Rebecca Suarez, Aidan Wang-Fan, Ava Lorenzana, and Sam Kelson
ENGR 11A
Professor Roy and Professor Rogers
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Guitar Buddy: Design Review

Part 1: Analyze

After pitching Guitar Buddy to the class, testing out our first prototype, and meeting with the "Tactile Map" Team individually, our group made huge progress in regards to the iterations that will be made to our final prototype. The main piece of feedback that we received from others was how to make our product accessible to as many people as possible. When we say accessible, we mean accessibility for many reasons, including but not limited to the size of our product, how many chords one can play, and how to attach it to different types of guitars. The last point previously stated was the pain point that we wanted to tackle first. The reason as to why the last point is so important is simple: not everyone realizes that guitar necks differ depending on the type of guitar (i.e. electric vs. acoustic). Thus, we had to figure out how to make "Guitar Buddy" accessible for all different types of guitars. The next reason as to why this pain point is important to overcome is the fact that our first prototype fits very snugly on the guitar. Although this may not seem like a bad thing, the reason as to why this can be a downside to our prototype is because it can cause damage to the guitar itself. We then decided that we needed to make an iteration to our prototype to alleviate the risk. Therefore, after realizing the pain points, as well as the wants from this product, our main goal was to create our second prototype as accessible to different guitars as possible.

Thus, after a long and thorough meeting, the Guitar Buddy group decided to get started on the second prototype. When establishing our second prototype on Fusion360, we decided to tackle the main piece of feedback: making the product fit various guitar necks that would not damage the sides of the guitar. After establishing our second prototype and then printing it using the Prusa Mini + 3D Printer, we definitely overcame one of the pain points of the Guitar Buddy product. The final step to this process was to ask for prospective consumers to test our product once again. Here, we wanted to gather more information on how we can improve our second prototype so that it can reach its fullest potential. With that being said, we gathered more information, captured it on a feedback grid, and are now deciding how to implement this feedback with our next prototype.

Part 2: Prioritize

Throughout our creation of Guitar Buddy, we have discussed the wants and needs of our product with prospective users. From here, we have discovered our top four guiding principles: partner principles, design principles, designer principles, and accessibility principles. In order to explore this further, we conducted interviews with different audiences that could create valuable insight to the needs of our consumers. In our interviews, we got insight from a beginner guitarist, intermediate guitarist, advanced guitarist, and an occupational therapist. Through these interviews, we collected common patterns, questions, ideas, and criticism that arose, in order to

translate them into our next prototype. A quick overview of what we need to prioritize are as follows:

1. **Feedback/Partner Principles**: Collaborate with other teams in ENGR 11A or prospective consumers in order to give us areas of product improvements. Real-time feedback is essential to the final prototype of Guitar Buddy.
2. **Design Principles**: The final product of Guitar Buddy should hit on the guitar, but not too snug where the guitar will be volatile to damage. Final prototype of Guitar Buddy should be simple and beginner friendly.
3. **Designer Principles**: As part of the Guitar Buddy team, we should stay open and adapt to recommendations that are being suggested by our target audience. Iteration to each prototype is what will ensure a successful final product.
4. **Accessibility Principles**: Guitar Buddy must fit various types of guitars without causing damage to the guitar itself (i.e. scraping the neck). It should also be easy to use for any user who suffers from any physical challenges (i.e. muscle weakness, arthritis, etc) or just an average guitar player.

Based on all these variables, we have determined what we should focus on next to ensure that the useability and functionality is efficient for users.

Part 3: (Re)Define and Ideate

Redefining: Based on the information we have gathered, the Guitar Buddy team has decided to redefine our "How Might We.." statements into the following:

- Insight Struggles: "How Might We" design a product that fits most guitars and assists with finger placement?
- Long-term Fatigue & Discomfort: "How Might We" create a lightweight and sleek product that will allow our users to play a guitar for a longer period of time?
- Product Recommendations: "How Might We" showcase our mission statement when promoting our product to our target audience?
- Arthritis Specific: "How Might We" show users with arthritis that Guitar Buddy is simple and easy to use?

Ideation: Based of our redefinitions, we the guitar buddy team has decided to brainstorm more ideas to improve our product:

1. Include padding for the sides of the product to prevent damage to the guitar itself
2. Add visual indicators to assist beginners
3. Ingrain chord letters on each button to highlight the specific chords
4. Print prototype with a different material to increase comfortability (not use PLA filament)
5. Offer a foldable version of Guitar Buddy so it's easier to store
6. Have an elastic for final version of Guitar Buddy to make it accessible for any guitar neck
7. Make different versions for different guitar necks
8. Have some type of feedback system to improve product in the future
9. Make song specific versions of Guitar Buddy for beginners
10. Design a child-friendly version of Guitar Buddy