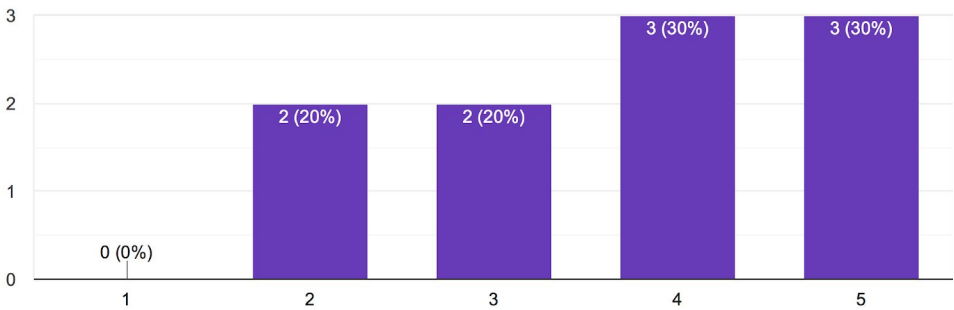
10 responses



○

The interface is pleasant

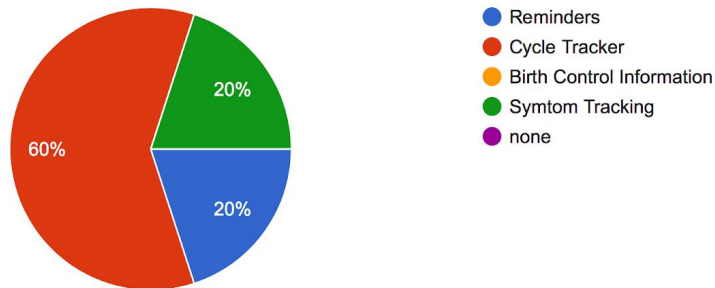
10 responses



○

## Which feature do you think has the most potential to be useful to you?

10 responses



○

## Do you have any suggestions for additional functionality?

10 responses

Make the clicker smaller

no

better alarm setting aspect

ability to customize which features you want to use

I would include a way to set reminders to go off every week at a certain time.

I would like it to include tips for how to deal with symptoms.

not that I can think of

no i love the app!

not that I can think of.

If the features of the app were more customizable to women on different types of birth control, I would be more likely to use it.

○