Innovation by Design
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Module – 4
Start of section 4
Lecture - 24
Exploring possibilities: Ideas and mockups

I want to you know talk about how each idea reflects various aspects of comprehension. So, Avinash found out that they have used vacuum tubes in solar water heaters.

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You know solar water heaters has become very popular now.

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Every hotel uses it. Solar water heating is now in and thats in because of vacuum tubes.

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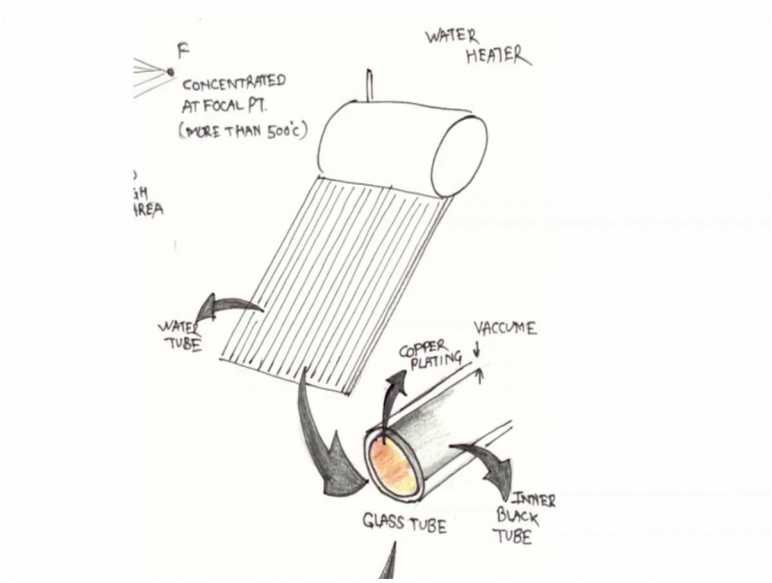

Then Avinash thought if I use vacuum tubes for my cooking, why not. So, his coming up with various different ideas.

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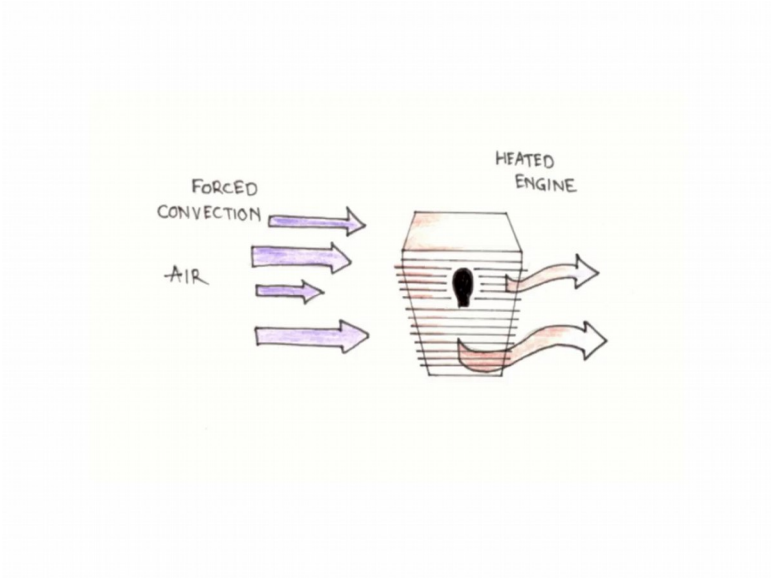

Then he said can I have circulating fans to move a larger panel of air so that I can collect more heat.

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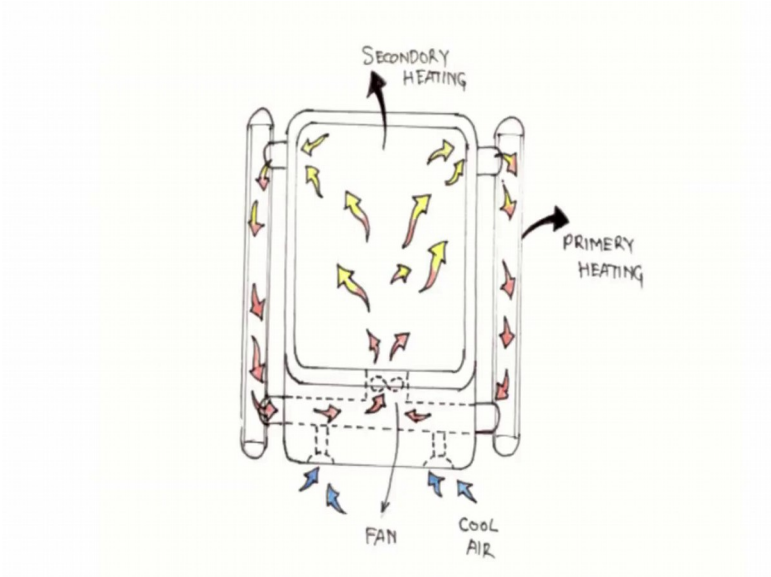

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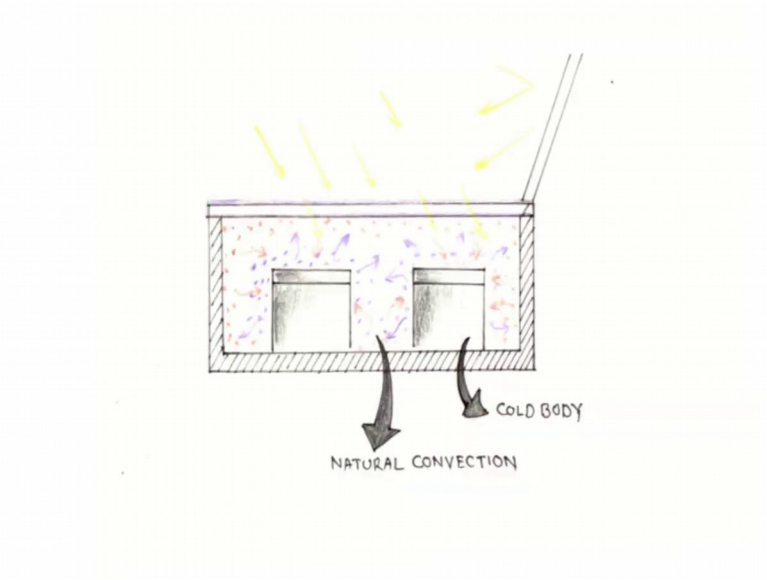

And you know take it to the containers.

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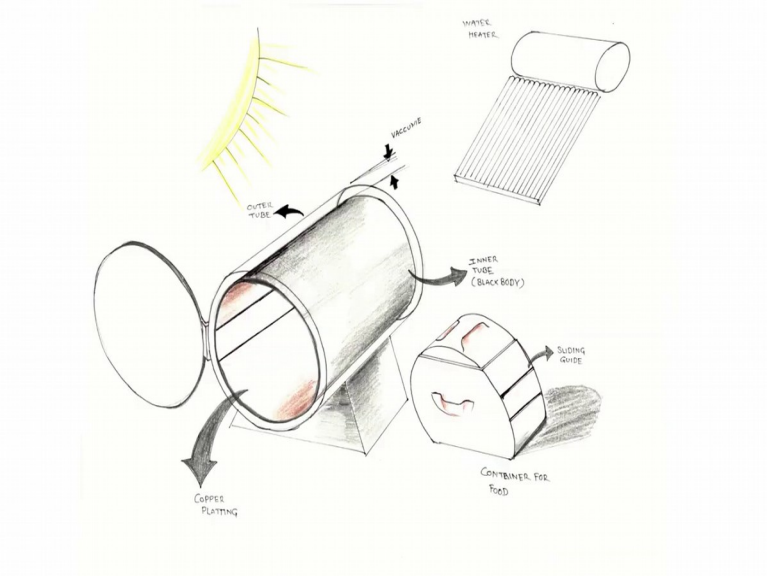

And then he also thought about a very big glass vacuum vessel. You all know greenhouse effect, your cars are good examples.

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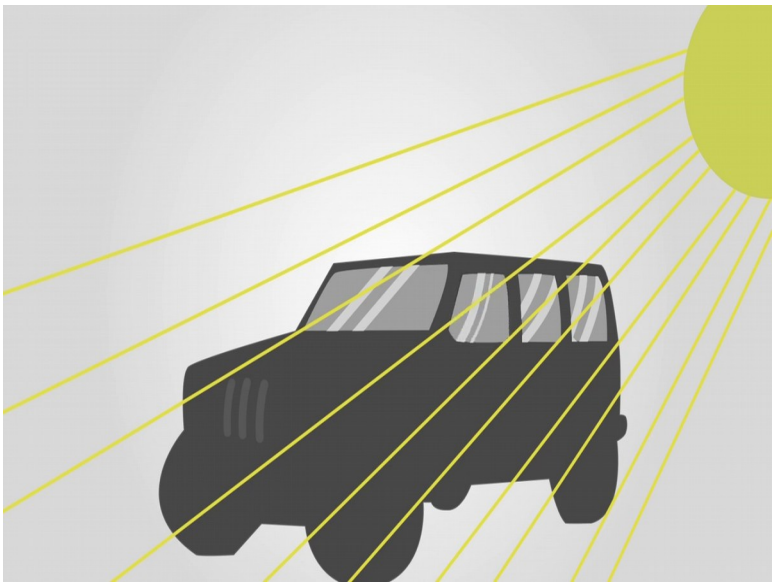

In green house effect temperatures inside boxes can go as high as 80 to 90 degrees. Most of you must have been in a car which is in the sun for 2-3 hours and you can see the temperature inside what would be the temperature inside? 60 to 70 degrees sometime.

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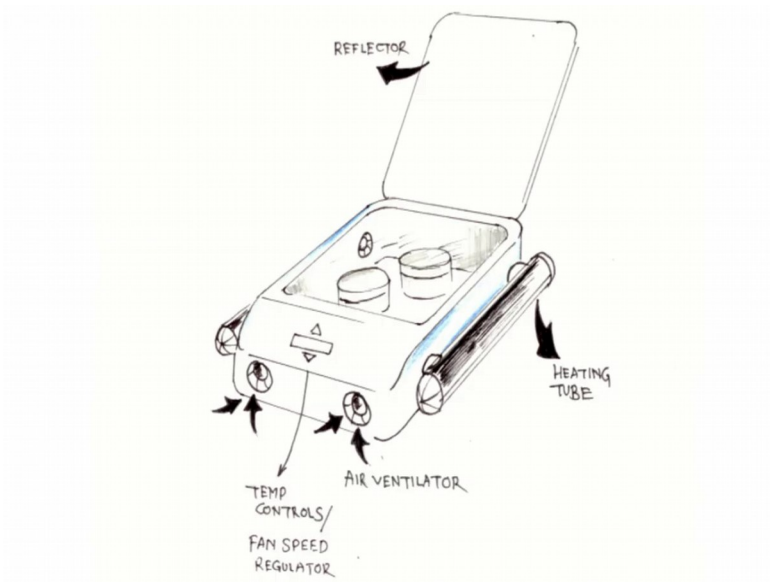

So, you know this is an idea which he came up. So, then he said wow, this has to be mounted on a window.

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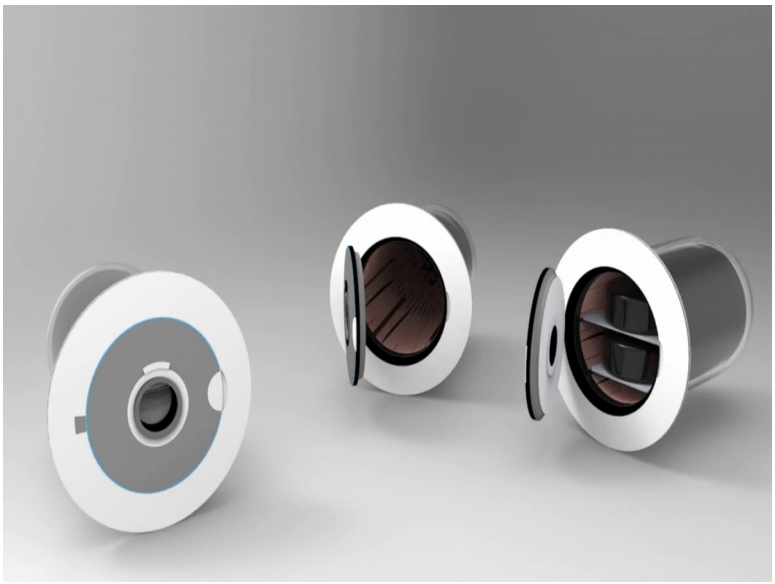

It can be you know horizontally mounted.

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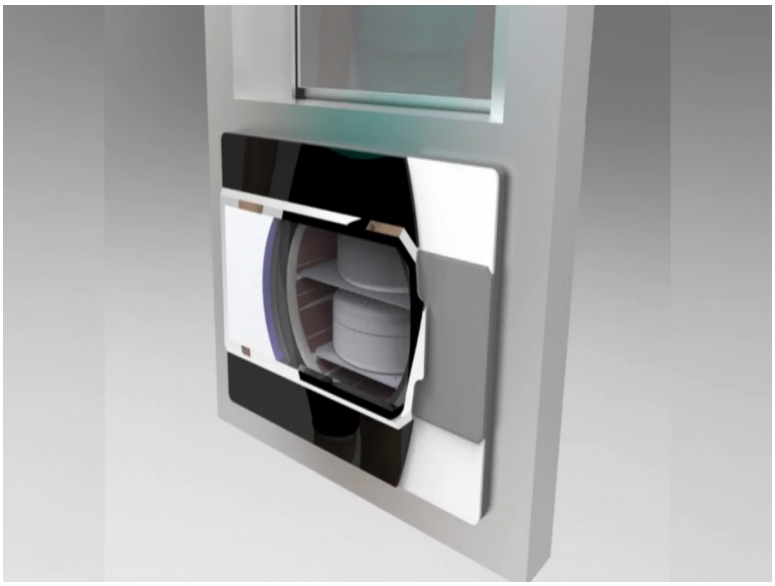

It can just slide out of the window, right.

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You have a oven on the window and you slide it out like a box or you mount it like an air conditioner with the flange.

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So, he made this quick and dirty mock ups he started making very small scale mock up look at his hand small mock up.

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These are very very important issues in conception. When you make the small mock ups it becomes very tangible to you how your product is going to work. And these are very valuable and we make our students to do these mock ups very very carefully and we spend a whole three weeks on this.

What does this creative part which Avinash did?

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He went and picked up two Bisleri bottles and he put them one into the other and he checked. This was our biggest breakthrough where the temperature rose to 82 degrees within 15-20 minutes; we said wow, this technology will work.

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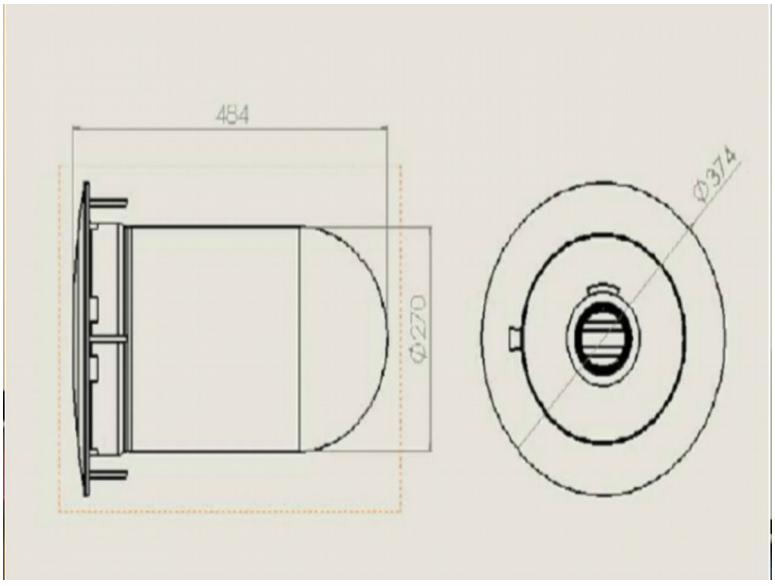

It will surely be you know very good and then he did all the detailing for this.

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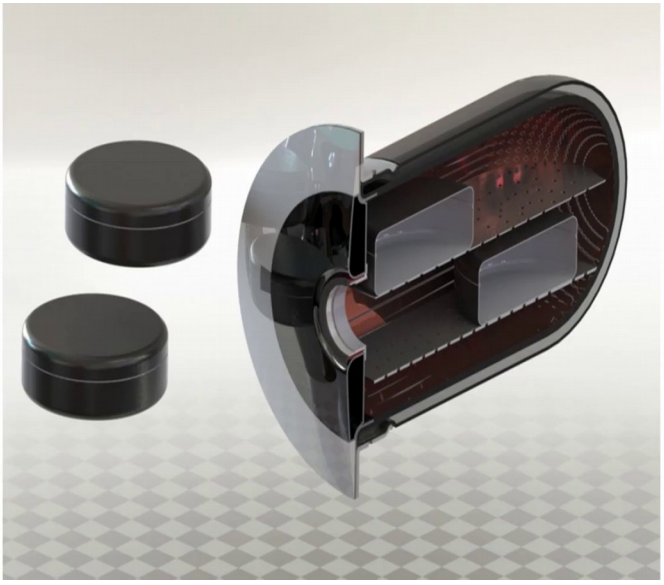

You see how it is going to be made, what type of shell it will be, what type of double wall and then you do how it will go and fit in the window and then he made a mock up model.

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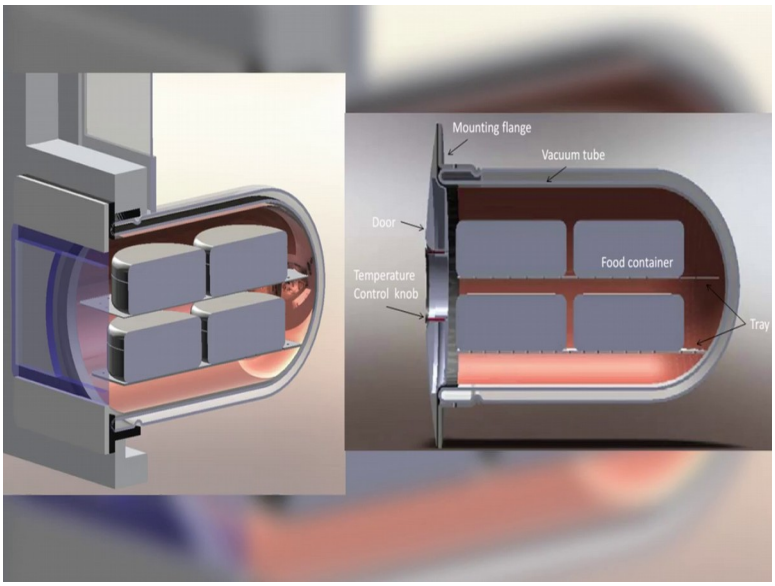

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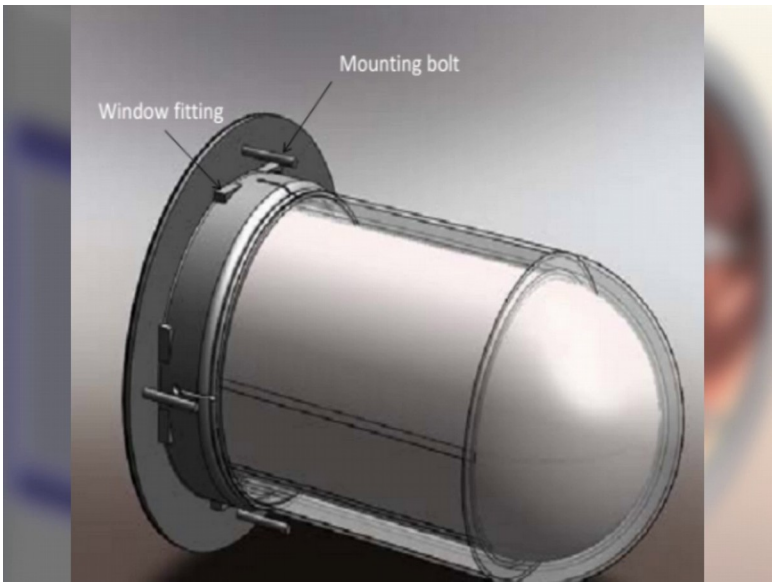

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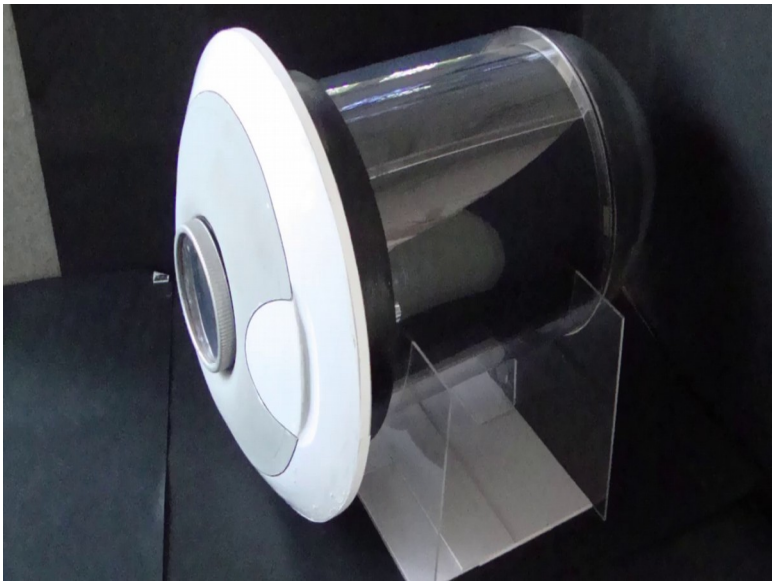

So, you have this whole round shell and you have the wheel to adjust the air vent inside remind that is cars when they get hot. So, when the food is cooked you get turn the wheel and you see this is working, do mock ups work?

Student: No.

No mock ups are just dream things, you just make them quickly out of plastic and paint them and make them look like real.

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Why are mock ups need for design? To go closer to that product to understand its shape.

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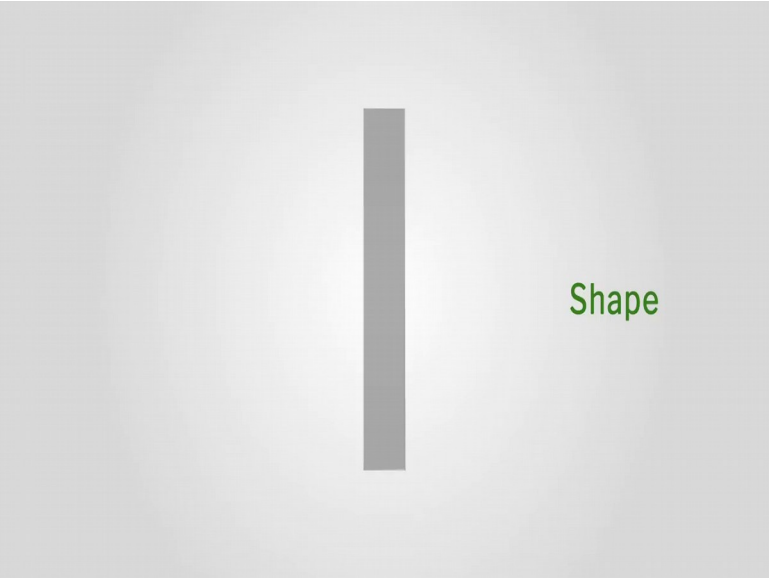

Form.

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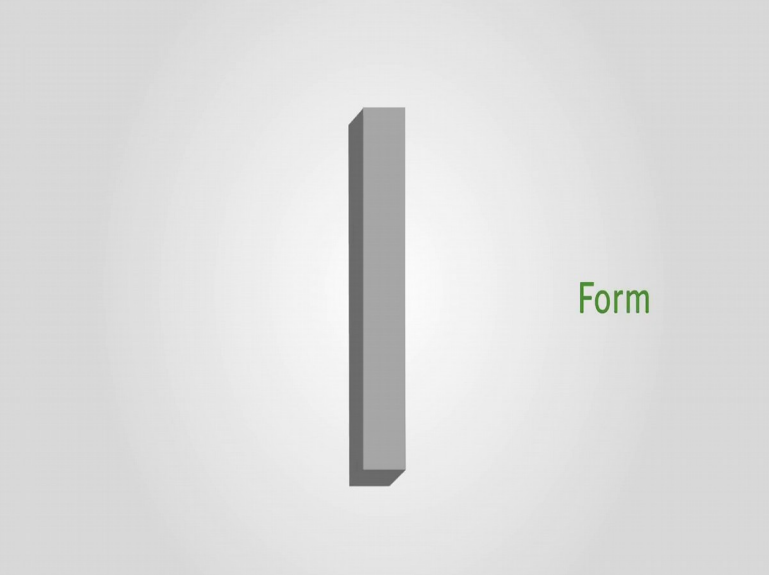

Aesthetics.

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Perception.

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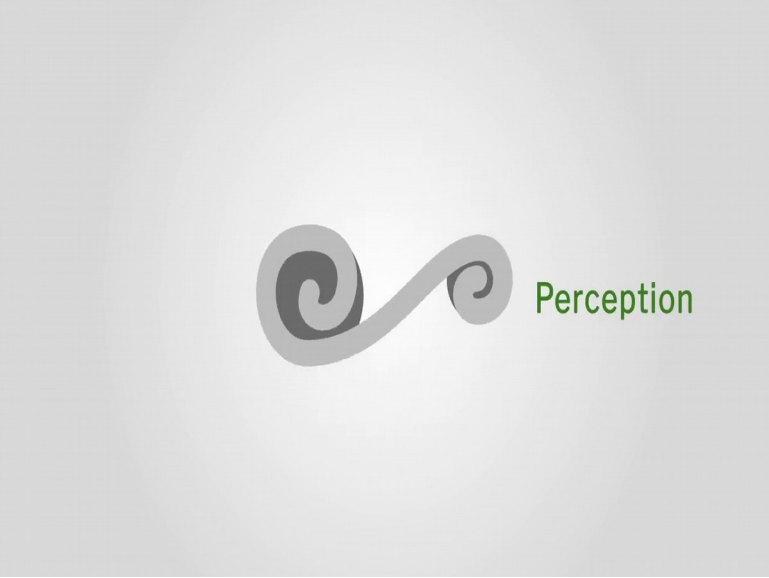

And usability, right.

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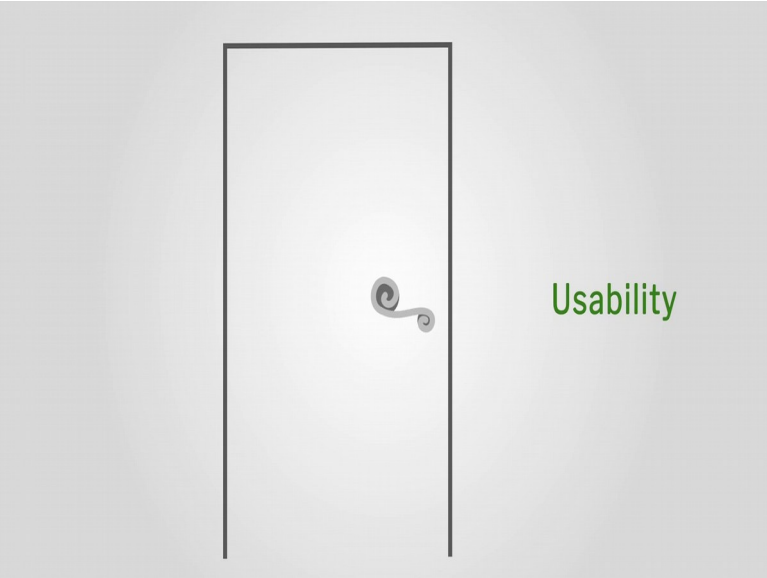

Every car which is in the street would have gone through 7 or 8 clay mock ups, ok.

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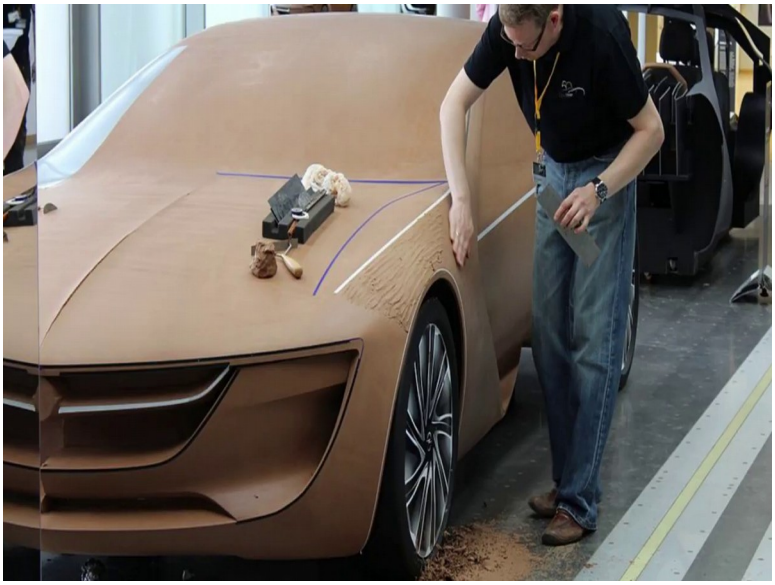

So, here you see this mock up it does not work, but it has all the features you just see, it has a place to put your hand and pull and then he worked out two compartments in this to get better heat and you know better transparency so, that it cooks better.

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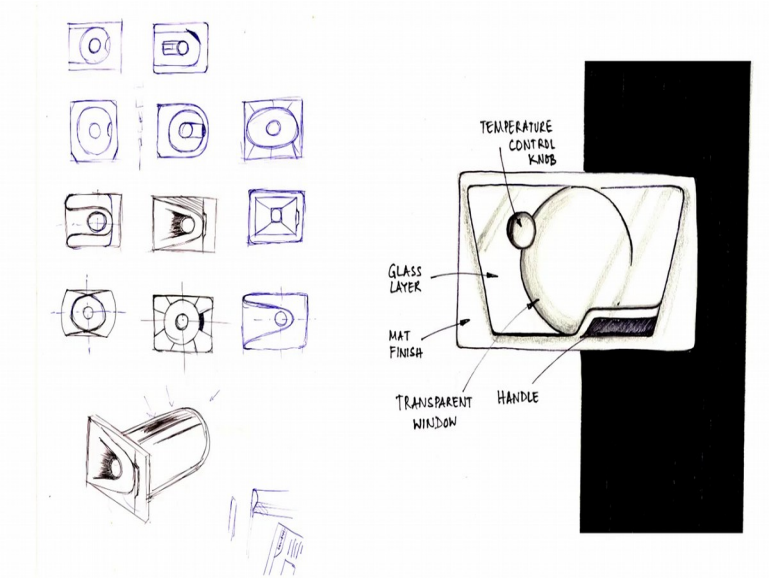

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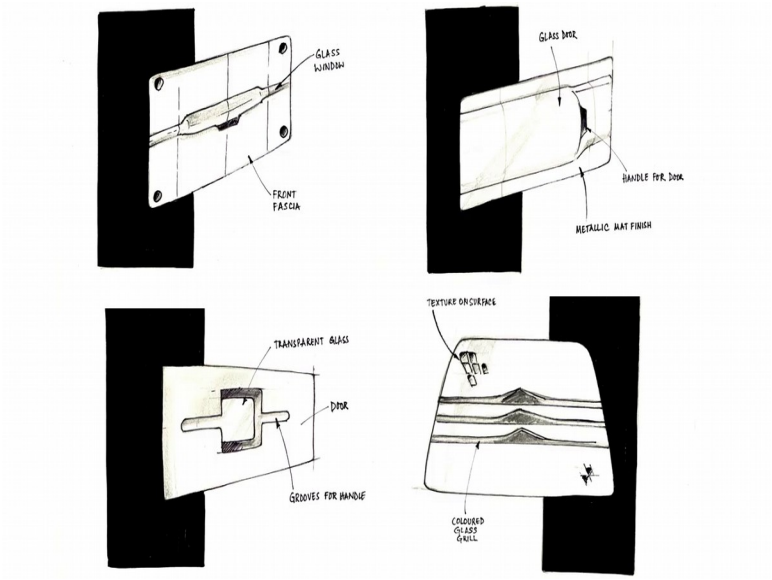

We want to make it look like each end appliance, but this is looking like a space product.

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It does not look like part of the kitchen though washing machines have round (Refer Time: 03:17) we said let us look at more convenience of putting food inside.

So, we wanted to have a rectangular door. So, we said ok. If it fits with the semantics of an air conditioner and a microwave oven, what is semantics anybody knows? Meanings and form.

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For example, as soon as I show you something I do not need to tell you twice, if this is a water bottle you know that the this water bottle has a cap on this bottle and there is a particular shape. So, the semantics of a bottle is fixed. So, they all are the particular you know type of shape and form. So, there is a meaning in this you know as soon as you show this it is a water bottle.

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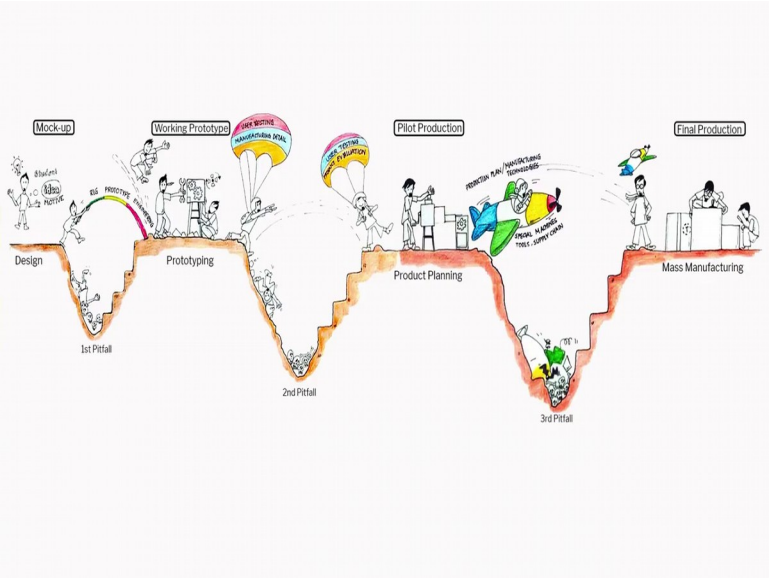

So, here we are. So, where are we now in the design phase, we are still in the first and we are just making mock ups and it does not in a working model.

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Avinash has his rib which is working only at 89 degrees.

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And 89 degrees we can only cook rice, may be you can make some cakes, but nothing more than that.

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So, still we have got a very long way to go.

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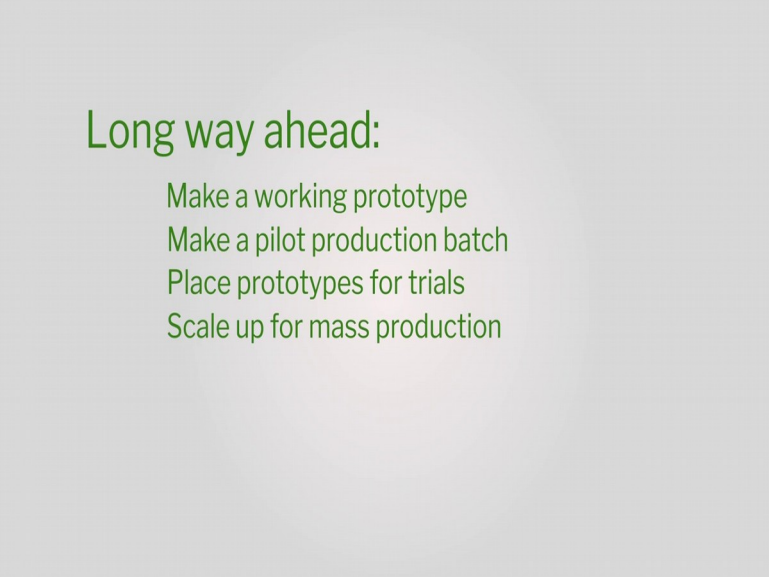

We need a working prototype, we need to then look at pilot production, put in more places and then we need to go to mass scale work all over the country all the world we can launch this product. So, we have a long way to go.