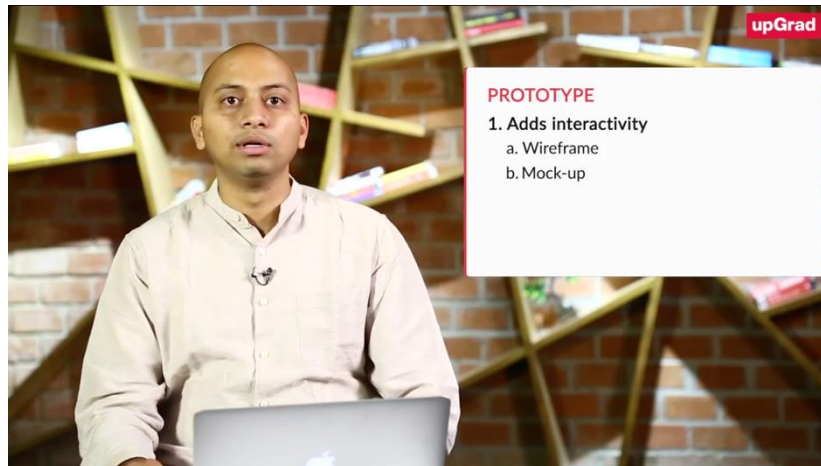


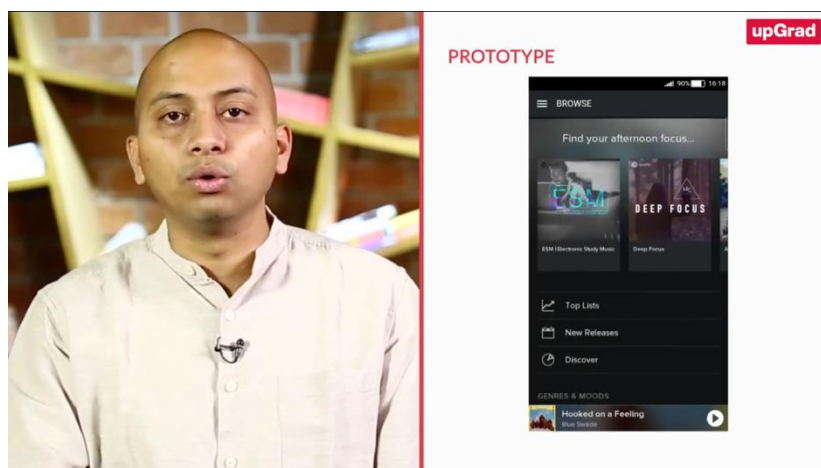
Transcription

Prototype



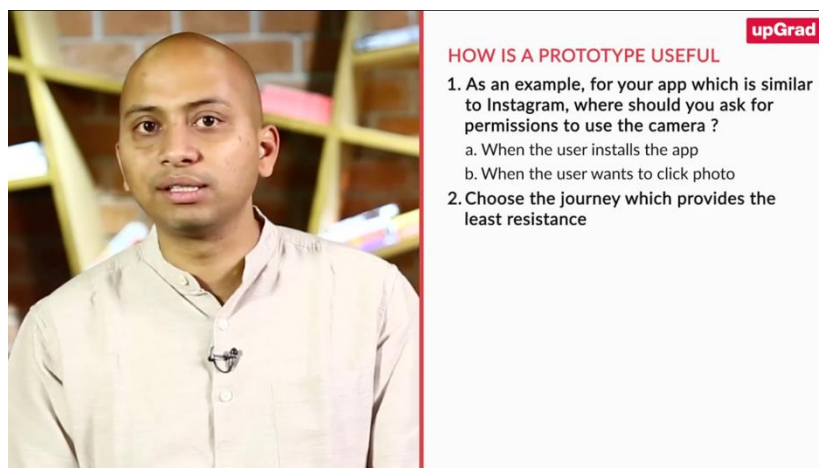
A prototype is the first stage where you can add interactivity and enable others to play with it. This allows you to explore the user interface and look for problems. You can add such interactivity to either wireframes or to your mock-up. Both of these can help you further refine your idea and create a prototype for the product. You can add links also called redirections to a specific screen or area in your prototype. You can add different screens and directions where these links could take you. In this stage, you determine the usability of the product, check for the user funnel and add call-to-action for each page. These concepts will be covered at a later stage, but let me give you a brief overview of what it is.

By usability, we understand how easy it is to use the product. For our target users, the user funnel comprises of various steps the user goes through before reaching the final object. A call to action is the action that user takes on the page. Different levels of interactions result in different ways to use the prototype. We will explain you different type of prototyping in detail at a later stage.



A prototype helps you clearly communicate the vision of the product. For early-stage startups, it can also help in recruiting people or raising money from angel investors. Here is a sample prototype of a screen. As you can see, interactions is limited in this prototype. Usually, there are hot spots in the form of boxes which can take you to a new screen or page. It may also show basic gestures on the mobile surface, mobile or surface prototypes.

Other thing to notice here is the type of interactions. Once you log in to Spotify app, you are shown in the prototype, you will see two types of scrolls. The first scroll is horizontal and then, when you look at the album's based on your taste, the second scroll is vertical where you can choose genres and moods. You have to keep your users in mind when deciding what kind of scroll goes in which place?



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HOW IS A PROTOTYPE USEFUL

1. As an example, for your app which is similar to Instagram, where should you ask for permissions to use the camera ?
 - a. When the user installs the app
 - b. When the user wants to click photo
2. Choose the journey which provides the least resistance

How is making prototype useful? Let us assume that we have an app similar to Instagram in every aspect. You are faced with the question, where do I ask permission to use the camera within the app? Should we ask the permission when you first install the app or should we ask them when the user wants to click their first photo? You can understand the best way to do this by creating prototypes depicting both user journeys and ask a few sample users to test this.

And then you choose the version which provides the least resistance. The user journey, followed by Instagram for posting a picture is as follows: user first logs into the app. User clicks on the left-hand side of the camera, permissions related to the photos are asked now, user is allowed to post.

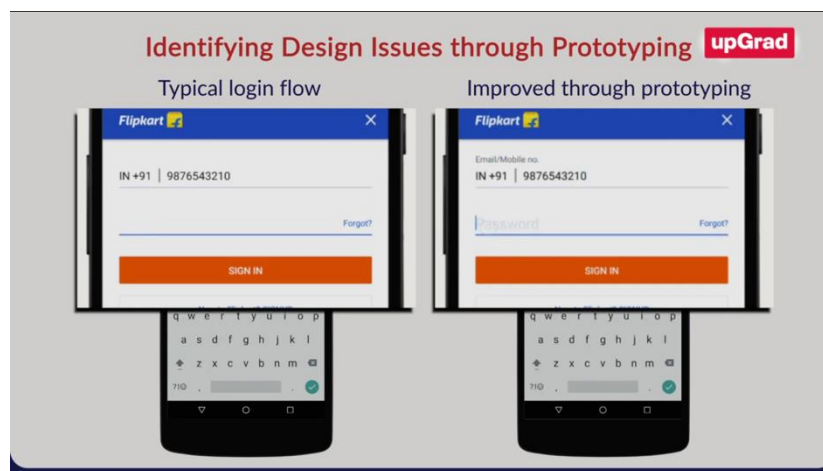


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ANSHUMANI RUDDRA
EX-VP - PRODUCTS, PRACTO

As a product manager, prototyping is an important part of your responsibilities. There are many reasons for this, so let's go through them one by one. First and foremost, a prototype can help you identify design issues in your product. If there are any gaps or inconsistencies in your product design, for instance, if your registration process is too complicated, users will be pretty quick to notice and point out. This way you can avoid building an ineffective product. Let's take for example, something which good prototyping could have resolved before you would have actually built the product.

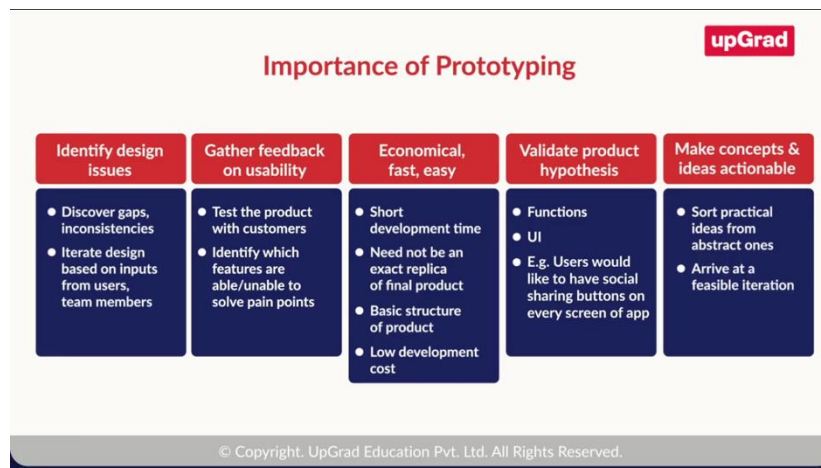
Now most apps these days and most products these days have a login flow. A typical login flow would require you to fill a couple of details about yourself, maybe a name and email ID and a phone number. And after going through this flow, you are essentially registered for the app and then you can start using the app.



Now, something interesting happens in a lot of apps. The field that has to be filled is essentially in the form of grey text inside a text box, but the moment you click on the box. The name of that field disappears. Most users actually get confused at this point, they don't know whether they were required to fill an email ID, a phone number? Were they required to fill the country code or not? Is the password length supposed to be 8 characters or 16 characters? Is it alphanumeric or not? So a lot of these details, things that you want your user to know, go missing just because somebody clicked inside a text box.

Now good design practices which would have required you to prototype would have caught this problem much earlier in the flow and you would have made specific changes. You would have done things like this way, say the LinkedIn login flow or registration and how it works. Where the label essentially goes above the field and as a user you remember what the purpose of that field is. And these are things that prototypes help you catch.

Building on the first point, prototyping can also help you iterate your design. You can develop and improve your design plans based on inputs from your users, as well as from your team members. So your iterations, don't have to wait till after you have built your product. You can start during the initial design stages.



Secondly, a product prototype can help you gather feedback regarding the usability of your product. By testing the prototype with potential customers they can get a feel for the product and so give feedback about which features work and which features failed to solve relevant pain points.

Thirdly, prototyping is economical, fast and easy. Developing a mock-up usually takes a very small amount of time as compared to developing the actual product. It's easy because you don't have to worry about replicating each and every feature in exact detail. You can simply create a basic structure of your product. This is also why building a prototype cost significantly less.

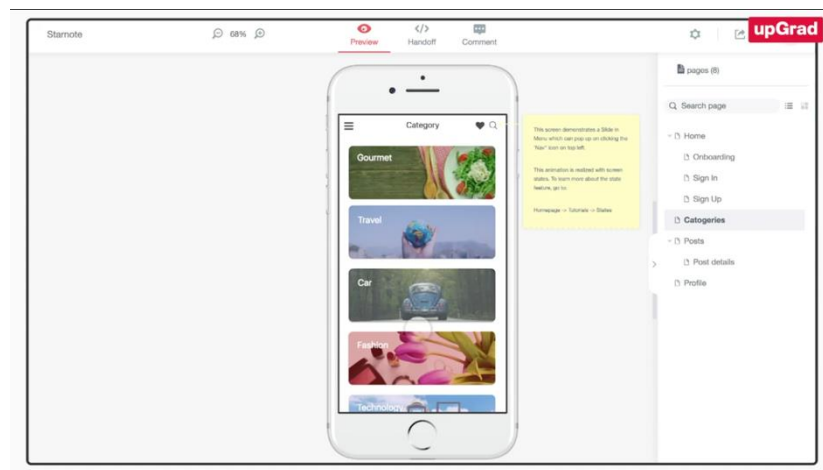
Therefore, prototyping is an economical, fast and easy way to test whether your vision of the product is lacking in any area. A prototype also helps validate hypotheses with regards to its various functions and various UI related assumptions you may have made. For example, if your hypothesis, if you hypothesize, that your users would like to have social sharing buttons built into every screen they encounter. You can test it out and also test where they would like these buttons to be placed.

Lastly, prototyping can help you make your product concepts and ideas actionable. You can sort out the practical ideas from the abstract ones and arrive at a feasible product iteration.



Let me demonstrate a prototype here. Now we are looking at a sample prototype of a mobile app that we have been working on. On the right-hand side, you will see mock-ups of the list of screens that we have created. Also, you might notice that there are only few sections which can be clicked. Now we are looking at a prototype with added interactions.

Before we jump into interactions let's look at the mock-ups of the screens we have created. These are the individual screens for which we had created mock-ups with as much details as we wanted. Now, let's see how things change with added interactivity.



What you're seeing here is explore star node, which is the starting point of interaction, and now once I click that it shows how onboarding will be. Once it is done, I can, or I could even skip that and get into sign-in page, and here you notice that we don't have to enter email ID and password. Assume that it is there and click on the Sign In button, and this will bring me to the main screen of the app.

And now here we see there is scroll as well and with scroll you see that there are multiple categories and on clicking gourmet, it will show me various options available within the gourmet. I can also select one of them, and this will give me more details on how a detailed view of every entry is gonna look like. Add to that it gives the navigation flow. Now I am going backward and I can go to other sections.

Note that here we have not taken the pain of actually depicting the exact elements here. What we are showing here is the flow and the visuals. Now these elements, irrespective of the category will have the same layout, is what we are trying to communicate and will have the same navigation path. So in this way you can verify which screen connects where in the product and test out the functionality without actually building the product at all.

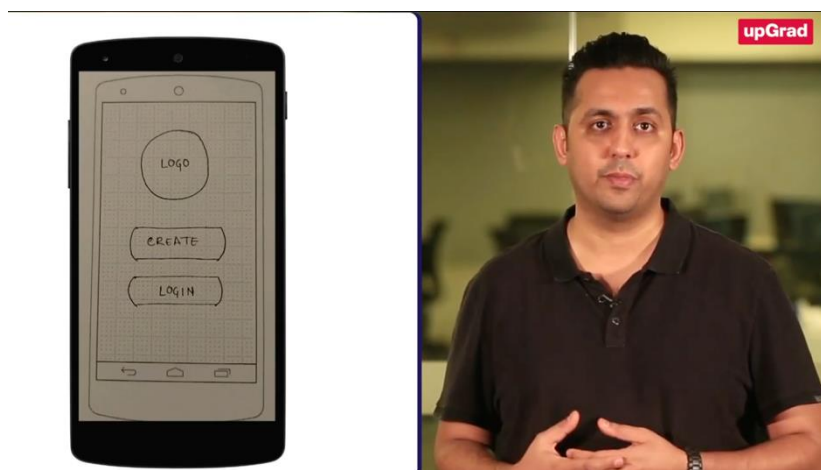


Now, with advances in prototyping tools, we can actually create interactive prototypes from simple paper sketches. Let's now look at an example using the Marvel app. Here, we have a paper prototype for login flow ready with us.

First is a login homepage where the user can either login using existing credentials or signup. There's a page for entering your login information and one for creating an account using email. There is also a screen for OTP verification after the user has created an account. Also, there is a home page screen after the user has logged in.

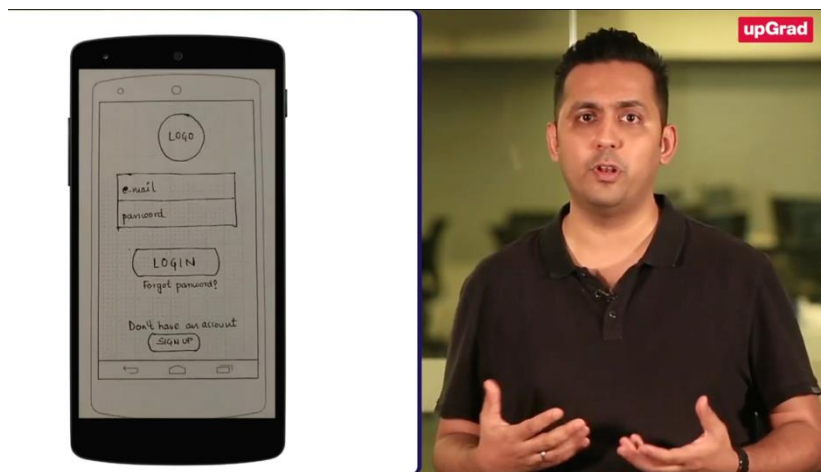
Now we will be creating a new project in the Marvel app. You can download the Marvel app on your mobile phone from the Play Store or the App Store. After you have made an account, you need to create a project, a new project. After you click on the add project icon, you can select the device you want to build the prototype for and give your project a name.

Here we will select the Nexus 5 and give the project the name login flow. Once the project is created, you can add images to the project by clicking on the Add button at the bottom. You can choose the camera option there and then click an image of each of your screens. For each image you can resize, rotate and crop the image as per your requirements. Now we have all the images added to our project, we start by clicking on the first screen. Edit and add hotspots screen is now open. On this screen, we can make the prototype interactive. So if you want to make the login button interactive, we click on the Add button and position red box over the login button.



Now, when we click on the link to the image button, we can select a particular target screen we want this button to take us when clicked. Also, we can select the transition we want the screen to show while moving to a new screen. Here we selected the target, the screen with the option to enter the login information when the user clicks on the login button. We selected the transition as slide down.

Now if we move to the project home screen, we can click on the play button to see the prototype in action. On this screen if we click login, the screen to enter login information slides down. Similarly, we link the create button to create account homepage. To create account button on the new account page to the OTP verification page. The submit button on the OTP verification page will be linked to the user homepage, and the login button on the login information page will also be linked to the user home page.

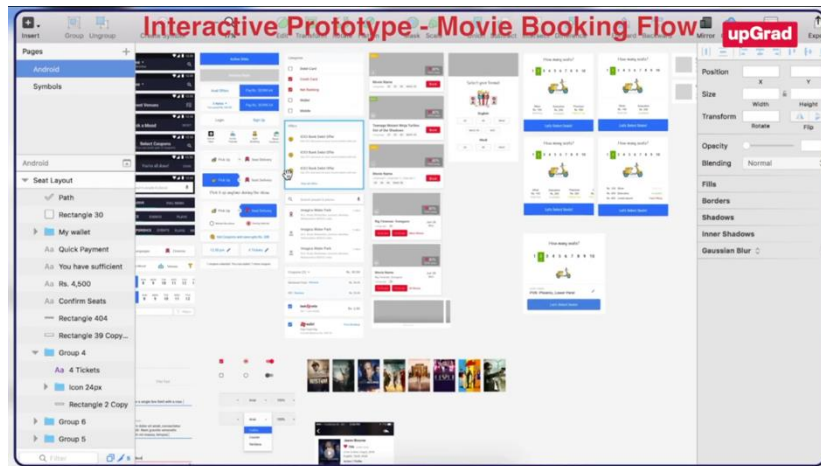


So now, if we click on the play button, we see that we have a complete walkthrough for the login flow in an interactive format. On the first screen, if we select create account, we move to the create account page and if we click on the create account button there, we move to the OTP verification page and if we click on the verify button, we move the user to the home page.

And if instead of the create button, we select the login button but we move to the login page where we can enter the login information and then click on the login button which will take us to the user home page.



An interactive prototype is one of the best ways to smoothen out kinks in your product, to correct any navigational flaws and optimize its ease of use. Now that you're familiar with the basics of interactive prototyping, let's learn deeper about it with the help of a demonstration.



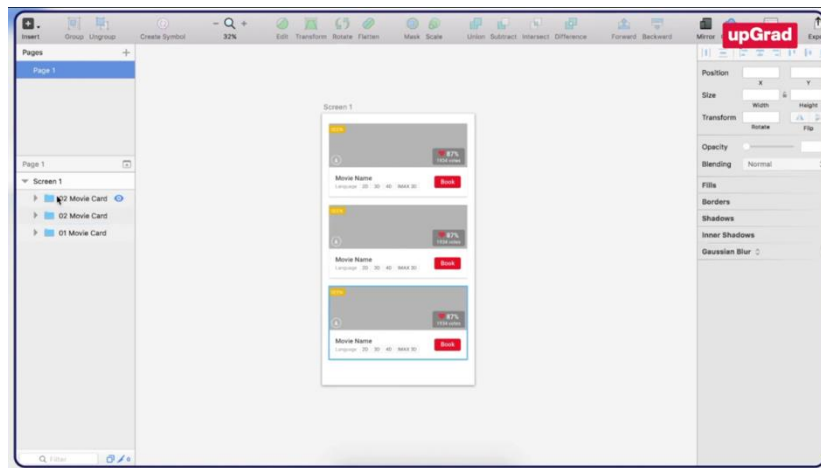
So today, we're gonna create a prototype, basically a prototype for the movie booking flow and obviously this is for the new app.

So in front of me, I've got the master style guide. You can see some of the movie cards over here. This is just a style guide that we were using, obviously some of the designs that you know they keep changing everyday, but those were some recommended cards and this is my master style guide that the design team has collectively worked on.

So I open a new file and from the new file, I first name the file. It's always good to name your files and I name my file as demo. I go to insert and I go to create artboard. Once I create artboard, I'm going to create an Iphone6 artboard and I click on that. It automatically, predetermines the size, I minimize the size. I can change the scale of it to 200%. I don't do it now and I go back to my style guide.

And because you know often people end up working 100 or 200%. So I go back to my master style guide and over here, I need to pick out some elements in order to start creating the first screen of the prototype. Now, let's pick out a movie card, so I've hit Ctrl+C or copy. I've copied that entire grouped element. That element was pre-determinately grouped and I past that element here.

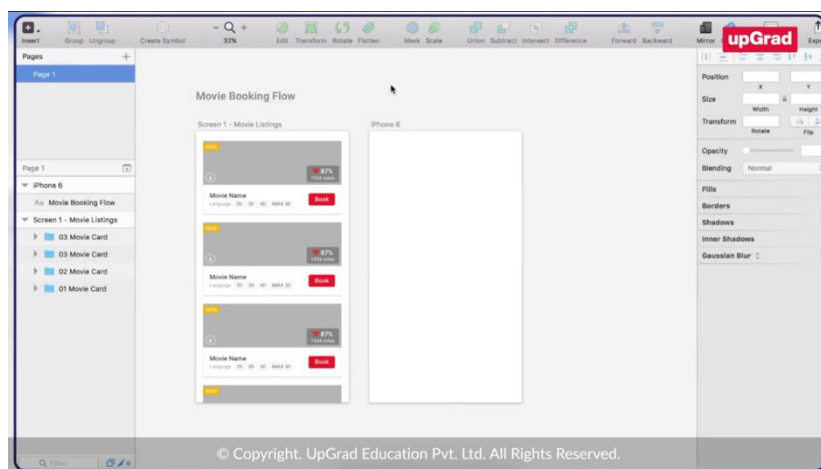
So if you notice it's pasted at 200% and but my canvas is still 100%. So I changed my canvas to 200% and if you notice even the card that I pasted it again also increased in size because it probably became 400%. So I delete it and I paste it again and I move it up just to align it to the top and assuming this is a you know, a seen movie card sort of template and then I copy it and rename this artboard to Screen 1.



And now that I've got one card pasted on the screen. I just hit copy again and I paste it again. I would ideally be doing this with the command keys, but since you can't see my keyboard, I keep going to file and showing you what actions am I doing. So I just rename the file. It's always good, rename the folder. It's always good to rename your folders, I copy it again and we get a proper list view at this point. At this point we've got, you know 3 sample movie cards, you know, and this is creating our movie list.

And in the movie list we get the third movie card as well. So you got about 3 of them listed over here. And we've got our second movie card and we copy it and then we just paste it again. So I'm assuming you guys know that I'm copying and pasting through the keyboard. I paste it again and we've got 3 movie cards and we rename the folders again a great practice to always name your folders properly, just so that when the files get really big, it becomes a bit complicated to find the folders you're looking for, if there's any specific folder you want to edit. So I'm just doing it for those purposes to show you that.

So you got Screen 1 pretty much ready where users can browse movie listings and let's just sort of name it, call it movie listing. Make It much bigger and may give it a bold feel. I just do this out of, just to make the artboard look clean and neat as well.

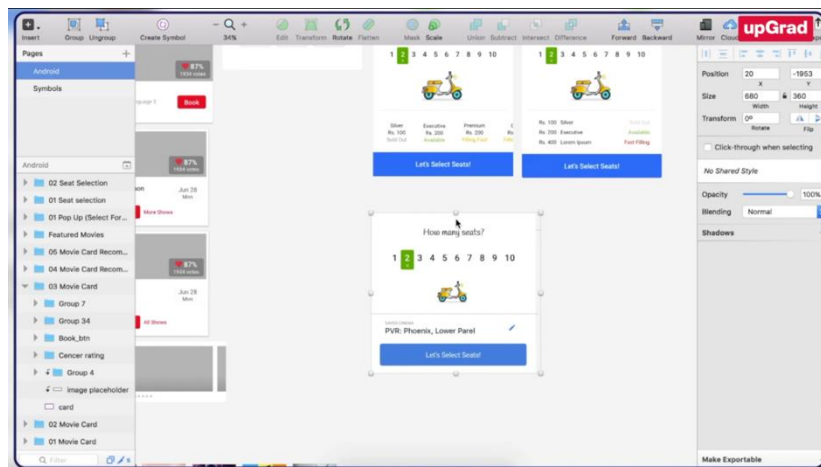


So we're gonna name our file as well. Just make it a little bold and I usually like to name my screens. Obviously it's Screen 1, but what is the name of the screen? The name of the screen is movie listing and let's create another screen, make it 200%, we're gonna do it right this time around.

I just deleted it and I copy-pasted it again and automatically takes the position of pasting it next to the next screen. So I named Screen 1 movie listing. So Screen 1 is movie listings and the entire thing is a movie booking flow. So on the next screen obviously I want to add you know more elements for the user to flow through.



The interactive prototype seems to be coming along nicely. We have one screen ready, let's see, what other screens we can add to the flow.

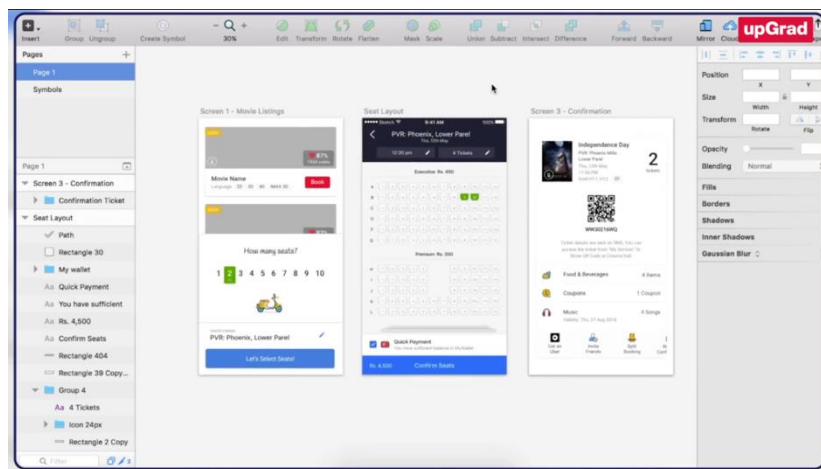


So screen number 2 is, let's call it show seat layout and on the seat layer, there's a reason why I'm jumping to the seat layout is because I'm gonna make a quick prototype and, I also have my seat layout ready. So you can do this with you know, I'm doing it with high fidelity master style guide in sketch, but what you can do is you can actually do this in a paper prototype as well. You can import those as a photo in here as well.

So if you notice what I've actually done is whenever you're booking movie tickets, you need to pick the quantity as well. So I've combined the quantity and the saved cinema, so I've skipped the showtime screen. So what's happening

in the screen is basically you can pick your quantity and the same cinema at the same time, and I've also created another screen on the right-hand side and on this screen, we're gonna basically add the seat layer. So what happens is the seat out loads behind the quantity and behind the saved cinema and when you hit let's select seats, it basically opens the seat layout right away. So you've skipped the showtime screen completely and it defaults to a particular next showtime available.

Let's go back to our style guide and if you notice, we have a seat layout right there, that's ready. We just click on the seat layout, copy it and go back and paste it. So if you notice sketch always pastes on a different canvas. So we're gonna delete the previous one and then we're gonna delete seat layout or we'll just drag it. That's also easier. If you delete it and you paste it again, it pastes at the exact same position after the previous screen.



So now, if you notice, we've got the seat layout in there as well and after the seat layout if we're doing a quick check out from the seat layout then obviously you need your confirmation screen and your confirmation screen will come after the seat layout. So in this case, you have all your screens ready. So I'll bring out another canvas, make it 200% and pull it down or delete it and copy/paste it, whatever is easier, and if you want to rename it to confirmation and with the screen number obviously.

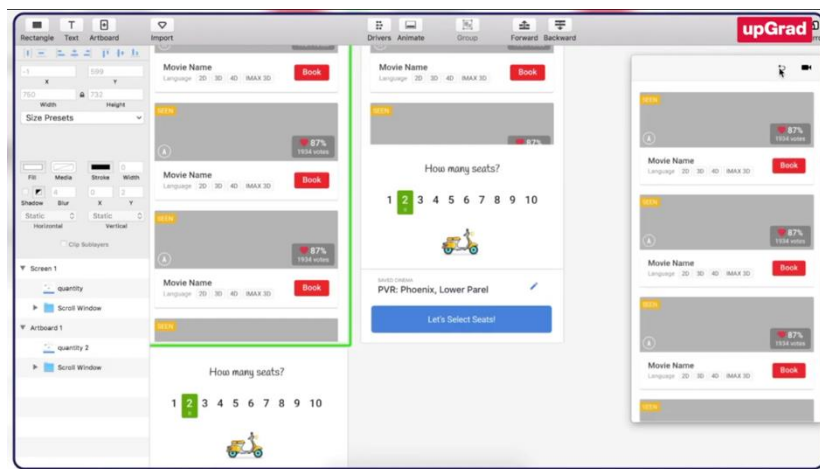
So Screen 3 - Confirmation and we had it pasted, so we just paste it here. So we've got all 4 screens of our small booking flow. We brought the booking flow down to about 4 steps and I'm gonna copy all of them and paste them again. Once I paste them again, I'm gonna bring them all down below now.

Now, why did I do that? I did that because I wanted to keep my older canvas or elements separate, and I wanted to bring the quantity and the cinema selection on overlaid on top of the cinema listing. So when I pick a particular movie, I want the screen to pop up from the bottom on this screen. Now, this is a technique used when you want to minimize your screens and don't want the user to feel like there are multiple screens he or she has to go through. So we don't really need the intermediary screen. We bring it further down to 3 steps.

So if you notice the movie booking flow is down to literally down to 3 steps. All right, here we go and we're gonna open up principle now. So principle is a tool used for prototyping. You know if you've laid out your mocks completely, you figured out your flow based on template or based on sketches that you have. I've done very high fidelity ones. You need to import your files into sketch - into principle.

So here you can see I've copied, I've grouped all the elements into one group and then I copy that entire group. I go to principal and I simply paste it over there and remember you have to copy your group. Again if you notice it's pasted in 200%, so I need to make the entire canvas 200%. So principle doesn't give you the exact values in percentage, so you need to get the exact size.

So now that we've got an exact size, we're simply gonna copy and paste, and if you notice, it is all in perspective at this point. We rename the layer to movies and name the artboard to Screen1, and you can see the preview on the right. So if you plug in your phone, you know you can also see this preview on your phone and there's a very simple lightweight app that principle provides on the App Store and it's I think it's only available for the iPhone. You can preview your prototypes and they actually come out to be beautiful. This is a very simple prototype.

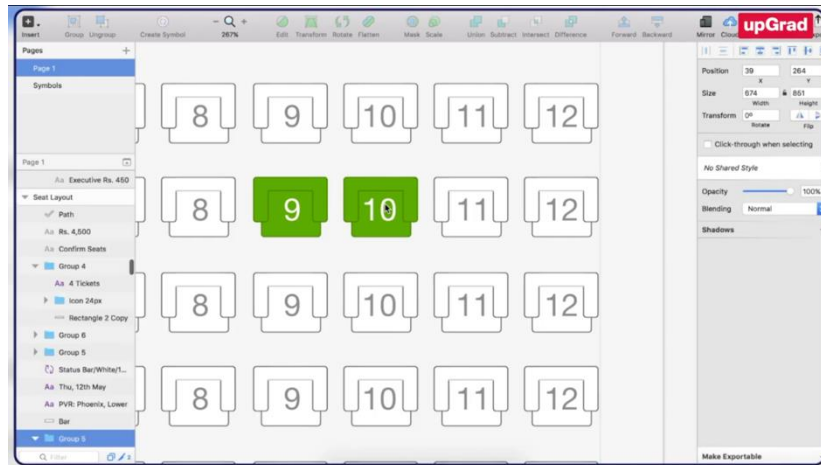


So now that we want to scroll our prototype, I will just click on the layer and under vertical, I will just give it a vertical scroll and now, I'll pick out this element separately of quantity and showtimes. Quantity and screen selection. If you notice I hover over the first artboard. It's got this little, blue hover, purple hover overlay and I'll put it on there. And once I put it there, I need to keep the start position of that at the bottom and it's already in Screen 1.

So if you notice a layer is inside Screen 1 and when I'm scrolling, the thing is still scrolling without showing Layer 1. Although when I click on the entire group or I click on the next canvas, I copy-paste it again and when I click on Layer 1. I have to first rename it to quantity and I click on Layer 1 and you click that little dash icon, click on tap and based on tap it will take you to the next screen.

Then I copy-paste, what I want to see or what is the perceived behavior on the next screen and what ends up happening is I hit refresh and if I click anywhere it comes up because it's jumping to the next screen. So that little you know that little lightning icon just enable the tap from one screen to another screen. So now you notice both the screens had the same name file, which is why it was jumping. But if I click now after renaming the file, it comes up smoothly.

So it's the same element that you know principle understands that the element is the same, which is why it overlaps it and allows for that smooth transition. Now we copy the seat layout, which is the third screen in our flow, and we just copy-paste it which doesn't work so you copy it on a canvas. You create a canvas and then you paste your element. So in this flow, if you notice the seats are already selected and you know the payments already done. So is that how we want our flow to be?

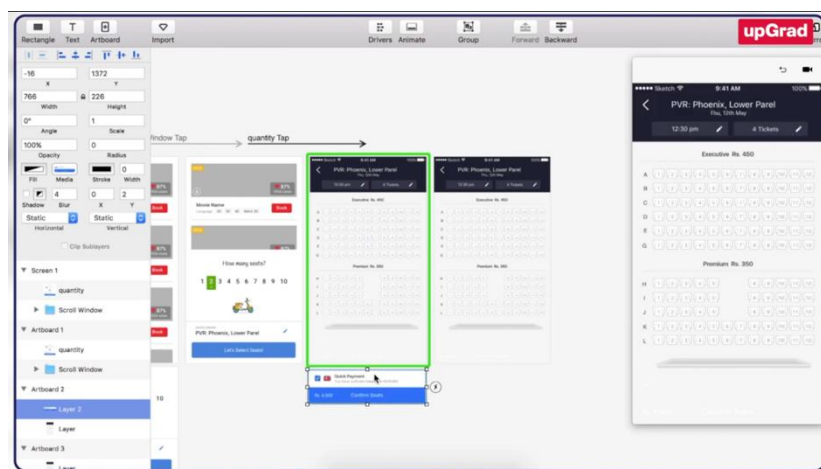


We now have all the screens ready. Let's now take a look at what kind of interactivity and other elements we can add to it.

No, that's not how we want it to be so. What we are gonna do is, we're gonna actually break up the seat layout only because there is one more interaction in between and that interaction is to select your seats. So forth the purpose of the prototype, we're gonna remove you know the quick payment part. We're just gonna remove it completely, so I'm gonna delete all the elements that are on top of it.

I am gonna remove the call to action because the call to action doesn't make sense unless you select the seats and at this point, you know the seats aren't selected. So I'll zoom in here. I will remove the two selected seats, 9 and 10 and I'm gonna copy-paste 9 and 10 from the top row and bring them down. There we go.

Copy-pasted, brought them down and, let's just zoom out now. And at this point, the user has not selected any of his seats. So since they've not really selected any of his seats. We're gonna take this layout first, because this is one interaction that we can't skip. So now let's go back to, why do we copy it first and once we copy it, we're gonna go back to principle. Here we go.



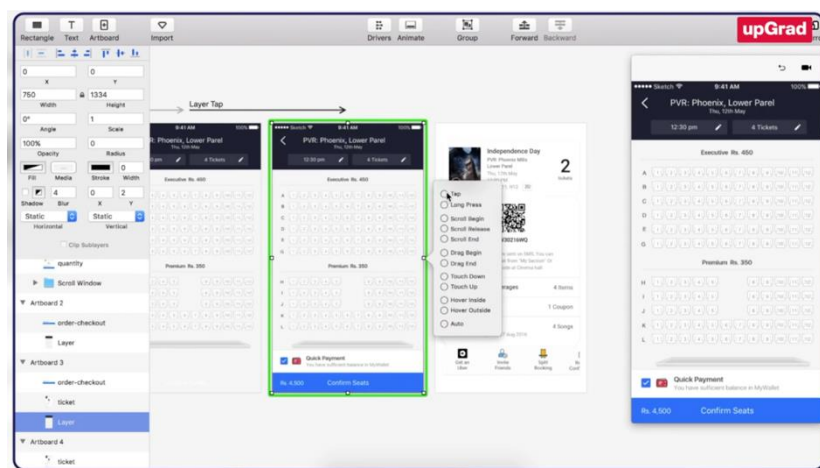
So, let's open principle. Let's hit A. Once you hit A, creates an artboard, I copy-paste it and on the tap of this entire thing module, it is supposed to go to the seat layout and that's what it's doing. Now, let's create another artboard or let's go back to sketch first and pick the seat layout again. Let's zoom out a little bit. Go to sketch, pick the seat layout with the call-to-action at the bottom.

We hit A. Create the artboard and copy-paste what we got from sketch. Tapping on the seat- layout is gonna bring up the selected seats and the payment options. Why don't we preview that now? But actually you know the quick pay payment is still part of, it's just gonna abruptly come up. Do we want it to abruptly come up or I think we can live with, you know A flipping switch for now.

So how about we break that even further just I think this is just for visual indication purposes because you want to give that visual indicator to your users at times only because it adds value to get your attention there. So one way to quickly do it is to group the entire selection.

There we go, that grouping still needs to happen properly. There we go. Looks like I got all the elements and there is another one. There we go. So we separate the elements. Now we've got the right group separated and if I go back to principle, I just copy-paste the same seat layout, and here we go.

So now what I'm doing is the same thing as a quantity and cinema selection where I just copy the entire group together. So that it comes up from the bottom when I'm selecting the seats. I pasted it here. I put it at the bottom of this one. If you notice the name of the layer is Layer 2. I'm gonna change that to Order Checkout. Copy-paste Order Checkout again and I paste it in the next artboard and it's inside artboard 3 at this point. I just position it where I have wanted to be, the destination position, and I click on the icon and I say when I tap this: make order check out, which is 0% by default, come up and if you notice it comes up.

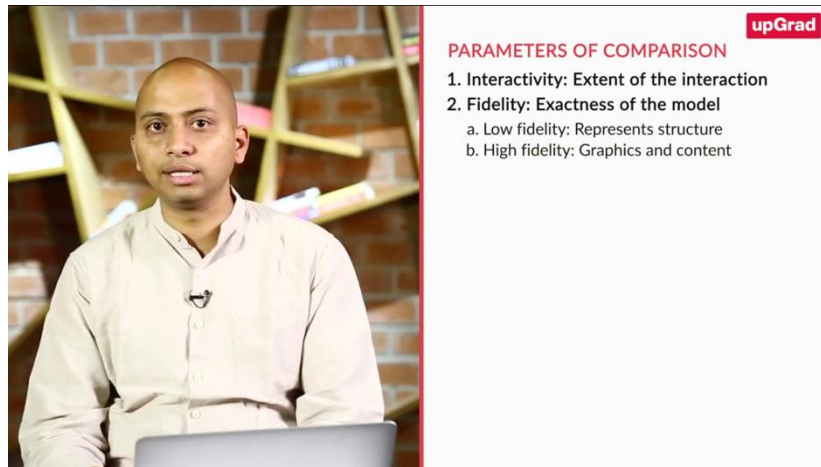


Now the names were different, which is why you would not see the animation and I hit refresh. Click here, click on that, seats come up. Click your seats and it smoothly comes up because the names are the same at this point. So I create another artboard. This is gonna be our final artboard where we put the confirmation ticket confirmation there. Now again, this is you know, you're gonna have to ignore a lot of the use cases, because this is a exploration prototype.

So an exploration prototype, pretty much just gives you an exploration of what the movie booking flow should be like, and then obviously you can think through all the use cases in between. So at this point I've created the final artboard

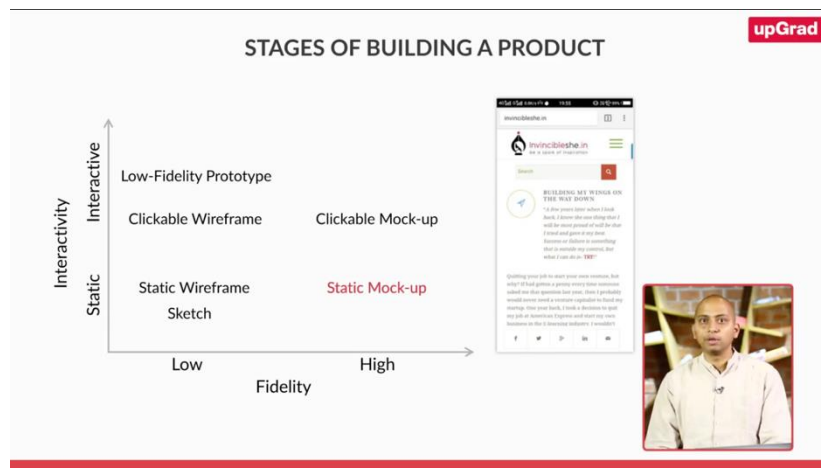
with the ticket. I've copy-pasted the ticket here as well, and it's very simple. Now we're done with our flow and we want the ticket to come in from top just for some little jazz on how it comes up. So I'm gonna make this 0% opacity. So when I tap on this screen and I go to the next and I map it to the next screen. It'll come up from the top, pretty cool. So refresh, scroll, tap, click, becomes green, confirm seats. It needs to get mapped, tap on map, pull it and drag it to the destination screen, and when I click it, you get the ticket. There we go. That's your principle prototype!

Next up, we will learn about creating an interactive prototype using the Marvel app.



We can compare the stages of product conceptualization using the parameters of interactivity and fidelity. Interactivity denotes the extent to which users can interact and be involved with the model and how close the interaction is towards the end product. Fidelity on the other hand talks about exactness with which the information or the model is built and this resembles your final product. A low fidelity stage usually does not contain graphics or animation and is nearly representation of the structure. There is a high fidelity stage, contains graphic, content and resembles close to the final product.

We have seen that the different stages through which you can build the view product including hand sketches, wireframes, mockups and interactive prototypes. Let's look at them one by one through the parameters of interactivity and fidelity. A hand sketch is a simple, a basic representation of your product that you can sketch out on a paper or a whiteboard. This stage ranks the lowest on fidelity and has no interactivity. But it works when you simply want to visualise your product and discuss with the internal stakeholders. Therefore you can use it during the initial stages to debate design ideas among the theme or even product ideas.



The second is a wireframe. It can be static or clickable. A static wireframe is little higher fidelity than that of sketch but it isn't interactive at all. Clickable wireframes would rank higher than the static ones as they are slightly greater interactively. Clickable wireframes can be technically called low-fidelity prototypes. You can create wireframes to evaluate whether your ideas about the product or even product feature fit into the overall product strategy.

The third stage is a mockup. A mockup is one step ahead of the wireframe. It conveys visual details like colours, fonts and this is the next step infidelity.

However, it can be static or clickable and therefore it can be low or high in interactivity. Lastly, the highest level of fidelity and interactivity is found in prototype created over a mockup. Such a prototype resembles the final product, the most and it's also clickable model. This means at its working model of your product and can be used for usability testing and other users will be able to give feedback too.

We will cover the usability tests in the later module. So let's leave it at that. Thus if you want to gather feedback from your users regarding your product, a prototype created on mockups of your product is the way to go. As we move towards higher fidelity, the cost of reaching that stage increases as well. Hence at each stage, it is good to test out the concept so that you can weed out the errors early.

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