


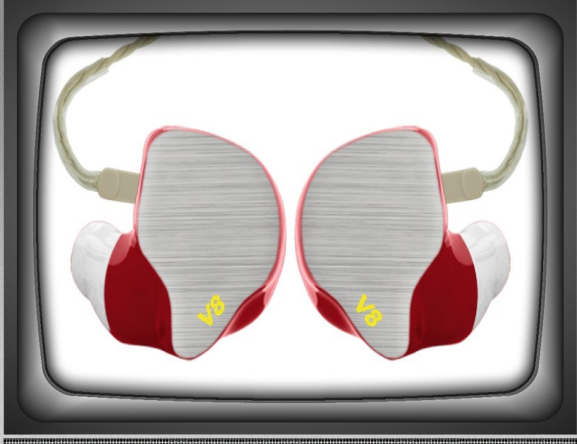









## Project Proposal

- The problem or need that your interface will address.

As the variety of products increases, many people desire their products different from others'. Although there are some personalized products in the market, most of them are limited to color choosing and name engraving. Among those that offer more functions and services, we also found it hard for the customers to describe what they want accurately and easily. We believe that a user-friendly interface would really be the solution for solving their needs and become the mean for bridging the gap between people's thoughts and the actual implementation of their customized products. The interfaces existed in the market right now are hard to manipulate as they only provide a 2D, front view of the device. It's hard for them to give the users a holistic view of their products. Some of the members in our group are great fans of customization but have experienced the anxiety and anger of not getting the products they expected. 3D-orientated interface for customization is rare in the market, though it would bring a great convenience to people. Therefore, we are going to pick earphones as an example and create a more user-friendly interface for people to design their own unique earphones. In fact, we are going to volunteer our project to a new startup company that creates customized ear monitors on our campus called Omniear. We will get to know their product--know what fields and aspects are available for customization; learn their specializations--learn how we can emphasize their advantages and strengths on the interface to attract more attentions of users; and design a customized user interface for their customized ear monitors. Our project will be embedded in their company website after it's fully tested.

- A brief overview of existing solutions to this problem and why they fall short.

Here is an example of an existing solution of what customized earphone company 1964 has:

MODEL	DESIGN	ARTWORK	CORD	OPTIONS
<b>SHELL</b> STANDARD GLITTER 				<b>YOUR DESIGN</b> 
<b>FACEPLATE</b>  STANDARD GLITTER 				1964-V8: 899.00 <b>CANAL COLOR</b> LEFT: WHITE (TRANSLUCENT) 15.00 RIGHT: WHITE (TRANSLUCENT) 15.00 CORD COLOR: BEIGE CORD LENGTH: 48" <b>FACEPLATE COLOR</b> LEFT: BRUSHED ALUMINUM (PREMIUM) 30.00 RIGHT: BRUSHED ALUMINUM (PREMIUM) 30.00 <b>IMPRESSIONS: SENDING NEW</b> <b>LOGO COLOR</b> LEFT: YELLOW RIGHT: YELLOW <b>LOGO TYPE</b> LEFT: V8 RIGHT: V8 <b>NAME ON CASE:</b> <b>SHELL COLOR</b> LEFT: RED (SOLID) RIGHT: RED (SOLID)
« PREVIOUS		L OFF  ON  <b>NINETEEN SIXTY FOUR EARS   CUSTOM IEM CONSOLE</b>  OFF  ON R		<b>SUB TOTAL:</b> \$989.00
<b>CANAL</b>  		NEXT »		

Their designer serves the simple purpose of letting customers choose the models, colors, and patterns for their earphones. However, the interface is fairly simple that doesn't have much interaction with the users. There are many regions where one could do personalization (the "shell", "faceplate" and "canal"); however, if they don't have enough experience, it's really confusing for them which region of the earphone the site is referring to. In addition, the company has a sweet service of customizing the left ear and right ear differently. While it could be a really smooth action of choosing, the company has awkward switches on the bottom of the picture that they need to turn them on or off. Due to the complexity of all the aspects of the customerization, it makes it really hard for customers to select. Afterall, the interface just doesn't look comfortable at all.

Here is another example of customized earphone:



This designer has our basic idea of letting the customers manually select the specific region they want to work on. However, the selection will result in a rigid box that only closes when the minimize key, “-”, is pressed. It doesn’t follow our convention of clicking on the side to minimize a helper window. In addition, the company also has a sweet service of letting the customers customize their earphone cable. However, the cable is not showed on the picture, which doesn’t give the customer a clear picture of what their earphone will be like as a whole. The interface, overall, involves too many clicks. We think a little bit of animation will smooth the whole process and bring a better experience to the customers.

- The proposed solution and its value proposition (what users will have to do and how they will benefit).

First of all, we plan to make use of 3D images/three-view images to make the model more visualized for users. We got the idea from “NikeiD” and other online shopping website. By having a full angle view of the customized earphone, the users will have a better idea of their final products when they are designing the earphones. To make the process more convenient, we’ll also add a hover feature that allows users to hover over to select different parts of the earphones to customize. Since people are building their own earphone, we will provide as many choices as possible, such as the Motorola Website, they made the customer make their own phone; they choose every part of the phone on their own. And this is our goal to achieve. Make the customer build up his or her own earphone. For the interface, we will try to make it look very simple and easy to use. Unlike the existing websites that looks very complicated. The user can design their dream earphone gradually. We will set up the process of which one goes first and

second. So the user could just follow the step, by the time the users up to the last step, they will be able to see the earphone they designed in 3D image to give them a better understanding what does the final earphone will look like.

There are many benefits the interface will provide for the users, for example:

- Translucent/Opaque/Special Pattern more visualized to user
  - Allow users to upload their own images (more customized UX)
  - Easier to customize left/right earphone separately
  - Require user to have as less click as possible to get what they want
- 
- Translucent/Opaque/Special Pattern more visualized to user
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  - Require user to have as less click as possible to get what they want

- The target audience that will use this interface.

Our target audience will be

- The context of use relevant for the project. For example, think about the location of use (st the user mobile or in the office?), activities (what activities might be interleaved with the use of the interface?), placement (where will the interface or underlying hardware reside?), time of use (morning, evening, all day?), frequency of use (sporadic, multiple times per day?), etc.

For the interface we are creating, people will use this most likely during their leisure time. Since our interface's theme is about personalized ear monitor, people who want to have a new pair of earphone or people who are seeking unique earphone experiences would surf our interface to find information they may want to see. The location of use could be anywhere, because it does not require anything in order to view the interface. People who are working in the office, when they are tired of the regular headphone/earphone. They could go to our interface to find out the one that is belong to them. People who uses phones or tablet on the train or home, they can also visit our interface. Therefore, it is really depend on when people start to thinking about getting a new pair of earphone.

Since our interface will mainly focus on personalized ear monitor, the activities might be interleaved with the use of our interface will probably be when people are seeking high quality of music, and unique using experience. When people having a regular earphone, things like the earphone drops happen all the time, this is the time when people start to think about unique earphone experience. This is the time when our interface will show its value.

Our interface will be placed into the high-level technology category, just like the Phone Company and Laptop Company such as Apple, Samsung, Beats, and Boss etc. Our interface will focus on how to make people get involved in technology since they can build their own

earphone. We all know there are many headphone/earphone companies that provide us luxury earphone experiences, but there are not many companies who actually see it at a user point of view.

Since our interface is helping people to seek unique earphone experiences, it does not really matter what time of the day people most likely going to use. However, since people tend to have more time at night, we will assume that the interface will be visit the most about nighttime and weekend, when people have more free time. Because the interfacing we are trying to create is a personalize ear monitor interface, we think people will not frequently visit our website unless it is needed. For example, when we have a phone, we usually do not visit a phone website unless they want another one. Therefore, we think the frequency of visiting our interface should be around once a week. However, we know there are many people, who are into unique earphone experiences; therefore, it is also likely that they will visit the interface very often to check out the new feature. When people decided to buy a personalized ear monitor, they will visit the interface more frequently, because first, the price is not cheap, secondly, we will provide many choices to the customer, so they could find their best fit.

- How the implementation will be scoped to make it feasible for the course.

We will implement the basic personalized design interface with graphics and mainly focus on the front-end of the project. Specifically, we'll use HTML and CSS code to construct the layout and style of the interface. In order to better enhancing the user experience, we are going to make it responsive to different devices, such as mobile phones, tablets, and laptops using Foundation framework or Bootstrap. We expect some of our users will be often on-the-go, and there is a large chance they will access our UI from their mobile devices, so it is important for our UI to adjust accordingly to different screen sizes. Additionally, we will be implementing animations with Javascript on our UI, such as the full angle view of the model, the hover to choose parts effects, etc.

On the back-end side, one possible implementation is to create a database that has all the images for all the color combination, and the system will pull out the corresponding images (12 images per combination for 12 different angles) based on user's customized choices. The problem with this implementation is the potentially huge database size that slows down load speed, We will also try to find other existing back-end structure online that will improve the loading speed.

- The identity of at least three users who have agreed to spend time with your group for user and task analysis and later for user testing. You must also submit a self evaluation for the group.

We asked some of our friends if they are willing to be our test users and help us improve the project. Finally, we found three perfect users, they have different majors, jobs, hobbies, and they can provide us advice in different aspects:

Steven is a Computer Science major. He has taken CS465 and CS467, two major UI Design course in U of I. He has done some research on specific web UI, either. He can give us some technical advice about implementation, such as function utilities, design principles or artistic of the interface.

Yuhao is the Product Manager of a startup company named OmniEar. Specifically, our customized ear monitor UI is implemented for their company and we hope they can use our design on their website. Yuhao can give us the useful advice about the design. He will decide if the company want to use our UI design on their website, so his advice will be very important to us.

The last user will be a potential customer who will likely use the UI. He is a music lover and ear monitor fan. He is enthusiastic about getting new, high quality ear monitors. So he can give us most valuable feedback about using the UI. Our implementation will be mostly depends on customers' satisfaction.

# **Project Proposal**

## **iEar—Customized Ear Monitor Design Interface**

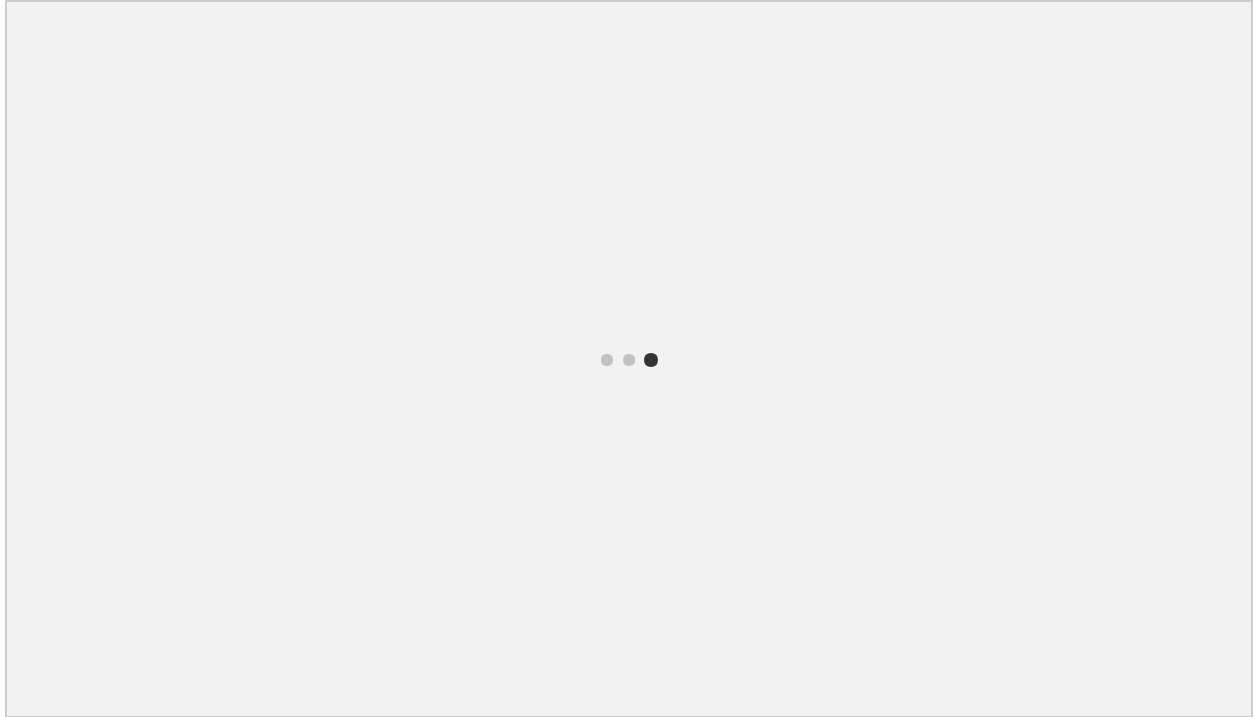
Group25: Yujia Dong, Ziyun He, Jiexin Lyu, Amy Chen, Zixuan Zhang

### The Need

As the variety of products increases, many people desire their products different from others'. Although there are some personalized products in the market, most of them are limited to color-choosing and name-engraving. Among those that offer more functions and services, we also found it hard for the customers to describe what they want accurately and easily. We believe that a user-friendly interface would be a great solution for solving their needs and become the mean for bridging the gap between people's thoughts/ideas and the actual implementation of their customized products. The interfaces existed in the market right now are hard to manipulate since they only provide a limited vision, which, most of the time, is a 2D front view of the device. It's hard for the users to get a holistic view of their products. Some of the members in our group are great fans of customization but have experienced the anxiety and anger of not getting the products they expected. 3D-orientated interface for customization is rare in the market, though it has a great potential to bring huge convenience to people. Therefore, we are going to pick earphones as an example and create a more user-friendly interface for users to design their own unique earphones. We are going to make a 3D-orientated model which users could just simply rotate and select the specific region they want to design. In fact, we are going to volunteer our project to a new startup company called Omniear that creates customized ear monitors on our campus. We will get to know their product and what fields and aspects are available for customization, learn their specializations and how we can emphasize their advantages and strengths on the interface to attract more attentions of users and design a customized user interface for their customized ear monitors. Our project will be embedded in their company website after it's fully tested.

### Existing Solutions

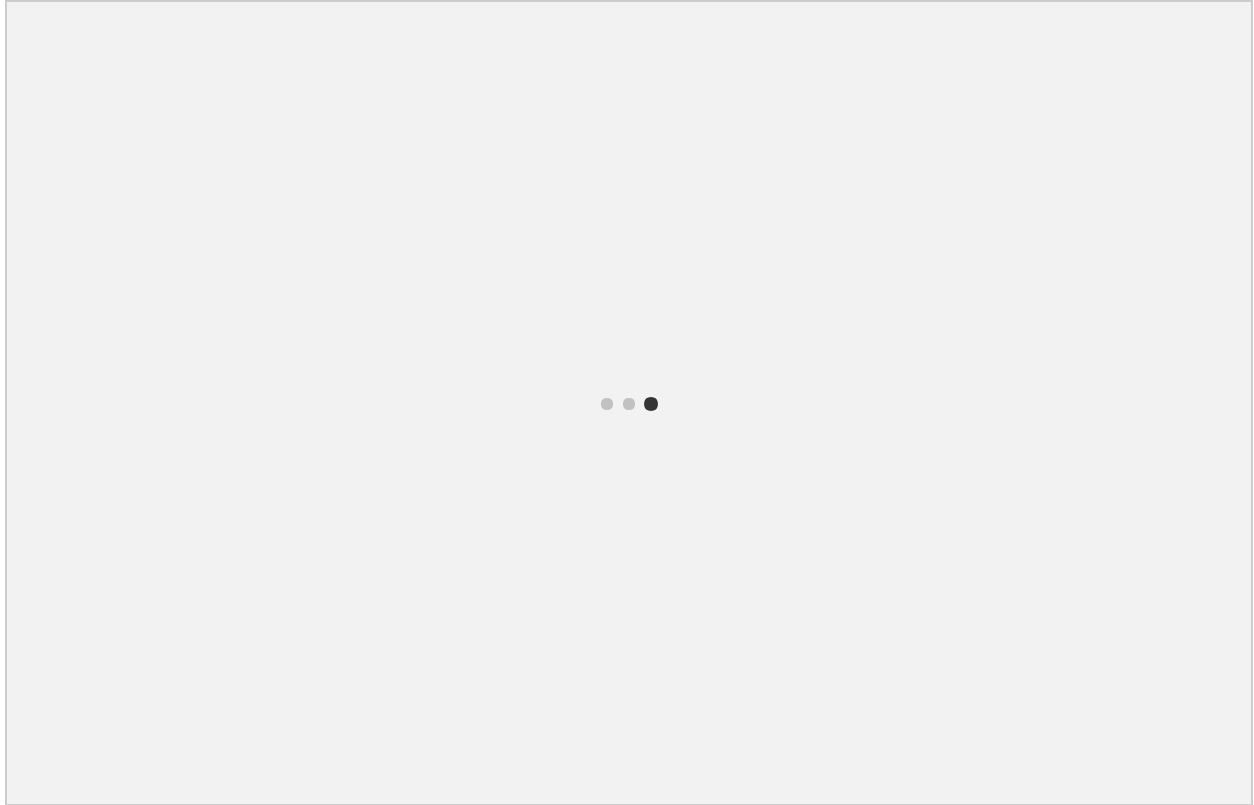
Here is an example of an existing solution of an earphone company:



Their designer serves the purpose of letting customers choose the models, colors, and patterns for their earphones. However, the interface is fairly simple that doesn't have much interaction with the users. There are many regions where one could do personalization (the "shell", "faceplate" and "canal"); however, if the users don't have enough experience, it's really confusing for them which region of the earphone the site is referring to. In addition, the company has a sweet service of customizing the left ear and right ear differently. While it could be a really smooth action, the company has awkward switches on the bottom of the picture that the users need to click through. Due to the complexity of all the aspects of the customization, it's really hard for customers to portray the model they are looking for. After all, the interface just doesn't look comfortable at all.

Here is another example of a certain customized earphone:





This designer has our basic idea of letting the customers manually select the specific region they want to work on. However, the selection will result in a rigid box that only closes when the minimize key, “-”, is pressed. It doesn’t follow our convention of clicking on the side to minimize a helper window. In addition, the company also has a sweet service of letting the customers customize their earphone cable. However, the cable is not showed on the picture, which doesn’t give the customer a clear picture of what their earphone will be like as a whole. The interface, overall, involves too many clicks. We think a little bit of animation will smooth the whole process and bring a better experience to the customers.

In addition, both of the interfaces only show a 2D front view of the models, which is really limited and confusing for users. We are going to change it by presenting the users a 3D rotating model.

### Proposed Solution

The goal for this user interface is to facilitate user to choose

First of all, we plan to make use of 3D images/three-view images to make the model more visualized for users. We got the idea from “NikeiD” and other online shopping website. By having a full angle view of the customized earphone, the users will have a better idea of their final products when they are designing the earphones. To make the process more convenient, we’ll also add a hover feature that allows users to hover over to select different parts of the earphones to customize.

- Translucent/Opaque/Special Pattern more visualized to user

- Allow users to upload their own images (more customized UX)
- Easier to customize left/right earphone separately
- Require user to have as less click as possible to get what they want

### Target Audience

Our target audience will be audiophile that's looking for good headphones, or just people that simply love music and want an affordable customized headphone for themselves.

Customizable headphones are of a higher end and they usually come with a premium price, which mean a lot of the younger people or students will not be able to afford it. But due to the pricing of this headphone company, the target has shifted to the younger generation. While we understand that the audience is still the very small portion of the population, we still want to make the experience different than what other companies has to offer. People that get on this website can usually divide into three types:

- People that have spare time and just exploring musical products, they might not even need a new headphone but they are just interested what options this company has to offer.
- People that want to buy a new set of headphones, but has no clue what they want yet. They might be comparing different headphones from different company, and this is a critical time to stand out among others
- People that knows they want a headphone from this company, and they know what component and design they want, they just want to customize they headphone as good as they can.

### Context of Use

For the interface we are creating, people will use it most likely during their leisure time. Since the theme of our interface is about personalized ear monitor, it's intended for people who want to have a new pair of earphone or those that are seeking unique earphone experiences. The location of use could be anywhere. Since we are embedding our interface in a website of an earphone company, it does not require anything more than a web browser in order to view the interface. People sitting in the office could view our interface through their desktop while others might find tablet or phone more convenient for them. Therefore, the context of use really depends on when people start to think about getting a new pair of earphone of their own design.

The activities interleaved with the use of our interface will most likely involve people who are seeking unique user experience while maintaining the high quality of the product. We trust the quality of the products from Omnihear and that's why we are designing the interface to facilitate their user experiences. When people are tired of having the same earphones as the other people, they will turn their attention to customized ones. This is the time when our interface will show its value.

Our interface could be potentially placed into the website of any earphone company such

as Beats and Bose. It will focus on making people get involved in personalized technology since they could build their personalized model through our interface. We all know that there are many headphone/earphone companies that provide luxurious earphone experiences, but there are not many companies who actually see it at a user point of view. Our interface makes it possible.

Since our interface is trying to help people to seek unique earphone experiences, there is not a specific time that the users would be browsing more frequently than other times. However, since people tend to have more free time at night, we will assume that the interface will be visited the most in nighttime and weekend. We also think that earphones are additional needs that people will not visit our interface or the website unless they are interested or in a desperate of needing one. For example, we are less likely to browse a phone website if we already have a phone. However, for the people who are actually interested in customized earphones, they will be visiting our website much more frequently. They would be going on the website to check out new features, to compare models with different companies, and maybe just to learn different models because they are interested. Therefore, we are facing two kinds of customers: people who enjoy customized earphones in general and people who need one after a certain period. People who see it as a hobby will give us more regular visiting frequency and the frequency of people actually need it is more random because you never know when someone's earphone will be broken.

### Implementation

We will implement the basic personalized design interface with graphics and mainly focus on the front-end of the project. Specifically, we'll use HTML and CSS code to construct the layout and style of the interface. In order to better enhancing the user experience, we are going to make it responsive to different devices, such as to mobile phones, tablets, and laptops using Foundation framework or Bootstrap. We expect some of our users will be often on-the-go, and there is a large chance they will access our UI from their mobile devices, so it is important for our UI to adjust accordingly to different screen sizes. Additionally, we will be implementing animations with Javascript on our UI, such as the full angle view of the model, the hover to choose parts effects, etc.

On the back-end side, one possible implementation is to create a database that has all the images for all the color combination, and the system will pull out the corresponding images (12 images per combination for 12 different angles) based on user's customized choices. The problem with this implementation is the potentially huge database size that slows down load

speed, We will also try to find other existing back-end structure online that will improve the loading speed.

### Test Users

We asked a variety of people if they are willing to be our test users and help us improve the project. At the end, we found three perfect test users that have different majors, jobs, hobbies, and would be willing to provide us advices from different aspects:

- Yuhao Liu is the Product Manager of the startup company OmniEars, whose website will potentially incorporate our user interface. Yuhao will give us advices from a company point of view. A good interface should take care of both ends. While we are trying to make a convenient interface for the users, we also need to make sure that the company is able to receive the information correctly. This will be a lot of involvement with the company to make sure we are producing something that they have the control over. We would definitely try with him dozen times before we bring it to his customers.
- The second user is called Aaron Mann who is a potential customer who will likely use the UI. He is a music lover and ear monitor fan. He is enthusiastic about getting new, high quality ear monitors. So he can give us most valuable feedback about using the UI. Our implementation will be mostly depends on how he's interpreting the UI and revise it from his feedback.
- The third person is a student in CS major. He has taken CS465 and CS467 and will give us a more technical overview of the whole interface. He might have suggestions of how to make the interface better in terms of implementation, function utilities, design principles or artistic side of the interface.