

C6 UI/UX

User Interface
User eXperience

4.2 Web Applications

Understand the concepts and techniques for developing web applications.

Ref	Learning Outcome	Teaching Notes
4.2.1	Describe the differences between web applications and native applications.	<i>The website of the application should be dynamic in nature and connect to database for the storage and retrieval of data. Creation of a web application that connects to a NoSQL database is excluded. The client and server may reside on the same local computer.</i>
4.2.2	State and apply usability principles in the design of web applications.	
4.2.3	Use HTML, CSS (for clients) and Python (for the server) to create a web application that is able to: <ul style="list-style-type: none">- accept user input (text and image file uploads)- process the input on the local server- store and retrieve data- display the output (as formatted text/images/table)	
4.2.4	Test a web application on a local server.	

My favourite app

Share about your favourite mobile app (or web app) with a partner.

- If you were to review this app, how many stars will you give and why?
- What are the characteristics that you like about the app?
- What is your overall experience in using the application?

What do you think of these designs?

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Ramset
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Apollo
BFT
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Allstar
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Eagle
SEA
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Main Control Boards
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Welding Expertise

Top Brands of Gate Openers and Operators, Commercial, Residential, Industrial, Swing, Slide, Rack & Pinion, Barrier

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Although we offer a wide selection of Ornamental Designs or Decorative Designs, we can design and manufacture any style in aluminum or wrought iron metals. L. A. Ornamental & Rack Corp also offers Fences, Garden or Walk Thru Gates to match your driveway gates. With over thirty five years of experience in manufacturing and designing elegant, custom, or exotic [Aluminum Driveway Gates](#) and Fences, our past and future customers can have peace of mind that they are receiving quality workmanship. We are a Fence Company that gives our customers 100% of dedication to manufacture quality driveway gates and fences. For a quote please send an e-mail to LAOrnamental@aol.com

If your looking For Privacy with your Driveway Gates, Garden Gates, or Walk Thru Gates, we offer a Solid Backing with your choice of Aluminium, Steel, Plexiglas or Plastic. All solid backing are offered in many different colors to choose from. [Privacy Gates](#)

We offer a large selection of Gate Openers and Gate Operators for Residential Driveway Gates, Light or Heavy Commercial Gates, or industrial locations. If your not sure the style or size of the Gate opener / gate operator you need, please e-mail or contact us so we can gladly help guide you to the correct choice. We offer all type of Gate Openers / Gate Operator, Sliding Gate Openers / Gate Operator, Swing Gate Openers / Gate Operator, Hydraulic Gate Openers / Gate Operator. We also have a wide selection of replacement [Main Circuit Boards](#) for all brands, and [Remote Controls](#) for Visors or Keychains.

Railings - L. A. Ornamental Rack Corp offers top quality Balcony Railings, Front Porch Railings, Deck Railings in Metal, Aluminum, or Wrought Iron Steel. We offer rails for residential or commercial locations for either Interior or Exterior locations. We also offer Custom Made Railings, Decorative Railings, or HandRails that are powder coated paint for low maintenance and long last Balcony Rails, Porch Rails, or Deck Rails

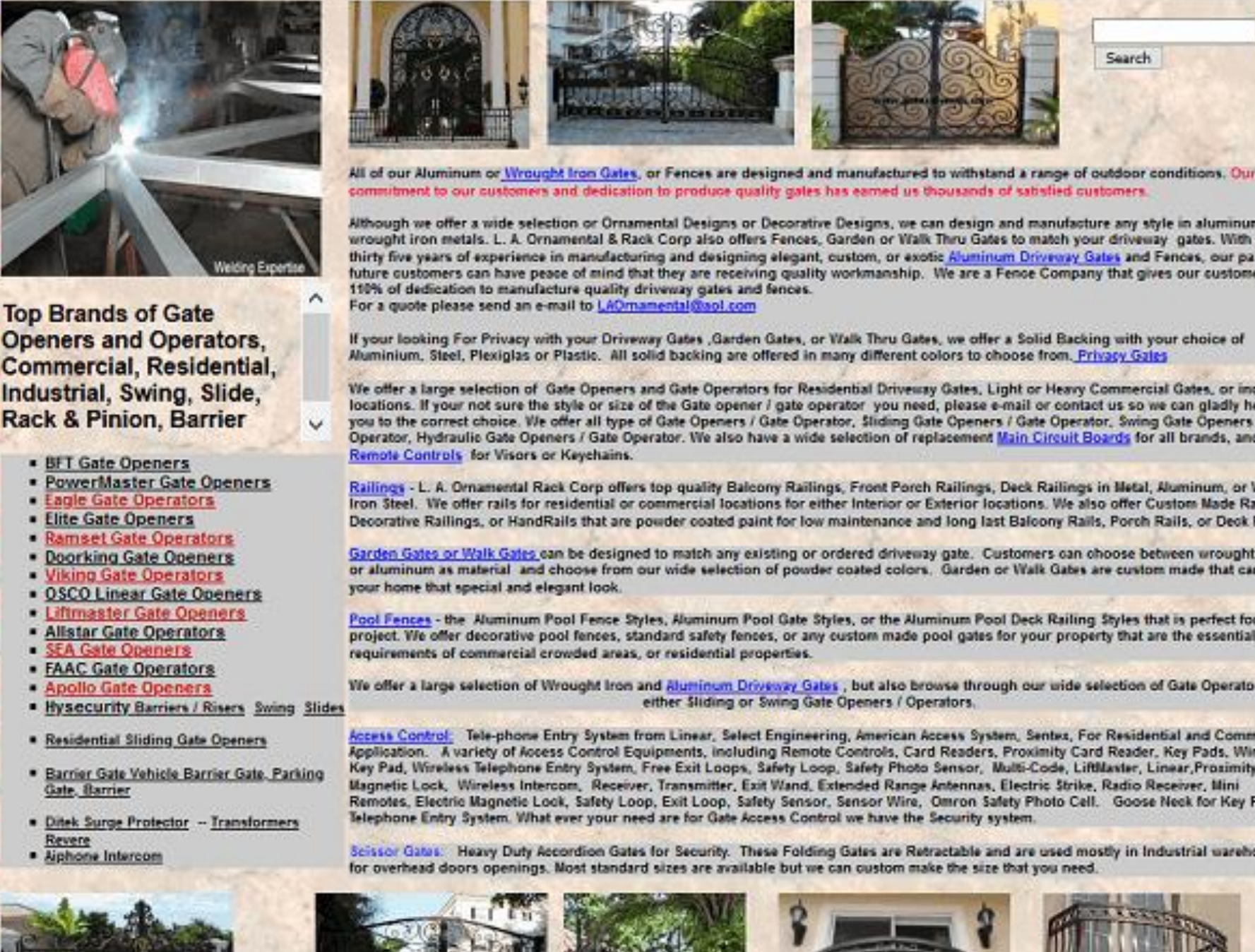
Garden Gates or Walk Gates can be designed to match any existing or ordered driveway gate. Customers can choose between wrought iron or aluminum as material and choose from our wide selection of powder coated colors. Garden or Walk Gates are custom made that can give your home that special and elegant look.

Pool Fences - the Aluminum Pool Fence Styles, Aluminum Pool Gate Styles, or the Aluminum Pool Deck Railing Styles that is perfect for your project. We offer decorative pool fences, standard safety fences, or any custom made pool gates for your property that are the essential requirements of commercial crowded areas, or residential properties.

We offer a large selection of Wrought Iron and [Aluminum Driveway Gates](#), but also browse through our wide selection of Gate Operators, either Sliding or Swing Gate Openers / Operators.

Access Control - Tele-phone Entry System from Linear, Select Engineering, American Access System, Sentex, For Residential and Commercial Application. A variety of Access Control Equipments, including Remote Controls, Card Readers, Proximity Card Reader, Key Pads, Wireless Key Pad, Wireless Telephone Entry System, Free Exit Loops, Safety Loop, Safety Photo Sensor, Multi-Code, LiftMaster, Linear, Proximity Card, Magnetic Lock, Wireless Intercom, Receiver, Transmitter, Exit Wand, Extended Range Antennas, Electric Strike, Radio Receiver, Mini Remotes, Electric Magnetic Lock, Safety Loop, Exit Loop, Safety Sensor, Sensor Wire, Omron Safety Photo Cell. Goose Neck for Key Pads or Telephone Entry System. What ever your need are for Gate Access Control we have the Security system.

Scissor Gates - Heavy Duty Accordion Gates for Security. These Folding Gates are Retractable and are used mostly in Industrial warehouses for overhead doors openings. Most standard sizes are available but we can custom make the size that you need.



What do you think of these designs?

STEVENLIM DOT NET MODELS

of

Eyebrowser Trading & Marketing (Reg. since 14th Jan 2003) Business Registration No: 52986051A

Models & Talents

Global WWW Platinum Ad Page

(International/Overseas assignments are welcomed depending on Native Country Laws.

Eg. Malaysians acting for Malaysian TV dramas and movies)

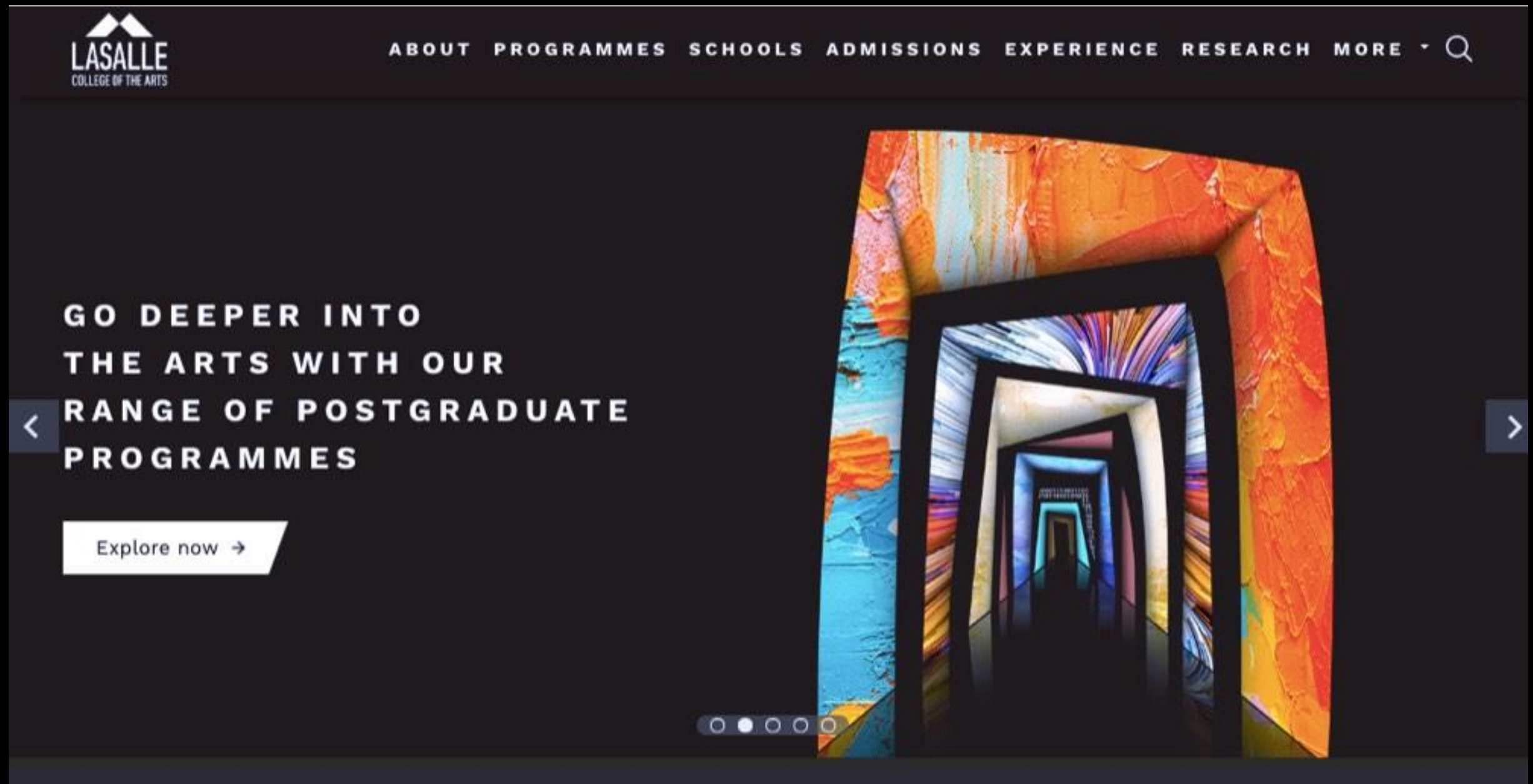


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What do you think of these designs?

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UI/UX design

= getting users
to do what we intent

Learning targets

1) DEFINE TERMS

- user interface (UI)
- user experience (UX)
- affordance
- mental model
- patterns
- visual hierarchy

2) MAKE GOOD UI/UX DESIGN DECISIONS

based on design
principles

3) CRITIQUE/RATIONALISE

Using (1) & (2)

Terminologies

UI = user interface

UX = user experience

Pop Quiz 1:

Do these statements refer to

(i) UI Design?

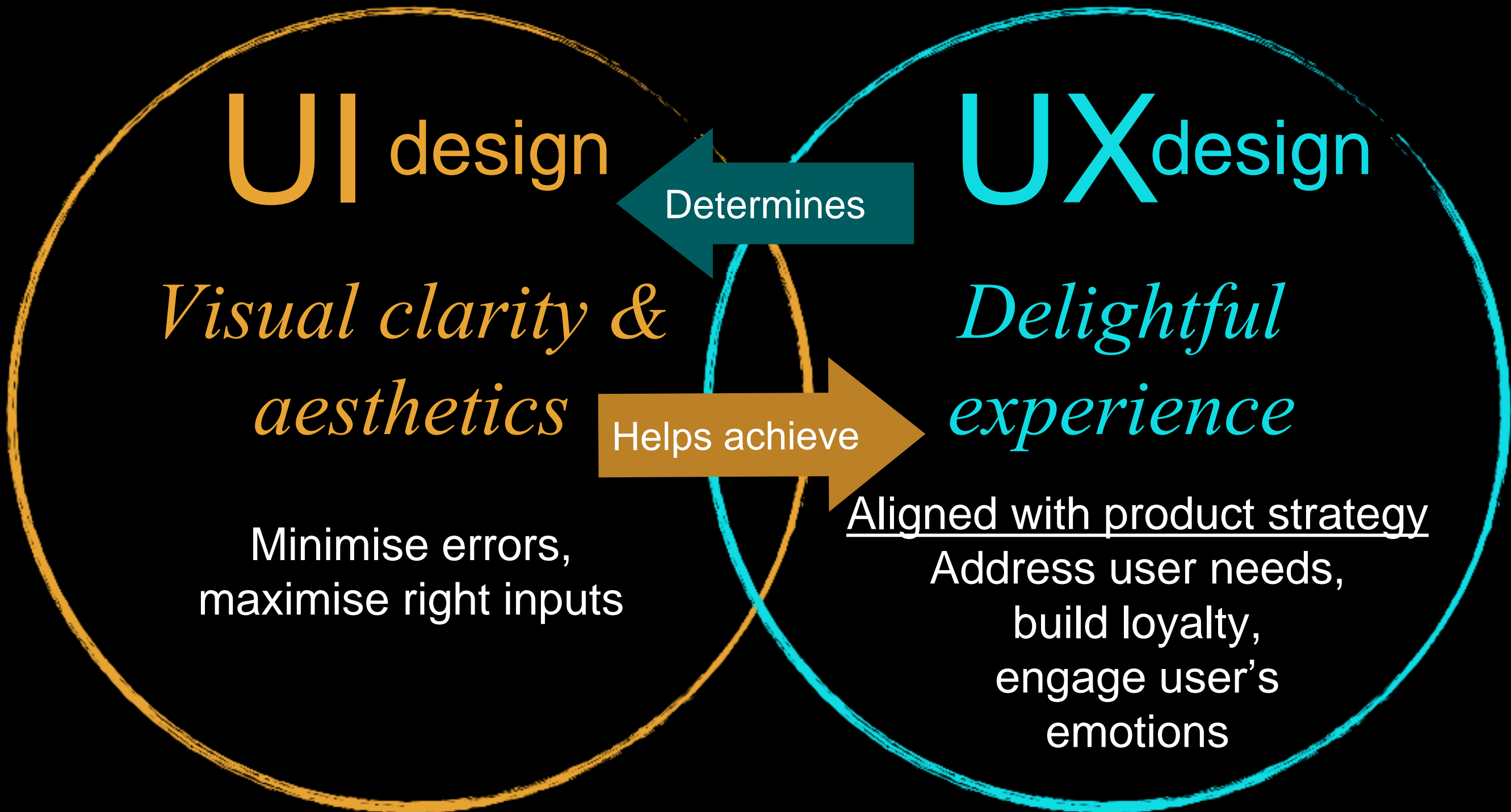
(ii) UX Design?

(iii) Or Both?

(iv) neither?

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so what is UI and UX?



Design consideration for good UI

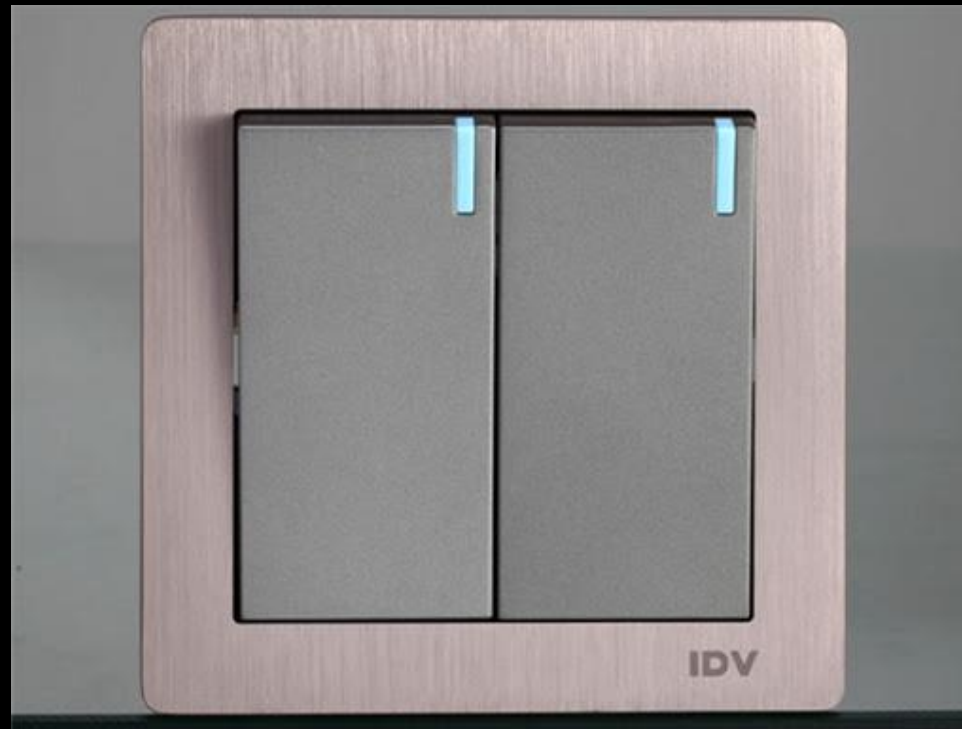
1. Mental Models
2. Affordance
3. Design pattern
4. Visual Hierarchy

1) mental models

internal representation
of reality



For a set of switches in your Mary's home, Mary expects the left switch to be for the bathroom while the right switch is for the toilet.



This is because in Mary's home, the bathroom is on the left of the toilet.

On an escalator, Daniel expects to stand on the left side.



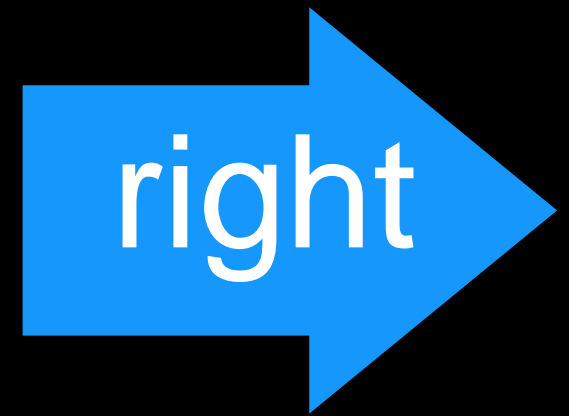
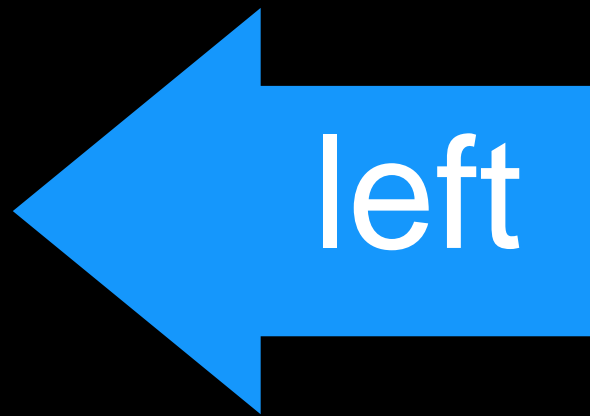
This is because for Singapore's roads, the left-most lane is meant for slower vehicles while the right-most lane is meant for overtaking

Danger

Hazard

Nature

Water



Pull

Decreasing

Backward

Push

Increasing

Forward

2) affordance

quality/characteristics

of an object

which **allow/disallow**

one to **perform an action**

How do the following show affordance?



The handle of the tea cup suggest affordance to allow users to use it to hold the tea cup which might contain hot tea.

The lack of door handle suggests to users that they can use their hands to push the door open. They can kick the door open as well.



buttons

The characteristics of the button which make it look “push-able” together form its affordances.



Radio buttons

- ☐ Leh-dio option 1
- ☐ Leh-dio option 2
- ☐ Leh-dio option 13

Radio buttons: Clicking on one option will disable the rest, suggesting to users that they can only select one option

Checkbox

- ☒ Option 1
- ☒ Option 2
- ☐ Option 3

Checkbox: Checking one box does not disable the rest, suggesting to users that they can make multiple selections

Using animations to suggest affordance



slide to unlock

> Slide to unlock!



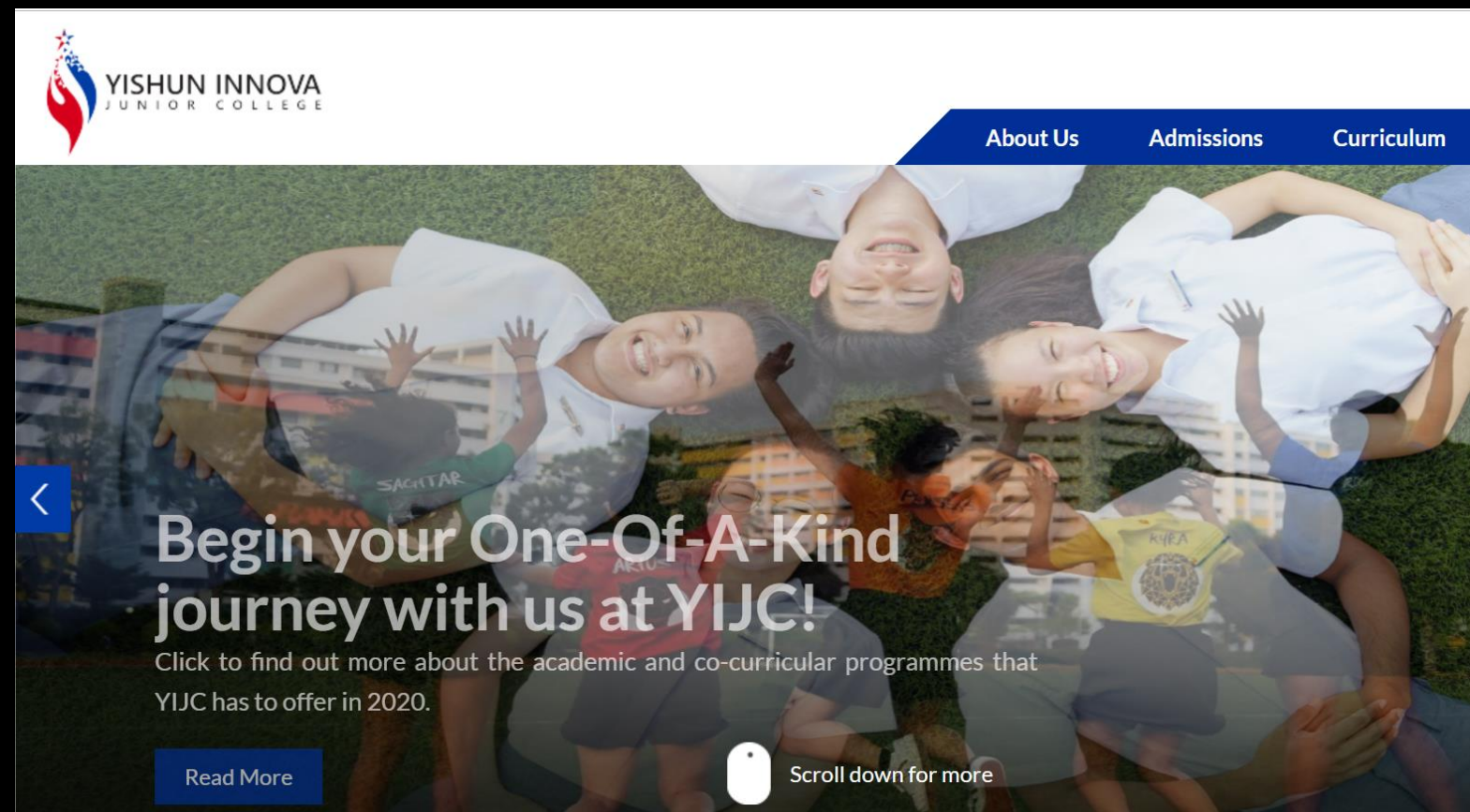
3) design patterns

common *(design)*
solutions/methods

How do the following show the use of design pattern?

YIJC's college logo is on the top left corner of the website.

Almost all websites place their logo on the top left corner.



Apple iOS used a gear icon in a button that will launch the settings for iPhones. Gear icon is commonly used in mobile apps to represent settings.

relationship of terms

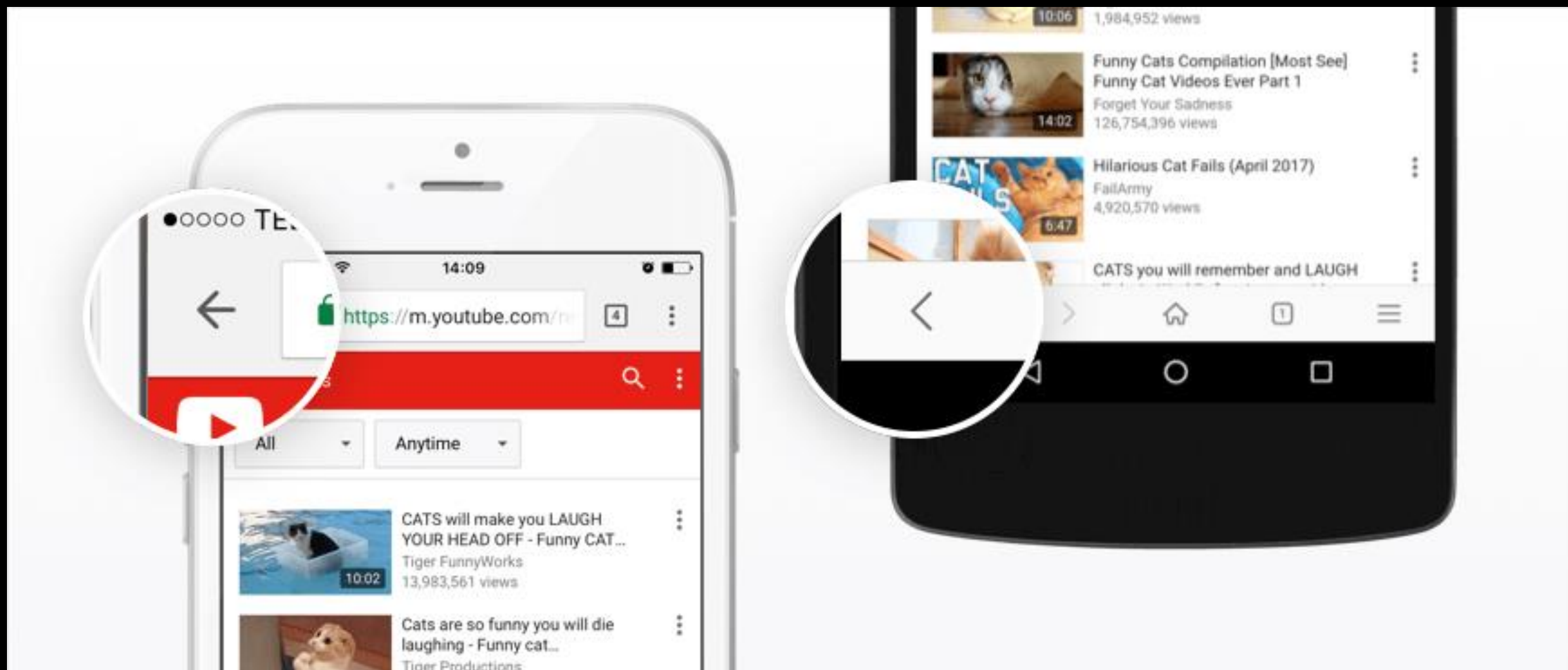


mental model



CHARACTERISTICS
/affordance

Used Commonly = Pattern



4) visual hierarchy

arrangement & formatting
of different elements to
show **relative**
importance

Using visual hierarchy

Why is visual hierarchy important?
Quick scanning. A good visual hierarchy allows users to find what they want quickly. Clear flow. With a good visual hierarchy, users are clear the sequence they should look at in a page.

Why is visual hierarchy important?

Quick scanning

A good visual hierarchy allows users to find what they want quickly.

Clear flow

With a good visual hierarchy, users are clear the sequence they should look at in a page.

You Will Notice Me First

Then, Its my turn to get noticed

Am I Getting Noticed?

Primary button / Call to action button

Secondary button

Normal state

Enter

Enter

principles of good UI/UX design

= easy to learn

= easy to find

a) Intuitive = communicate affordance

i) Using design patterns to illicit the right mental model

ii) Using context and consistency to suggest affordance and reinforce mental models

b) Digestible

iii) Using visual hierarchy

Good design

has the right
characteristics/affordance

to elicit the right mental models

with as little as possible
(eg: using patterns)

so that users does what is intended.

Good Design



RIGHT
mental model

Matches

what can be
done

Elicits

Characteristics/
Affordance

Bad Design



wrong
mental model

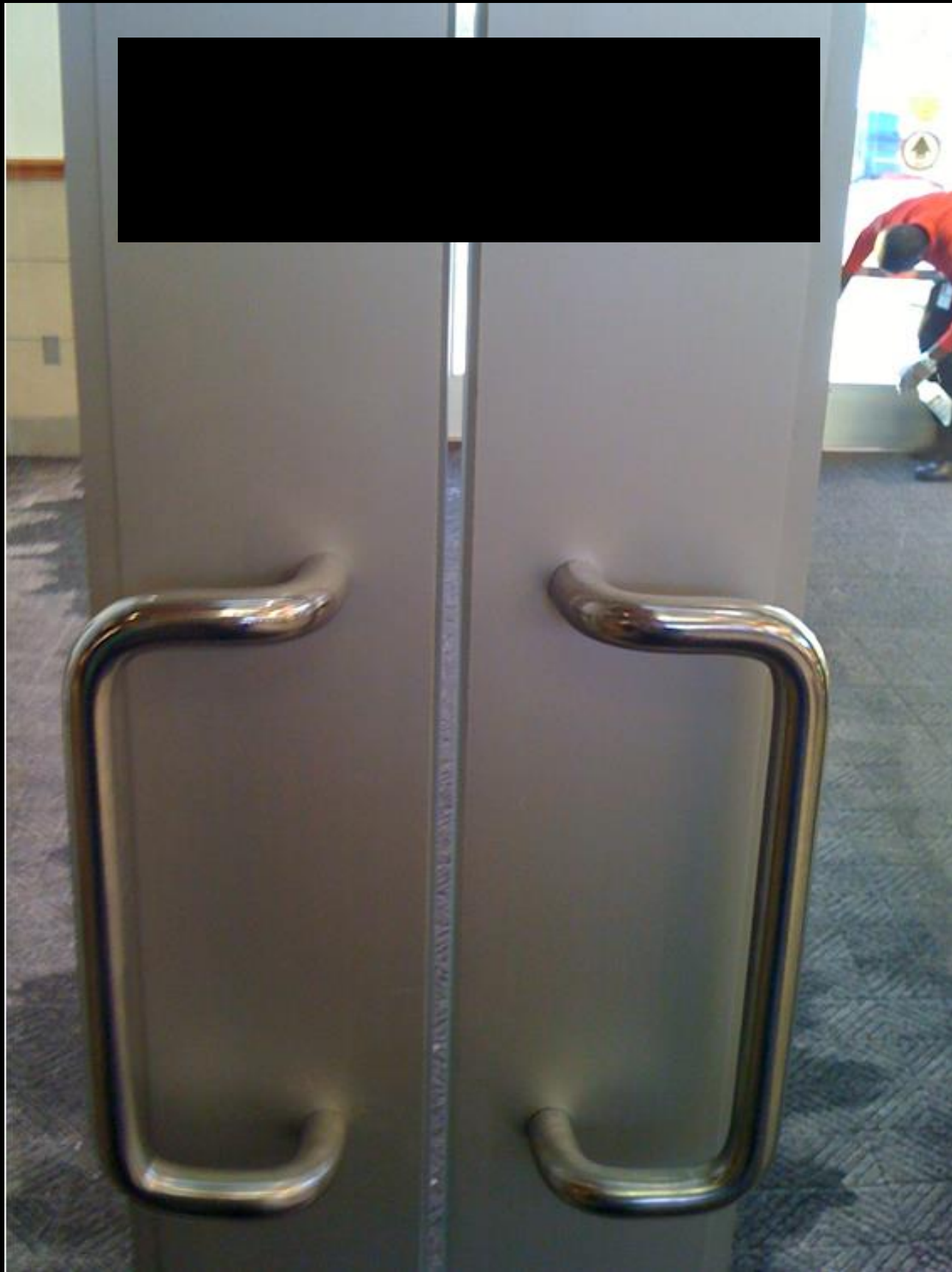
What am I
suppose to do?

does not Matches

what can be
done

Elicits

Characteristics/
Affordance







putting in to
practice...

critique

In pairs, **critique** this web form (5 mins).

- What's not done well?
- How to improve it?

Annotate on your paper.

Try using the terms & principles learnt in your justification

Prom Survey

This is to find out more about your preference for prom this year!

Name:

Gender: ☒ Male ☒ Female

Personal Information

Class:

Index No.:

Venue and cost

Rank your choice of venue:

- | | |
|----------------------|----------------------------------|
| 1) Hotel 81 | <input type="text" value="4"/> ▼ |
| 2) Fragrance Hotel | <input type="text" value="2"/> ▼ |
| 3) School Hall | <input type="text" value="1"/> ▼ |
| 4) Blk 352 Void Deck | <input type="text" value="3"/> ▼ |

How comfortable are you if the prom cost between \$50-\$60? ▼

What is the approximate amount you intend to spend to dress up for prom?



Other Comments

Thank you for doing this survey!

My favourite app

Share about your favourite mobile app (or web app) with a partner.

- Use the terminologies and concepts learnt to describe the UI/UX of your favourite app

Further Readings

- “Don’t make me think” by Steve Krug
- “Seductive Interaction Design: Creating Playful, Fun, and Effective User Experiences” by Stephen P. Anderson
- “The Design of Everyday Things” by Don Norman
“Emotional Design: Why we love (or hate) everyday things” by Don Norman.
- “Google I/O 2013 - Cognitive Science and Design”
<https://youtu.be/z2exxj4COhU>