**Project, Burn Boot Camp Mobile Interface**

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**1 INTRODUCTION**

**1.1 Description**

Burn Boot Camp is a fitness facility, owned by franchises all over the USA, and it has challenging 45-minute cross-fit training for cardio and strength. Everyday camps help to focus on fitness goals, do high intensity training, body transformation, and socialize with communities. It has a mobile application that can be used to setup a profile, book camp, view weekly protocol (schedule of workouts), purchase camps for non-members, buy burn merchandise, home dashboard, child-watch sign-up, schedule focus meetings, add a payment method, rate, and review a particular camp. Camp members can perform these tasks on a needed basis. The most common tasks that are performed in the application are booking a camp for the day and looking for weekly protocol.

**1.2 Access**

First step is to install the Burn Boot Camp application from the App store or Google Play store or a relevant mobile application store. The application is a mobile-only interface, and it is designed by ‘mindbodyonline’ portal. Below are the steps to perform certain tasks on the application. As a prerequisite, member should be logged into the application for performing essential tasks.

*1.2.1 Profile Login:*

* Once the application is installed, open the application.
* Click on Profile and then Create Account.
* Click on ‘Continue with Email’ and an interface opens to enter the basic details to create account (*Appendix 9.1 Steps for creating a new profile*).
* Once account is successfully created, the Profile dashboard can be viewed.

*1.2.2 Booking a Camp:*

* Once the application opens, make sure it is logged in using the above steps.
* Click on the ‘Book’ icon, under ‘Camps’ tab there are a list of timings and date for the camp and the user can choose any class and book it.
* Like Booking camp, child-watch can also be booked by clicking on ‘Child-watch sign-up’ (*Appendix 9.3 Steps for Booking a Child-watch*).

Graphical user interface, application, Teams

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***Figure 1 –***- Showing current design for booking a camp.

*1.2.3 View weekly protocol:*

* To view the list of training for the week, open the application and make sure it is logged in.
* Click on ‘More’ and user can a list of menus. Click on ‘Burn Protocol’ and then Click ‘Click here for this week protocol’.
* List of workouts for the whole week from Monday to Saturday is displayed which helps member to view the workouts for the week. (*Appendix 9.4 Steps for Viewing Weekly Protocol*).

**2 INITIAL NEEDFINDING**

**2.1 Problem Space**

Burn Boot Camp is commonly used by gym members, administrative staff, and fitness trainers. It is not a common application used across different demographics, context, and climate. I use it every day to book and attend training camps. The interface needs a lot of improvement, as I observe it from the participant point of view. Some of the key problems with the interface are described below:

* Booking a camp, under the Camps tab, user can see details including date, timing, and trainer, but there is an unnecessary navigation of going to a different screen for booking it, which make it gulf wider.
* Like Booking a camp, child-watch sign-up can also be done. Child-watch is limited to only certain camps and there is a separate row to perform that task. It goes through the same sequence as above which could be done with a single click.
* To view the weekly protocol, user must navigate through a sequence of steps in the application. This could also be integrated along with booking the camp. The user experience gets better if users know the workout for the day while booking the camp.
* Profile tab shows the total number of classes attended rather it won’t categorize yearly. BBC complements their members for attending 50/100/250 camps and keeps them motivated on their fitness journey, so showing yearly camps would be a good feature.
* ‘Buy’ tab does not do much useful things and some links are not functional. This gives a wrong interpretation to the users, which makes them spend unnecessary time in the interface.
* ‘More’ tab has a lot of links which are not native to the application, so it redirects to the website. They don’t function properly or provide any useful insights.

**2.2 User Types**

The users for this application would be mostly gym members, trainers, and staff who are aged between 18 and 65. The members have different types of subscription like monthly, 6 months or yearly and some are anxious fitness users who might come for trial camps or clinics and may never show up again. The context of the users is to perform a task on the interface when they are rushing to the camp or during leisure time.

**2.3 Needfinding Exercise 1, Interviews**

*2.3.1 Plan*

For understanding the user experience on the current interface, the usability, invisibility, and the gulf, interviews would be a great source for needfinding plan. As mentioned earlier, the application is being used by gym members, trainers, and administrative staff. I planned to take interviews with them irrespective of their demographics, to understand the goals, tasks, and sub-tasks they are currently executing in the interface and the challenges that are being faced. The users currently using the interface are aged anywhere between 17 to 65+ and all genders as it is a fitness facility welcomed for all genders.

As a naturalistic observer of the application, I perform three or four essential tasks like booking a camp or child watch, viewing the weekly protocol, viewing the number of camps attended, and reviewing an attended camp. Likewise, different people around my region who attend the camp would focus on doing similar tasks but the demographics of performing the task, the cognition could vary from user to user. Remember, I am not sticking to a bias here and understand some users can focus on other tasks too like buying a trial camp, adding a payment card, navigating through the links when clicking on ‘More’. To execute a needfinding plan, below are the questions I would ask the users associated with Burn Boot Camp during the interview, planned for approximately 15 minutes at the gym.

* Basic questions like Age, Gender, and Occupation.
* How many camps do you attend during a week?
* How would you rate the experience with booking a camp or child-watch?
* How easy is it to view the current week workout protocol?
* Are you interested in knowing the metrics or personal achievements in the camps?
* What other tasks do you perform in burn boot camp application?
* Would you be interested in a dark/bright mode toggle?
* Application’s overall experience.

*2.3.2 Biases*

The interview is being conducted with community members because they are familiar with the interface and knows the good or bad parts of it. *Social desirability bias* could occur where some members would not provide serious opinions or blindly agree with the knowledge I am proposing, this can be avoided by having open-ended discussions. *Recall bias* could happen as users would tend to forget the suggestion due to their priorities, so showing the interface, asking questions, and recording them could mitigate that bias.

*2.3.3 Execution and Observations*

Based on the questions above, I have interviewed 15 members in 3 different facilities in my region. Out of these 15 members, 3 are trainers, 1 administrative staff and 11 gym members. Interviewed gym members typically attend 5-6 camps a week. 4 members who just book the camp are satisfied with the application after the profile creation but does not concern on the other features. 5 members who book the camp and child-watch feel it is repeated work. Collectively everyone felt looking for workout protocol is a tedious process of navigating through various links. 10 members like to see the number of camps attended for the year somewhere in the application because they are asking the front-desk staff about it, and they must dig into the system to find out. 3 Trainers told they don’t receive consistent ratings and review from members because they don’t know where to go and provide feedback.

*2.3.3 Summarization*

Based on observations, users feel the essential tasks can be designed better. The *goals* are to book a camp in advance to save time at the gym for which the *task* is to go through steps for booking a camp described in 1.2. The next goal is to book child-watch and know the workout for the day. All three of this can be performed under a single interface. Then looking for the number of camps attended in the year under the Profile dashboard, the *goal* of this is to receive achievements on 50/100/250 camps. There are other *goals* for users like scheduling focus meeting with the trainers, buying merchandise or one-time classes, but the current interface does not support these operations.

**2.4 Needfinding Exercise 2, Product Reviews**

*2.4.1 Plan*

Application reviews helps in extracting information in understanding the challenges and the positive aspects of the interface. They are a great source to understand the feedback from different demographics of users. If interviews help in-person communication and customized questions, application reviews could help in receiving feedback from a different spectrum of users. Based on the references provided in Appendix, both the android and iOS application reviews can be read to understand the good and challenging features of the application. The priority could be redesigning the most important features and add the nice-to-have features for the next iteration (*Appendix 9.8 Reviews from App Store and 9.9 Reviews from Play Store*).

*2.4.2 Biases*

In terms of biasing, *voluntary response bias* might occur because users typically review an application when they are extremely frustrated or extremely satisfied using it. The users who provide genuine reviews don’t go for a rating of high 5 or low 1 unless they have strong justification on those aspects. To mitigate this biasing, I will sample, few reviews from each rating of 1 to 5, to understand the pulse of the users, their cognitive thought process about the various interface and tasks that are performed in the application. I have made sure to have reviews as my second needfinding so that I won’t influence the interview questions to the users based on the reviews.

*2.4.3 Execution and Observations*

There are around 130 reviews in iOS app store and 167 reviews in Android play store. I choose 10 reviews from 1 to 5 rating on both the stores. Some of the 1-star ratings are mostly due to application crashed, the application was down for 20 hours, cannot book a camp. Ratings on 2 are again camp booking issues, broken links in the application, wrong data showing on some interfaces. 3-star ratings gave insights for not showing the camps attended for the year, and easier booking experience compared to a similar application. Some of the users have mentioned about re-installing the application while there are errors in accessing the application. Most users with a 5-star rating love the camp, the trainers, and workouts, they are not concerned on the user interface experience.

*2.4.4 Summarizations*

Based on the observation from application reviews in both the stores, the common challenge is booking a camp. The application gets crashed while booking, modifying, or canceling a camp. Users are not able to see the camps attended for the current year, they are able to see only recent 7 camps that are attended in history and active date shows wrong data. The Profile login feature seems to be having issues as it gets closed automatically and when opened again, the logged in user profile is reset. Biasing is mitigated by personally observing the concerns in the application myself because the reviews could be outdated and the design or requirement might be resolved already.

**2.5 Data Inventory**

*2.5.1 Users*

Users who are using the Burn Boot Camp application would be gym members, trainers and staff aging between 17 and 65+. They could be of any gender or occupation, basically users who focus on fitness and have membership with BBC or users who take occasional classes with fitness goals and perform tasks.

*2.5.2 Context*

The context of the user can be during driving or walking because in the US driving to a place is a most common thing. So, users mostly book the camp while rushing to the camp or 15 minutes earlier to the camp time. Similarly, viewing the weekly protocol or dashboard or creating a profile can be done during leisure time.

*2.5.3 Goals*

The goals of a user would be to stay fit, socialize with the community, focus on fitness achievements, spend limited time planning for a workout by following the trainer’s instructions.

*2.5.4 Needs*

The needs of a user are a smart phone with Burn Boot Camp application installed.

*2.5.5 Tasks*

The tasks that are performed in the interface are Booking a camp or child-watch, viewing weekly protocol, viewing the number of camps attended, Rate and Review camps, book focus meetings, buy trial classes or clinics, and application settings.

*2.5.6 Sub-Tasks*

Getting a specific membership like monthly or yearly or clinic classes and creating a profile in the application can be a sub-task with respect to the context of the tasks.

**2.6 Defining Requirements**

After going through the needfinding exercises, though the application needs more re-designing on ‘Buy’ and ‘More’ interface, currently I will focus on re-designing the essential tasks like booking a camp, showing camps for the current year, decommission the multiple clicks of finding the weekly protocol. Booking a camp currently is done through 3 clicks which is not required because the trainer’s name, camp time and child-watch availability can be viewed in the scroll, so swiping to the right can bring an option to Book. Profile Dashboard can show current year camps by default and show the camps for last 3 years under metrics. This would help users to feel accomplished on the number of camps they attend. The weekly protocol can be integrated while booking the camp and decommission its navigation completely from the application.

**3 HEURISTIC EVALUATION**

**3.1 What works well?**

The application has essential features which works perfectly fine. Home dashboard after opening the application, shows the next visit which is the interface output from booking a camp using the gulf of execution principle. It also shows the upcoming appointment that redirects to the ‘Book’ tab and the last visit for the user to provide ratings and review on training.

Booking a camp is the core functionality and it works well. Though there are some design flaws which is planned for re-designing, as a personal user, the context and task that needs to be performed helps me save time for the camp. Most members rush to the camp at the last moment, so standing in a queue to check-in is time consuming which would lead to missing pre-warmups for training and further injuries or muscle sourness. To avoid this, booking the camp in advance would make it easier for check-in.

With respect to *feedback cycles from Chapter 2*, booking a camp is one among the task that goes through the *gulf of execution and evaluation*. The goal is to plan workout for a particular time, and the task is to use the booking interface to schedule a camp. The *Gulf of execution* for a user is to *identify intentions* which is to open the application and book a camp, while *identifying actions* is to know the steps to book a camp. When the actions are less, the execution time and cognitive load to perform the task would be less. In the current interface, there are 3 steps for *execution (explained in 1.2 Access)* and the *Gulf of evaluation* takes place after clicking the ‘Book’ button. The *interface output* is the ‘Booked’ message in a pop-up which could be then *interpreted* by the user, and they *evaluate* it to understand if the task is completed. Frequent feedback cycles from the user through the gulf process would make it narrower and eventually the interface would become invisible by design.

**3.2 What makes it works well?**

*Consistency*: Burn Boot Camp interface follows a consistent design principle for the interface. Booking a camp, viewing the dashboard, and viewing the profile information interfaces stay consistent with the other relevant application in the market. Based on the reuse principle quoted by Larry Constantine and Lucy Luckwood on Consistency, ‘the design should reuse internal and external components and behaviors, maintaining consistency with purpose rather than merely arbitrary consistency, thus reducing the users to rethink and remember’. Booking a camp uses that principle and follows a similar pattern of allowing a user to choose a date and time, preview the information before booking, then click on the ‘Book’ button. The system then responds with a success message ‘Booked’ and shows options to Cancel. This is a consistent booking pattern used across various application like movies, events, classes, appointments and more. This would make the user easily understand the actions and execution in this interface and gulf would be narrower.

*Simplicity:* Like booking a camp, creating a profile is also simple and straightforward. Based on the principle quoted by Larry Constantine and Lucy Luckwood, ‘The design should make simple, common tasks easy, communicating clearly and simply in the user’s own language, and providing good shortcut. There are no complex forms to fill for creating a profile, just the basic information with credentials would suffice. If the user opts to integrate a single sign-on functionality from a google, facebook or apple, then the cognitive load for a user in creating a profile is just a click away. The profile creation interface would also adhere to the ‘Consistency’ principle as it is a similar behavior integrated in many applications.

**3.3 What doesn’t work well?**

The essential design that does not work well in the current system are viewing the weekly protocol, and not showing the number of camps for the year. Apart from this many of the links are broken in ‘Buy’ and ‘More’ tabs. As mentioned earlier, viewing the protocol shows the workout for the day, it takes a series of navigation and excessive cognitive load to the user in the current interface. Knowing the workout for the day in the booking page is much easier than navigating to a different set of screens. This helps the user to prepare well in advance. For example, one user told me they double the training if it is a cardio day.

‘Buy’ and ‘More’ tabs have a lot of non-functional links that do not provide any meaningful feedback to the user. Except for ‘Camps’ under ‘Buy’ tab, the rest of the links are not working and meaningful. ‘More’ tab has a lot of links that are not native to the application.

**3.4 Why doesn’t it work well?**

*Constraints:* Due to the lack of Constraints principle, there are few designs that are broken in the system which does not have to be exposed to the user. Though the intent is to reserve those links for future use, it can be restricted from users to view it. This may give a misconception and pre-conceived notion about the application which could spoil the good parts of the application. As quoted by Don Norman, ‘Constraints are powerful clues, limiting the set of possible actions. The thoughtful use of constraints in design lets people determine the proper course of action, even in a novel situation’. The interface or the system should limit the users with required intention and actions that can be executed for accomplishing their essential goals.

*Ease and Comfort:* For viewing the protocol and booking a camp, the user must go through a series of navigation which is not necessary. This breaks the principle of Ease and Comfort based on Ronald Mace, ‘The design can be used efficiently and comfortably and with a minimum of fatigue’. After a one-time activity of profile creation, booking a camp would be an essential task in the application. So, integrating ‘viewing the protocol’ while ‘booking a camp’ would be comfortable for the user rather than understanding it from a different navigation cycle.

*Perceptibility:* Though the profile creation is easier, the feedback that is provided from it is not appropriate, the metrics shows incorrect and inaccurate information. The application crashes sometimes while it is being used for performing some tasks. This breaks the perceptibility principle, where the user does not get information on the current state of the system. As quoted by Jakob Nielsen, ‘The system should always keep the users informed and what is going on through appropriate feedback within reasonable time’.

**4 INTERFACE REDESIGN**

For re-designing Burn Boot Camp interface, I am choosing ***Card Prototyping***. As mentioned earlier, there are many re-designs that can be materialized with horizontal prototyping, but I am choosing the essential tasks for re-designing. The essential tasks are booking a camp, viewing the weekly protocol, showing the number of camps with the scope of vertical prototyping which provides more detailing on the two screens.

**4.1 Booking a camp with child-watch and viewing the weekly protocol:**

* Booking a camp redesign would be more like the existing with little changes. Open the application and click on ‘Book’.
* Booking a camp scroll will show all the available camp timings for the week as existing with trainer name, camp date and timing, but the new interface will show the workout for the day derived from the weekly protocol like ‘Metabolic conditioning’, ‘Speed and Agility’, ‘Lower body strength’, etc.
* Earlier, the camp timing would be highlighted after choosing and then it navigates to a new page, there a ‘Book’ button would be shown, after clicking that the camp would be booked. Re-design would have two buttons after right swiping the chosen camp timing. Left swipe can be used for canceling a camp. (*Appendix 9.6 Canceling a booked camp prototype*)
* One button can be used to book the camp and another to book the camp with child-watch. Child-watch are available only for certain timing, so that button can be hidden for child-watch unavailable camps.

**Graphical user interface, text, application

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***Figure 2 –***- Showing the re-designed prototype for booking camps with child-watch.

**Graphical user interface, text, application, email

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***Figure 3 –***- Showing the re-designed prototype for booking camps with no child-watch.

**4.2 Check the number of camps attended for the year:**

* Click on the ‘Profile’ tab, in the application, and make sure it is logged in with the username and password credentials.
* As per current design, Profile dashboard shows schedule, metrics, wallet and passes and at the top right below the name, it shows the number of camps attended from day one.
* Users are recognized with small accomplishment awards for attending 50/100/250 camps in a year. This cannot be viewed anywhere in the application as of today and it needs manual calculation. Re-design will show the camps for the current year by default, whole body analysis on BMI, weight and camps attended for the last 3 years with achievements.

**Graphical user interface, application

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***Figure 4 –***- Showing the prototype for viewing camps attended in current year and metrics.

**4.3 Viewing the weekly protocol**

This can be decommissioned, or users do not have to perform the task, as it is integrated in the booking camp re-design and would no longer be useful. Viewing the protocol is done through a series of navigation that takes a moderate cognitive load from the user (*Appendix 9.4 Steps for Viewing Weekly Protocol*). This can be integrated with the booking campinterface**.**

**5 INTERFACE JUSTIFICATION**

**5.1 Justification: Redesign**

The application defines the processor model of the user as they are experts about the interface, fit within human limits and it performs quantitative experiments in completing a task. The application has a great interface with easy usability, but it has some flaws. The processor model defines a user to be experienced in an interface, the tasks that are performed reflects something in the physical world and focus on the core values of the application. Based on feedback from them in interviews and application reviews, booking a camp, viewing weekly protocol, and the profile dashboard is re-designed.

**5.2 Justification: Resolving Weaknesses**

The goal of a user is to do a workout at a time and drop their children in the child-watch area. The tasks for achieving this goal are booking a camp which can be done through 3 clicks under ‘Book’ tab. In the same scroll under ‘Book’ tab, child-watch can be booked with 3 clicks. Viewing the weekly protocol would again take another 3 clicks under ‘More’ tab. This gives a higher cognition for the user and totally unnecessary. This can be re-designed by having a right-swipe for booking with or without a child-watch and a left-swipe for canceling a camp.

When I started using the interface as a novice user, I don’t know how to see the weekly protocol. I had to reach out to the front desk while going to the camp to understand that flow. This is not a great user experience; a user must go through a series of navigation which could not be identified easily in the application, and it increases the cognitive load to the user. The weekly protocol can be avoided by integrating the everyday workout in the same place where booking is done.

When a user is encouraged to focus on their fitness goals, attend camps, milestone achievements, an option to show camps for the current year would be helpful. The number that is currently shown does not state if it is for the year or for the whole tenure with Burn Boot Camp. This is an error in the interface, and it is confusing the user with misleading or missing information. Re-design would say “99 camps attended in the current year” and an option to view data from last 3 years.

**5.3 Justification: Preserving Strengths**

Despite few more flaws in the application apart from the weaknesses mentioned above like the ‘Buy’ tab which is not fully functional, there are strengths in the application. The application has a nice home dashboard to view the upcoming appointments and past few appointments. It also has ‘Rate and Review’ between 1 to 5 stars and can be reviewed with comments for the camp that was attended.

Profile viewing shows the schedule, passes like one-day pass or clinics, the wallet shows credit card information and recent transactions and an option at the top to edit personal information. The number of classes is currently shown in the profile tab, this would have loaded into the frequent user’s long-term memory and transferred over to the working memory while using the application. Adding additional metrics and number of camps for past 3 years would need some learning curve, but it can be transitioned easily as they are a read-only screen.

Booking a camp interface has the core strength of showing all the camp timing for the whole week. This is preserved in the same tab, but we are only reducing the navigation screens. It also has the ‘focus meeting’ tab to book focus meeting with the trainer for the fitness goal, progress, and improvements.

**5.4 Justification: Improvement Principles**

After the interface redesign, booking a camp would be much easier for the user. Combined with execution of booking a camp and viewing the protocol in the current interface, the re-designed interface would reduce from 9 navigation clicks to 2 navigation clicks. This would reduce the user cognition drastically and user can learn the interface in quick time. The re-design uses the *direct manipulation* principle efficiently using *haptic sensors*. Manipulating the interface using swipe-right and swipe-left has been a recent invention through haptic sensors. They are read through the finger motions moving towards left or right by ‘press and hold’ on the screen.

*Direct Manipulation* technique uses the *Affordances* principle with the re-designed interface. As quoted by Don Norman, ‘The presence of an affordance is jointly determined by the qualities of the object and the abilities of the agent that is interacting’. The initial tutorials or tips on the booking interface would make the user understand about swiping a particular row left or right. Since most users would be members, trainers, or staff, they are experts in the existing interface and could possibly be easily transitioned to the new interface. This would lead the interface to be ‘*invisible by design’*.

Expert users would understand ‘viewing the protocol’ is no longer useful, by visualizing a particular booking row from the scroll that shows the workout for the day, example, ‘Upper body strength’. The novice or new users would least care about such an interface if they visually see the workout for the day while booking a camp.

**6 EVALUATION PLAN**

**6.1 Evaluation Plan: Selection**

Re-designed interface can be evaluated based on the Evaluation methodologies defined in Chapter 3.6 for HCI. For this evaluation plan, I will choose ***Qualitative Evaluation*** because of the fact, the interface is matured with a certain community of users and level of details they provide would be more accurate and efficient. In this context, the plan would also adhere to terminologies followed for evaluation like reliability, validity, generalizability, and precision. The plan is to show the designed ***Card Prototype*** along with the existing interface in two exercises, interviews, and survey. Interviews would be done with a few sets of people who are gym members, trainers and staff who are well exposed and expertise with the existing interface. Surveys would help get feedback from the public who are not familiarized with the interface. It can be evaluated based on the prototypes or by installing the application.

**6.2 Evaluation Plan: Description**

Designing a qualitative evaluation with both interviews and surveys would help a better insight for the designed prototype from experienced and novice users. *Interviews* on the design evaluation would be with individuals who have prior experience, it is synchronous with three prototypes. Post-event protocol can be followed to get the feedback once they evaluate the prototypes. *Surveys* on the design evaluation would be with classmates who have good knowledge on HCI principles and can provide additional insight for improving the interface. The survey questions would be framed by emphasizing both the existing and re-designed interface in the survey description.

*6.2.1 Evaluation Plan: Description, Interviews*

Based on the re-designed prototype that targets the essential tasks using the interface on Burn Boot Camp application, including booking a camp, viewing the weekly protocol, and viewing the number of camps attended for the year, the *interview* would be conducted in 3 training facilities located nearby my house. The boot camp facility is limited to certain hours, but between each camp there is a break of 15 minutes where the current camp members socialize with each other while next camp members arrive. For example, camp starts at 8 am and ends at 8:45, then a 15-minute break, the next camp starts at 9 am. I will use this 15-minute window to show the card prototypes and emphasize on the challenges with the existing interface. If possible, I will also try to show the interface to the same users I recruited for needfinding and make sure the questioning would not fall into biasing.

Below are the questions that would be asked during the interview,

1. Basic questions like Age, Gender, and Occupation
2. How many camps do you attend during a week?
3. When and how do you book the camp before arrival?
4. Where you able to understand the re-designed interface for booking a camp?
5. What is your opinion on integrating child-watch option while booking the camp?
6. What is your opinion on integrating weekly protocol while booking the camp?
7. The right swipe to book a camp with or without child-watch and left swipe to cancel the booked camp, at a particular row, do you think it is challenging?
8. How satisfied are you to see the number of camps attended for the current year in the Profile dashboard?
9. Have you explored ‘Buy’ interface, if so, what are your thoughts?
10. Would you be interested in a dark/bright mode toggle?
11. Any additional feedback on the prototype?

*6.2.2 Evaluation Plan: Description, Surveys*

Using interviews, I would be able to get evaluation from experienced users at boot camp facilities whereas surveys would help in getting feedback from novice users. They can be served as a third eye to provide insights based on their knowledge on HCI principles. To do the survey, I would be framing questions in PeerSurvey and share it in the Ed Discussion forum with current semester classmates, probably nudge them more frequently to get 25 responses. Since the surveyors won’t have knowledge on the application, I will provide detailed steps on booking a camp, viewing the number of camps attended for the current year and its current challenges.

Below are the questions that would be asked in the survey,

1. Basic questions like Age, Gender, and Occupation
2. Do you do any kind of physical activity? If so, please, describe or enter ‘None’?
3. For Booking camp, read the description, compare the existing interface with re-designed prototype using images below, express your thoughts on performing a task.
4. Re-designed prototype uses a right swipe to book a camp with or without child-watch and a left swipe to cancel the booked camp, please provide your opinion on invisibility of interface and haptic sensors.
5. By viewing the profile dashboard, what is your takeaway on the re-designed prototype.

*6.2.2 Evaluation Plan: Biasing*

*Social desirability bias*: Since I am interviewing the same community people who are members of boot camp and are experts in the interface, they might talk in favor of me due to the efforts I have put in re-designing the interface. To mitigate the bias, the idea is to meet people from 2 other camps close to my home. They are not familiar with me and would provide honest feedback.

*Cognitive and Confirmation bias*: As a personal user of the interface, I might think the convenience of re-designing the interface from my perspective. As David Joyner mentioned, I like to follow the principle of “You are not your user”. The application is used by community members, and they are at different demographics and their ages vary from 17-65. So, making it a simplified and efficient interface to accomplish the tasks would mitigate the bias. Interviewing and surveys would also help evaluate the re-designed interface, embrace their feedback, get more data points with the prototype, and try to improvise on the design.

*False Consensus bias:* The re-designed prototype focuses on tasks performed by other members in a day like booking a camp, viewing weekly protocol, the number of classes attended and reviewing the camp. New members try to explore other links like purchasing trial camps or clinic lessons, but I didn’t take the effort to re-design them. This is false consensus bias where the thought process was to re-design known items to me and thinking that other people would share similar opinion. This can be mitigated in the next iteration of prototyping and needfinding. As mentioned earlier, I have plans to re-design the interface for ‘Buy’ and ‘More’ tab for next iteration.

*Recall bias:* When interviewing with the same community members or trainers, they tend to forget what was discussed a couple of weeks back. The re-designed prototypes comparing with existing interface would help them recollect memories and the notes that was discussed can recollect things. However, it won’t stop them from evaluating the new interface if there are flaws.

*Framing bias:* When doing a survey, it is more likely that the questions might be framed based on my opinions. Questions with likert, rating, matrix may end up falling into framing bias category, to mitigate that, I have provided the prototype and framed open-ended questions, leaving the surveyors choice to provide their responses freely.

**7 EVALUATION EXECUTION**

**7.1 Pragmatics**

Interview was conducted with 19 different participants in 3 different facilities. There were 15 members, 2 are trainers, 2 are administrative staff in each facility. The interview was around for 15 minutes. The ages of users varied between 20 and 60+. Surprisingly, there were 2 new members who might have some learning curve to understand the interface, so interviewing them was helpful. The introduction part was to go ask them how and when they book the camp, then asked the current challenges they face in the interface. Then, I gave a brief overview of the re-designed prototype on booking the camp along with child-watch, integrating weekly protocol while booking the camp, and the profile dashboard. Based on the prototype, I gave a few minutes for their *thought process* and asked few questions about the re-design on the two screens, and some open questions on other interfaces in the application.

**7.2 Raw Results**

*How many camps do you attend during a week?* On an average, out of 6 camps, all the participants attend 3-6 camps a week. They attend during different times of the day. 9 members are consistent on the same time every day. (*Appendix 9.10 Raw Results from the interview).*

Chart, bar chart

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***Figure 5 –***- Interview Raw results, showing evaluation from members about the new prototype.

*When and how do you book the camp before arrival?* Most of the members, book the camp while driving to the camp or while getting ready at their home. This would be around 15 minutes earlier. This question was asked to understand the cognitive load and time consumption, it would take to book the camp, child-watch and view the weekly protocol in the current interface versus the re-designed prototype.

*Re-design booking interface:* Most of them liked the new design on removing child-watch from the booking scroll and integrating the weekly protocol, because if a member must attend the camp with their children (*goal*), they must book the camp (4 clicks), sign-up child-watch (4 clicks), viewing the weekly protocol (3 clicks) in the current interface (*task*). The new interface does this in just 2 clicks. But 5 members needed some explanation on button placements with a right-swipe and a left-swipe which could be achieved through learnability principle.

*Profile Dashboard:* Almost all the members, likes to see metrics for their self-motivation and achieve their goals. The current profile dashboard does not help with that. Re-designed prototype shows the current classes attended in the year and the history of the last three years which 19 interview participants were excited about.

*Have you explored ‘Buy’ interface, if so, what are your thoughts?* Only 5 members have explored that interface and they were not able to achieve anything useful out of it. They felt it may be made useful

*Additional Feedback?* On the ‘More’ tab, member reads barcode for checking-in to the camp. The members felt it could be placed in the home page for easier use.

*Appendix 9.11 Raw Results from the survey,* shows the survey results from classmates and it is integrated in my analysis and next steps.

**7.3 Analysis**

Based on these results, it clearly marks the satisfaction from various members about the profile dashboard and booking camp re-design interface. The new design would need some learnability and memorability, but the cognition would be less, and it would be efficient compared to the current interface. As suggested, adding the barcode read in the home page would be a nice feature, so I am planning to implement it (*9.7 Home page with barcode reader prototype*). The Profile dashboard needs some work to include body metrics of a member after focus meetings. The data from the number of camps interests most users, and it would be a great addition.

**7.4 Next Steps**

Based on the qualitative evaluation using card prototypes and open feedback, I will work on implementing the interface for ‘Book’ and ‘Profile’. In the next needfinding exercise, I will plan to re-design ‘Buy’ and ‘More’ interfaces.

**8 REFERENCES**

* Reviews link for application on app store, https://apps.apple.com/us/app/burn-boot-camp/id1105536643?see-all=reviews
* Reviews link for application on play store, https://play.google.com/store/apps/details?id=com.fitnessmobileapps.burnbootcamp&hl=en\_US&gl=US&pli=1

**9 APPENDICES**

**Appendix 9.1 Steps for creating a new profile (Current Interface)**

**Graphical user interface

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**Graphical user interface, text, application

Description automatically generated**

**Appendix 9.2 Steps for Booking Camp (Current Interface)**

**Graphical user interface, application, Teams

Description automatically generated**

**Appendix 9.3 Steps for Booking a Child-watch (Current Interface)**

**Graphical user interface, application

Description automatically generated**

**Appendix 9.4 Steps for Viewing Weekly Protocol (Current Interface)**

**A picture containing graphical user interface

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**Appendix 9.5 Profile Dashboard prototype with metrics (Re-designed)**

**Graphical user interface, website

Description automatically generated**

**Appendix 9.6 Canceling a booked camp prototype (Re-designed)**

**Graphical user interface, text, application

Description automatically generated**

**Appendix 9.7 Home page with barcode reader prototype (Re-designed)**

**Graphical user interface, text, application

Description automatically generated**

**Appendix 9.8 Reviews from App Store**

**Graphical user interface, text

Description automatically generated**

**Appendix 9.9 Reviews from Play Store**

**Graphical user interface, text, application

Description automatically generated**

**Appendix 9.10 Raw Results from the Interview**

**A piece of paper with writing

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**Appendix 9.11 Raw Results from the Survey**

**Graphical user interface, text, application, table

Description automatically generatedGraphical user interface, text, application

Description automatically generated** **Graphical user interface, text, application, email

Description automatically generated**