Heuristic Evaluation of Consistenzzz

1. Problem

The below heuristic evaluation is of Consistenzzz's prototype built in proto.io; the product is designed to help users manage sleep times and reduce sleep debt.

2. Violations Found

1. **[H2-1: Visibility of Status] [Severity 3] [Found by A]:**
Confirmation of new bedtime
In Task 1, after one edits the bedtime and click "Set", one is not reminded that the new time is set. Users might want a confirmation at this point in order to feel sure that the new time is now in force. I recommend adding a dialog box to play this role.

2. **[H2-1: Visibility of Status] [Severity 3] [Found by C]:**
No Title Screen/Menu
The app drops me right into actions without much knowledge of what I'm doing or why I'm doing it. I see the title screen, but then am immediately asked how long I want to sleep each night. I would hope to have a title screen with some optionality (based on task).

3. **[H2-1: Visibility of Status] [Severity 3] [Found by A, B]:**
Confirmation of time schedule in "Fix Me"
After one sets the bed and wake time and click "Accept", one should be reminded that the schedule has already been set and then choose to return to the Home screen. As of now, the app does not communicate to the user that the schedule has been set. The user probably freaks out because he/she has spent a lot of time choosing the times and does not want to lose them.

4. **[H2-1: Visibility of system status] [Severity 4] [Found by B]:**
Partial acceptance of suggestion
"Schedule decreases sleep debt to 0 in" field is static if user only partially accepts schedule – may be due to limitations in prototype, but if not, should change depending on what parts of suggested schedule user accepts.

5. **[H2-2: Match Sys & World] [Severity 2] [Found by A, B]:**
The "Scale" Metaphor
The "Scale" Metaphor in the "Track Progress" interface does not have proper implications. When a scale is balanced, the objects on its two pans are typically of equal weight. This is not the case in this scenario, as the time asleep can never equal to time awake (unless in really extreme cases). To have a balanced scale with 8 hours on one hand and 16 hours on the other is unintuitive. I recommend changing the metaphor to something else, maybe something more conventional.

6. [H2-2: Match Sys & World] [Severity 5] [Found by A, B]:
1AM this morning counts as today or yesterday?
For those of us who stay up late, it is customary for 1AM on Tuesday morning to count as Monday. Officially, however, anytime past midnight counts as the next calendar day. This incompatibility results in a serious problem. For example, if I set the bedtime on Monday to be 1AM, does it mean 1AM on Monday or Tuesday? If the former is true, then what if I want to go sleep at 1AM on Monday morning and 11PM on Monday night. How can the app allow two bed times on the same day? I wonder how the app resolve this issue because people will definitely be confused.

7. [H2-2: Match Sys & World] [Severity 2] [Found by A]:
The button to Settings Screen
The button to Settings screen is a small cogwheel between bedtime and wake time on the Home screen. The relative location of the button does not make sense. In the real world, anything located between two time displays is typically interpreted as something intervening in the duration of the time period. I recommend putting the cogwheel somewhere else on the Home screen.

8. [H2-2: Match Sys & World] [Severity 2] [Found by B, C]:
No interaction with main graphic - Home Screen
I keep wanting to click and drag the person (sleep debt meter). I don't really know what this would do, but it's the biggest item on the screen and I'm not able to interact with it in any way. Maybe a popup when I click on it describing the debt? I just want *something* to happen there.

9. [H2-2: Match Sys & World] [Severity 2] [Found by D]
Graph Icons
The icons for different graphs are rather unintuitive. For the scale graph, I don't really understand the value or what additional information in gives. I like the sleep-time graph for the clock; that makes sense. The picture of the bed relating to nap as opposed to anything else sleep related is somewhat unintuitive. This is also the first time we've heard about naps being a part of this app. These are bad things because they may cause a user to mis-interpret the purpose of each graph their first few times using it. A solution to this is to replace some of the icons, and possibly re-evaluate the scale-graph to portray more valuable information.

10. [H2-3: User Control & Freedom] [Severity 4] [Found by C]:
No escape from the additional info screen
Not yet implemented: Links to additional info has no recovery mechanism. I click in and it tells me that it's not implemented, but it doesn't give me an way back.

11. [H2-3: User control and freedom] [Severity 2] [Found by B]:
Blue screen before bed
Users may not want to look at blue screen on phone before bedtime – hurts quality of sleep for some people. Consider replacing with alternative option of buzzing when bedtime has started.

12. [H2-3: User Control & Freedom] [Severity 4] [Found by A, C]:
Initial settings unchangeable
Upon entering the app for the first time, one is asked how much time he/she wants to sleep per day and how much time he/she has slept. It is unclear how the user can change the settings on those screens once he/she has passed onto the Home screen for the first time.

13. [H2-3: User Control & Freedom] [Severity 4] [Found by A, D]:
Bed and Wake time only in half-hour-long increment
The app only allows users to choose bed and wake times at half hours (i.e., at 8 o'clock, 9 o'clock, 10 o'clock, and etc.). This probably does not satisfy user needs because we often want to wake up some time in the middle of an hour. I recommend changing scrolling to typing for time selection.

14. [H2-3: User Control & Freedom] [Severity 3] [Found by A, B]:
Bedtime unchangeable after it has passed
In Task 1, the dialog box does not allow one to edit bedtime once the time has arrived. This does not take into account of users who might have to postpone the time after the originally planned bedtime. I recommend editing bedtime and wake time in a screen within the app (like the one on the "Fix Me" screen) rather than the dialog box.

15. [H2-3: User Control & Freedom] [Severity 5] [Found D]
No back buttons
The only back-buttons go to the Home Screen, but none just go back as an "undo" function. Also, people are used to a button in that position taking them back, as opposed to home, which could cause usage errors that makes them lose inputs. Replace home buttons with back buttons since people will more frequently need to go back 1 screen than to go to the home screen.

16. [H2-3: User Control & Freedom] [Severity 2] [Found by D]
No undo for bedtime change
When editing bedtime via "Bedtime in 30 minutes!" pop-up, there's no cancel or go-back button; you can only "set" it back to what it was. This could be problematic if the user already changed the time, and has no way to cancel their action(s). Easily fixed by adding a "cancel" or "back" button.

17. [H2-4: Consistency & Standards] [Severity 2] [Found by A]:
Headers and Footers consistency
The headers and footers of different screens vary widely in color and format. For example, the Settings header is blue while every other header is white; the Home screen footer is a bar that expands the whole screen, but the Alarm Times screen footer is a standalone button. Headers and footers should be consistent across all screens.

18. [H2-4: Consistency & Standards] [Severity 2] [Found by D]
Clock scrolling on pop-ups
On the bedtime popup, you have to press "Edit Bedtime" and go to an additional interface to

change the time. This is inconsistent with the rest of the app where times are usually editable. It could be accomplished faster by making the "Bedtime in X minutes!" editable. One could also argue that it's meant to be difficult to change your bedtime to encourage you to stick with your goal, so this is up to the designers.

19. [H2-4: Consistency & Standards] [Severity 2] [Found by A, D]:
Font size consistency
The font size of texts greatly vary across the screens and the dialog boxes. On the Home screen alone, one can spot five font sizes. Sometimes, the font is also exceedingly small. Without better managed font sizes, one cannot show the relative importance of each textbox. I recommend to keep only two sizes. Aside from the number indicating sleep debt, everything should be of a smaller size.

20. [H2-4: Consistency & Standards] [Severity 5] [Found by A, B, C, D]:
Time selection scroller
Throughout the app, it is not clear that the scroller to select time is actually a scroller. For example, the Bed time and the Wake time displayed on the Home screen look more like a fixed display rather than something that can be changed by scrolling. The height of the scrolling area is so small that users do not recognize it as scrollable. I recommend changing scrolling to typing in the time.

21. [H2-4: Consistency & Standards] [Severity 2] [Found by C]:
Similar screens are offset
Wake and Bedtimes Screens (toggle) have different positions for text. One is just offset (below) the other and the header is slightly different.

22. [H2-4: Consistency & Standards] [Severity 2] [Found by C]:
Bug from major sleep debt screen
Fix Me! not clickable from Sleep Debt: 19 Hours. Likely just a prototype bug, but a popup or other action would help me understand the situation.

23. [H2-4: Consistency & Standards] [Severity 2] [Found by A]:
Color usage consistency
The background color of the app varies from white to dark gray. It is not clear how these screens are different or whether they should be different. One possibility is that whatever the user does with bedtimes should have gray background, and whatever the user does with wake times should have white background. However, this is not consistently applied across all screen.

24. [H2-4: Consistency & Standards] [Severity 2] [Found by A, B]:
Button standards and consistency
The "Accept" and "Edit" buttons of the app are in light gray, which typically implies that these buttons are not clickable. One's attention is naturally drawn away from these buttons. I recommend changing these buttons' colors as well as their relative locations, making them

appear in roughly the same location over different screens. Also, it seems that "Accept" and "Edit" have different meanings on different screen. "Next" is more proper than "Accept" on some of the screens, while "Settings" is more proper than "Edit" in some of the screens.

25. [H2-4: Consistency & Standards] [Severity 4] [Found by A, B, C, D]:
"Bed" and "Wake"
The "Bed" and "Wake" boxes look like buttons but are in fact switches. The user can get easily confused by what these boxes do. If one intends them to be switches rather than buttons, one should make them look like switches.

26. [H2-4: Consistency and standards] [Severity 2] [Found by B]:
Selector tabs navigation
Navigation "selector tabs" for adjusting wakeup and sleep times (accessed through the bottom right navigation tab) are different from other tabbed navigation. Make these consistent tabs.

27. [H2-4: Consistency & Standards] [Severity 2] [Found by A]:
"Fix me!" period unit inconsistency
In choosing how soon the user wants to pay the Sleep Debt, one sees two units: days and weeks. Having two units breaks down the "small variable" principle because one has to read the entire line of the choice (rather than just looking at the number). I recommend changing all units to weeks or having two scroll bars, one for the number and the other for unit.

28. [H2-4: Consistency & Standards] [Severity 2] [Found by A, D]:
"Fix Me!" screen and "Alarm times" screen
The "Fix me!" screen and the "Alarm times" screen have vastly different layout even though the contents are similar. Users must now learn how to operate in both environments. I recommend making the two screens similar or, even better, to merge them into one screen (having two screens also introduce opportunities for errors and information inconsistency).

29. [H2-5: Error Prevention] [Severity 4] [Found by A, B]:
Time display AM/PM confusion
All time displayed in the app do not show whether it is AM or PM. Users might be confused with what time they are choosing. Maybe instead of inserting AM or PM after every number, the app can distinguish time using color (dark blue indicating night time, and light blue indicating day time).

30. [H2-5: Error Prevention] [Severity 3] [Found by D]
Initial page toggle usage
It is unclear what the purpose of the sliders is on the initial set-up pages. It appears they are never turned on, which may indicate to the user that they all need to be flipped to on. If this were the case, I would guess that the sliders not being in the state expected by the application would result in alarms being erroneously set or not set. One solution to this is to set all sliders to be on initially, and add a header above the slider column saying something to the effect of "Alarm enabled". In addition, if an alarm is off, one could remove or gray-out the associated time so it's

more obvious to the user that the alarm is disabled.

31. [H2-5: Error Prevention] [Severity 3] [Found by A, B]:
Choosing "Stay up" accidentally
If one chooses "Stay up" in task 1 accidentally, then it seems that he/she has to wait until the next dialog box to click "Sleep". To "Stay up"--which disturbs one's sleep regimen--should not be a decision taken with only one click. I recommend adding a new dialog box that confirms with the user whether he/she really wants to stay up.

32. [H2-5: Error prevention] [Severity 3] [Found by B]:
Display error on partial acceptance
Does not adjust or display message if user selects a combination of times that does not meet their initially selected goal of reducing sleep debt. Display a popup if this happens.

33. [H2-5: Error Prevention] [Severity 3] [Found by D]
Graph date-slider usage
The functionality of the slider is unclear; does it mean 1 week leading up to the specified date, or some arbitrary time up until that date? This could cause errors because the user won't know how to properly use the slider. One possible solution is to have two date-pickers to change the start/end dates, with them defaulted to the last week.

34. [H2-5: Error Prevention] [Severity 5] [Found by A, B, D]:
The location and function of "Accept" in "Fix me"
The function of the "Accept" button is very unclear and unintuitive. (As of now, clicking "Accept" in "Fix me" causes every time to revert to default.) I believe one should not be able to click "Accept" until the time in every activated day has been set. Also, the relative location of the "Accept" button near the top of the screen is not intuitive, as it implies that one has to change it before setting the bed and wake times.

35. [H2-5: Error Prevention] [Severity 4] [Found by A, B, D]:
Slider of the "Track Progress" Interface
Each of the three "Track Progress" interface has a slider on the top portion of the screen. However, as one modifies the slider, one's hand or finger probably hides the display below. I recommend putting the sliders near the bottom rather than near the top.

36. [H2-6: Recognition not Recall] [Severity 2] [Found by A]:
Remembering Amount of Sleep Debt
In Task 2, it is asked "How soon do you want to remove all Sleep Debt?" It is possible that the user does not remember the sleep debt he/she has. I recommend changing the prompt to "Remove my 20 hours of Sleep Debt in (option scroll)"

37. [H2-6: Recognition not Recall] [Severity 4] [Found by A, B]:
Setting Bed and Wake times in "Fix me"

The "Fix me" screen asks users to make a lot of choices. The user probably has to recall every factor that impacts his/her sleep schedule over the next couple of days or weeks. This can be a daunting task for someone who has a packed and messy schedule. I recommend selecting the bed and wake time in Calendar so one knows when he/she is able to sleep and makes plans accordingly.

38. [H2-6: Recognition not Recall] [Severity 4] [Found by A]:
Setting Bed and Wake times in "Alarm"
In "Alarm time" of Task 3, the screen setting bedtimes and that setting wake times are two separate screens. This requires users to remember the time chosen on the other screen in order to calculate how much sleep they are going to get each night. Doing so requires very good short-term memory.

39. [H2-7: Flexibility & Efficiency of Use] [Severity 3] [Found by A]:
Selecting Days in a Week
When choosing on which day of the week to commit to the sleep regimen, the app should allow power users to select days more easily. I recommend setting the default choices to the choices that the user made last time on the screen. That way, the user only needs to modify those choices that he/she wants to revise.

40. [H2-7: Flexibility & Efficiency of Use] [Severity 2] [Found by A]:
Selecting Days in a Week #2
The small switches to the right of each row is small and hard to click. I recommend that the app should allow user to select and de-select by clicking anywhere on the row.

41. [H2-7: Flexibility and efficiency of use] [Severity 2] [Found by B]:
Going to bed earlier
No options to go to bed earlier than scheduled time. Maybe consider implementing. Good to give user more options.

42. [H2-7: Flexibility & Efficiency of Use] [Severity 2] [Found by A]:
Automatic Selection after Editing
In order to edit and activate the bedtime (or wake time) on any day, the user has to first change the time and then activate the button. However, if one is already changing the time, then he/she probably wants to activate that day anyway. Therefore, I recommend automatically selecting the day after editing the time.

43. [H2-7: Flexibility & Efficiency of Use] [Severity 2] [Found by C]:
Add Swipe Functionality to goal zero sleep debt time (ex: 2 weeks)
If Bed/Wake times are scrollable in (Fix Me), I feel like the timeline should be as well. This is also a consistency thing, and a bit of user control, but I have to go into more screens to adjust the time to fix my sleep debt, when most others are clearly editable on that screen.

44. [H2-7: Flexibility and efficiency of use] [Severity 4] [Found by B]:
Setup alarm times
The flow to setup alarm times involving a list, scrolling, and toggle for specific days is not very intuitive. Old times that are set are not saved – new alarms override old alarms. Multiple alarms cannot be set for one day. Replace with text input alarms that push to a new screen with alarm information, as Apple clock alarm app does.

45. [H2-7: Flexibility and efficiency of use] [Severity 4] [Found by B]:
Adjust times from stats menu
No easy pathway to adjust wakeup and sleep times from the stats menu, which is the logical next step for users to change behavior after reading stats. Include option to "fix this statistic" that redirects to a suggested sleep schedule.

46. [H2-8: Aesthetic & Minimalist Design] [Severity 3] [Found by A, B]:
"Fix Me!" button
The "Fix Me!" button seems awkward on the home screen. One should simply make the human figure play the role of the "Fix Me!" button. Doing so makes the user interface more intuitive and less chaotic.

47. [H2-8: Aesthetic & Minimalist Design] [Severity 2] [Found by A, B]:
Help Screen text alignment
The text in the Help screen is center-aligned, which makes the text very hard to read as one jumps from line to line.

48. [H2-8: Aesthetic & Minimalist Design] [Severity 2] [Found by D]
Overly verbose header
On the "Fix Me" schedule screen, it says "Schedule Decreases Sleep Debt to 0 in: 2 weeks", which seems like an overly verbose phrase that looks really smooshed. This detracts from the interface's main focus, and is basically just take up white-space. Could just say something like "Sleep debt eliminated in: 2 weeks", and re-arrange the text so that the sentence appears over the "2 weeks" part.

49. [H2-8: Aesthetic & Minimalist Design] [Severity 2] [Found by D]
Overly verbose header
Too much text in the header that says "Current Schedule Decreases Sleep Debt: 4 Hrs". This is again distracting from the main focus of the interface. As a solution, one can just say "Reduces sleep debt by [time]" in the header, and possibly lay it out like discussed for the previous header. Also, not all capitalized words.

50. [H2-8: Aesthetic & Minimalist Design] [Severity 2] [Found by D]
Cluttered graph(s)
Too much text on the sleep-time graph, which can distract from the graph as the central focus. Could just have "Average: X, Goal: Y" and convey the same information.

51. [H2-8: Aesthetic & Minimalist Design] [Severity 2] [Found by A, D]:

"Bedtime in" display
The "Bedtime in" display on the Home screen is extraneous as it does not relate to the main purpose to the screen, which is displaying the amount of sleep debt and jerking the user into setting a schedule. I recommend putting the bedtime countdown in a screen before the Home screen.

52. [H2-8: Aesthetic and minimalist design] [Severity 2] [Found by B]:
Finding stats
Location to access stats of sleep is hidden in the bottom panel and does not stand out due to black and white coloring. Make more prominent with color or size.

53. [H2-8: Aesthetic & Minimalist Design] [Severity 2] [Found by A]:
Home screen color mixture
The combination of high-contrast colors such as green, yellow, red (and other colors) makes the Home screen a bit chaotic. It is difficult to pay attention to the most important information on the screen, which is the little figure that displays the amount of sleep debt. I recommend scraping the high-contrast colors for the "Bed" and "Wake" buttons. The gray area on top of the footer makes the screen a bit segmented with the footer detached from the rest. I recommend removing the background color in the gray area.

54. [H2-8: Aesthetic & Minimalist Design] [Severity 2] [Found by C]:
Buttons take up too much real estate
Accept Button on "how many hours" - could be minimalist (arrow, etc). This is common throughout, where large buttons are used to do what could be done with much smaller, discreet, and evocative icons/images.

55. [H2-8: Aesthetic & Minimalist Design] [Severity 2] [Found by A, B]:
The Task 1 Dialog box
The Dialog boxes in Task 1 seem a bit messy with different font sizes and figures. The iOS Dialog box is supposed to be simple and elegant (in fact, I don't think you can insert anything other than text onto an iOS Dialog box). I recommend drastically simplifying the contents of the Dialog box.

56. [H2-8: Aesthetic & Minimalist Design] [Severity 2] [Found by D]:
Cluttered home screen
The Home Screen is cluttered with lots of buttons everywhere (not sure of Bed/Wake are supposed to be buttons). Confusing because you need to remember where all of them are, and detracts from central focus of home screen. Could add it slide-in list of buttons on the left.

57. [H2-9: Help Users with Errors] [Severity 1] [Found by A]:
Wake time before Bedtime
Currently, one can set the wake time to be before bedtime. It is unclear how the app should respond to this error. I recommend changing the method of choosing time, maybe choosing

sleep time in the same way that you set a new event in Google Calendar (in that way, the end time of the event is definitely after the start time).

58. [H2-9: Help Users with Errors] [Severity 2] [Found by C]:
Strange visual error in Fix It bedtime
Strange Error with my Monday Bedtime when entering from the Help->Fix It flow. The M Bedtime is not listed, and I don't really know what to do to change things - this is likely a bug.

59. [H2-9: Help Users with Errors] [Severity 3] [Found by B]:
Alternate suggestions to fix sleep schedule
Does not provide alternate suggestion if user selects a combination of times that does not meet their initially selected goal of reducing sleep debt. Display a message if this happens.

60. [H2-9: Help Users with Errors] [Severity 3] [Found by B]:
No initial setup
No error or alert if user does not set any wakeup and sleep times on initial setup, which will create an error on later tabs within the app. At the very least, display a warning that the user is proceeding with no times selected.

61. [H2-9: Help Users with Errors] [Severity 4] [Found by A]:
Sleep information updated?
If the user goes to sleep before bedtime or wake up after the wake time, or take naps that are not recorded, it is unlikely that additional sleep times can be recorded easily into the app. The user, over the long run, will definitely commit errors such as forgetting to register sleep time. The app must come up with some way to ensure these errors do not take place; otherwise, all the Sleep Debt data would be useless.

62. [H2-10: Help & Documentation] [Severity 3] [Found by A]:
The Help interface
The "Help" feature does not teach users to use the app. While some easy features do not need explanation, some more complex features probably do. I recommend adding a few graphic explanations of the core functions of the app (especially Task 2 and 3).

63. [H2-10: Help & Documentation] [Severity 2] [Found by A, C]:
The Bed/Wake display on Home screen
It is not clear what the Bed/Wake gray area on the Home screen achieves, even though it occupies an important position. There is no documentation either to explain this feature.

64. [H2-10: Help & Documentation] [Severity 3] [Found by D]
Toggle alignment/usage
Unsure what the sliders do here, although that might just be because I'm a non iPhone user. I'm assuming they enable/disable each of the alarms, but having it nested under the "Edit" button is slightly confusing. This is negative because it could cause users to think the sliders are related

to editing. Could be fixed by adding "On"/"Off" labels as the background images for the sliders, and/or moving the "Edit" button elsewhere so they don't seem related.

65. [H2-10: Help and documentation] [Severity 3] [Found by B]:
Naps
The stats screen is the first time naps have shown up (in "nap statistics"); to the user this confusing as to how this is calculated and tracked. Either include naps as part of the home screen stat tracking or explain how naps are tracked.

3. Summary of Violations

Category	# Viol. (sev 1)	# Viol. (sev 2)	# Viol. (sev 3)	# Viol. (sev 4)	# Viol. (sev 5)	# Viol. (total)
[H2-1: Visibility of Status]	0	0	3	1	0	**4**
[H2-2: Match Sys & World]	0	4	0	0	1	**5**
[H2-3: User Control]	0	2	1	3	1	**7**
[H2-4: Consistency]	0	10	0	1	1	**12**
[H2-5: Error Prevention]	0	0	4	2	1	**7**
[H2-6: Recognition not Recall]	0	1	0	2	0	**3**
[H2-7: Efficiency of Use]	0	4	1	2	0	**7**
[H2-8: Minimalist Design]	0	10	1	0	0	**11**
[H2-9: Help Users with Errors]	1	1	2	1	0	**5**
[H2-10: Documentation]	0	1	3	0	0	**4**
Total Violations by Severity	**1**	**33**	**15**	**12**	**4**	**65**
Note: check your answer for the green box by making sure the sum of the last column is equal to the sum of the last row (not including the green box)						

4. Evaluation Statistics

Severity / Evaluator	Evaluator A	Evaluator B	Evaluator C	Evaluator D
level 1	1	0	0	0
level 2	16	9	8	10
level 3	7	8	1	3
level 4	8	7	3	3
level 5	3	3	1	3
total (levels 4 & 5)	11	10	4	6
total (all levels)	35	27	13	19

Evaluator # Ex. C	# problems found Ex. 7	# Unique problems remaining & problem IDs Ex: 5 (1, 7, 11, 13, 17)
A	35	17 (57, 7, 17, 23, 27, 36, 40, 42, 53, 1, 14, 39, 62, 12, 13,38,61)
B	27	10 (11, 26, 32, 41, 44, 45, 52,59, 60, 65)
C	14	7 (2, 10, 21, 22, 43, 54, 58)
D	14	11 (9, 15, 16, 18, 30, 33, 48, 49, 50, 56, 64)

5. Summary Recommendations

A: The app still needs a lot of meticulous works on font sizes, color schemes, and overall layout; as of now, the interfaces look inconsistent and a bit messy. I strongly recommend revising the "Fix me" and the "Alarm time" screens, as they contain numerous problems: (a) the UX of selecting times on these screens is bad, as the scrollers are small, unintuitive, and thereby hardtouse (Violation #11); (b) these screens easily result in confusion and thereby errors (Violation #4, #17, and #19); (c) it requires too much recall (Violation #20, #21, and #22); (d) it is unclear how these screens are related to the rest of the app (Violation #34 among others). These problems must be resolved if the app is to work. I recommend the team to come up with a new mental model on how to create a sleep regimen, making time selection easier and less errorprone. One thought on this line is to imitate Google Calendar, in which people can schedule sleep time the same way they schedule an event.

B: Focus improvement in the next iteration on app navigation. Right navigation is inconsistent and laid out across several screens. Have one central navigation tab that allows access to all screens and stays locked to the bottom of the screen, rather than constantly switching to icons, text, etc. In addition, allowing easier setting and changing of alarm and wake times will greatly improve the usability of the app. I like the visual displays of data as well as the "person filling up" model as a home screen. Instead of directing the user to

different screens, try and incorporate more interaction onto this default home screen, especially for beginner users.

C: I really enjoyed using Consistenzzz! The biggest nonbucket feedback I have is likely business and business model related, so I will spare discussing that given the guidance of "not to think about the business implications." One worry I have as a user is just how scientific is the information I'm getting. I know there are links on the way, but I do think some sort of inapp education would be helpful. How do you calculate my sleep debt? What's the right way to really catch up on sleep? These little hooks all around the app would make the experience fun and more satisfying as I explore your features I'm learning about why those features matter.

I also think the app, long term, could pull in your calendar data and help suggest times for you to take quick naps, get an extra hour of sleep, etc. There seems to be a lot of input required (when do I want to go to bed each night) of users who are likely already overworked and have highly variable schedules. I'd have to take the time to plan out a "good bedtime" for every day at least once a week, which is likely more friction that I'm willing to endure.

Lastly, I would consider a visual design that is a bit more modern and sleek. The human "status bar" is a good thought, but I wonder if other designs could communicate more information in an equally (or more) visually appealing way.

D: Overall, I like the design of the application, but there are a few areas that need improvement. Firstly, cut back on the verbosity of some screens. There are a few cases where there are needlessly long sentences to label information, such as the "Sleep Debt Reduced to 0 in [time]" label. Secondly, allow the user to more easily navigate the application. There are no options to simply go back one screen, only all the way back to the Home Screen. Additionally, there aren't "cancel" options for some interfaces where it would be valuable. The third main thing I would say to improve is making certain functionalities more obvious. For example, when I first looked at the Home Screen, I didn't realize the times under "Wake" and "Bed" were editable. Even though this functionality is something the user would know after being shown it, it would be difficult to come up with it alone unless you accidentally changed it and realized it was editable.

Severity Ratings

1 - don't agree that this is a usability problem
2 - cosmetic problem
3 - minor usability problem
4 - major usability problem; important to fix
5 - usability catastrophe; imperative to fix

Heuristics

[H2-1: Visibility of System Status]
- keep users informed about what is going on

[H2-2: Match Between System & Real World]
- speak the users' language
- follow real world conventions

[H2-3: User Control & Freedom]
- "exits" for mistaken choices, undo, redo
- don't force down fixed paths

[H2-4: Consistency & Standards]

[H2-5: Error Prevention]

[H2-6: Recognition Rather Than Recall]
- make objects, actions, options, & directions visible or easily retrievable

[H2-7: Flexibility & Efficiency of Use]
- accelerators for experts (e.g., gestures, kb shortcuts)
- allow users to tailor frequent actions (e.g., macros)

[H2-8: Aesthetic & Minimalist Design]
- no irrelevant information in dialogues

[H2-9: Help Users Recognize, Diagnose, & Recover from Errors]
- error messages in plain language
- precisely indicate the problem
- constructively suggest a solution

[H2-10: Help & Documentation]
- easy to search
- focused on the user's task
- list concrete steps to carry out
- not too large