



DECISION MAKING APPROACH TO DASHBOARD DESIGN

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Center for
Entrepreneurship

REGARDING ASSIGNMENTS



TeddyRemusLupin Update README.md

Latest commit b7e6388 16 days ago

ScrapData

Update

16 days ago

.DS_Store

Update

16 days ago

.gitattributes

Initial commit

16 days ago

Assignment3.html

Update Assignment3.html

16 days ago

README.md

Update README.md

16 days ago

impressionism_Part1-csv.openrefine.tar

Upload Assignment Files

16 days ago

impressionism_Part2-csv.openrefine.tar

Upload Assignment Files

16 days ago

impressionism_all-csv-xlsx.openrefine.tar

Upload Assignment Files

16 days ago

README.md

COM5961 Assignment3

A page to submit Assignment3

Good use of READ.me

COM5961 Assignment3

A page to submit Assignment3

Step 1: Source of the original web pages: <http://impressionistarts.com/most-expensive-impressionist-paintings.html>

Step 2: Since the page is poorly designed and it is quite difficult to scrap all the data at one time, I had to scrap the data twice and clean them up separately. Then I combined the two cleaned set and cleaned all data together. That is why I upload three project files. You can trace the steps following this order: Part1-Part2-all.

Step 3&4: The cleaned data have been imported into my Airtable with the table's name: Sale Price. Here is the link:

<https://airtable.com/invite/l?>

<https://airtable.com/invite/l?inviteId=invQcXjJgTq3Ga1kH&inviteToken=ecfbcc564c21c5b51c9632512899947875d267d07f448162655b1aae04baca5f>

A page contained the link was also created, with the name "Assignment3.html". You can find more details about the process in "ScrapData".

Using the Hello World guide, you'll start a branch, write comments, and open a pull request.

[Read the guide](#)

xxzhu1 / xxzhu1.github.io

Watch 1 Star 0 Fork 0

Code Issues 0 Pull requests 0 Projects 0 Wiki Security Insights

Branch: master xxzhu1.github.io / assignment_lesson5_game /

Create new file Upload files Find file History

xxzhu1 lesson5_game_final ... Latest commit 298e803 3 days ago

..

File	Commit Message	Time
index.html	lesson5_game_final	3 days ago
script.js	lesson5_game_final	3 days ago
style.css	lesson5_game_final	3 days ago

Using the Hello World guide, you'll start a branch, write comments, and open a pull request.

[Read the guide](#)

[Code](#) [Issues 0](#) [Pull requests 0](#) [Projects 0](#) [Wiki](#) [Security](#) [Pulse](#) [Community](#)

Branch: master ▾

[xxzhu1.github.io / assignment_lesson5_game / index.html](#)

[Find file](#) [Copy path](#)

 xxzhu1 lesson5_game_final

298e803 3 days ago

1 contributor

Fork this project and delete the file

43 lines (41 sloc) | 1.53 KB

[Raw](#) [Blame](#) [History](#)



```
1 <!DOCTYPE html PUBLIC "-//W3C//DTD HTML 4.01//EN">
2 <html>
3 <head>
4   <title>lesson5_game</title>
5   <meta charset="utf-8">
6   <meta name="viewport" content="width=device-width, initial-scale=1.0" />
```

Good file naming.

RECAP

Basic Structure of a JavaScript Function

```
<head>
<script>
function function_name(parameter1, parameter 2...){
    Embed data type variables, input/output commands and
    logical and mathematical operators in the function to
    compute and return values.
}
</script>
</head>
```

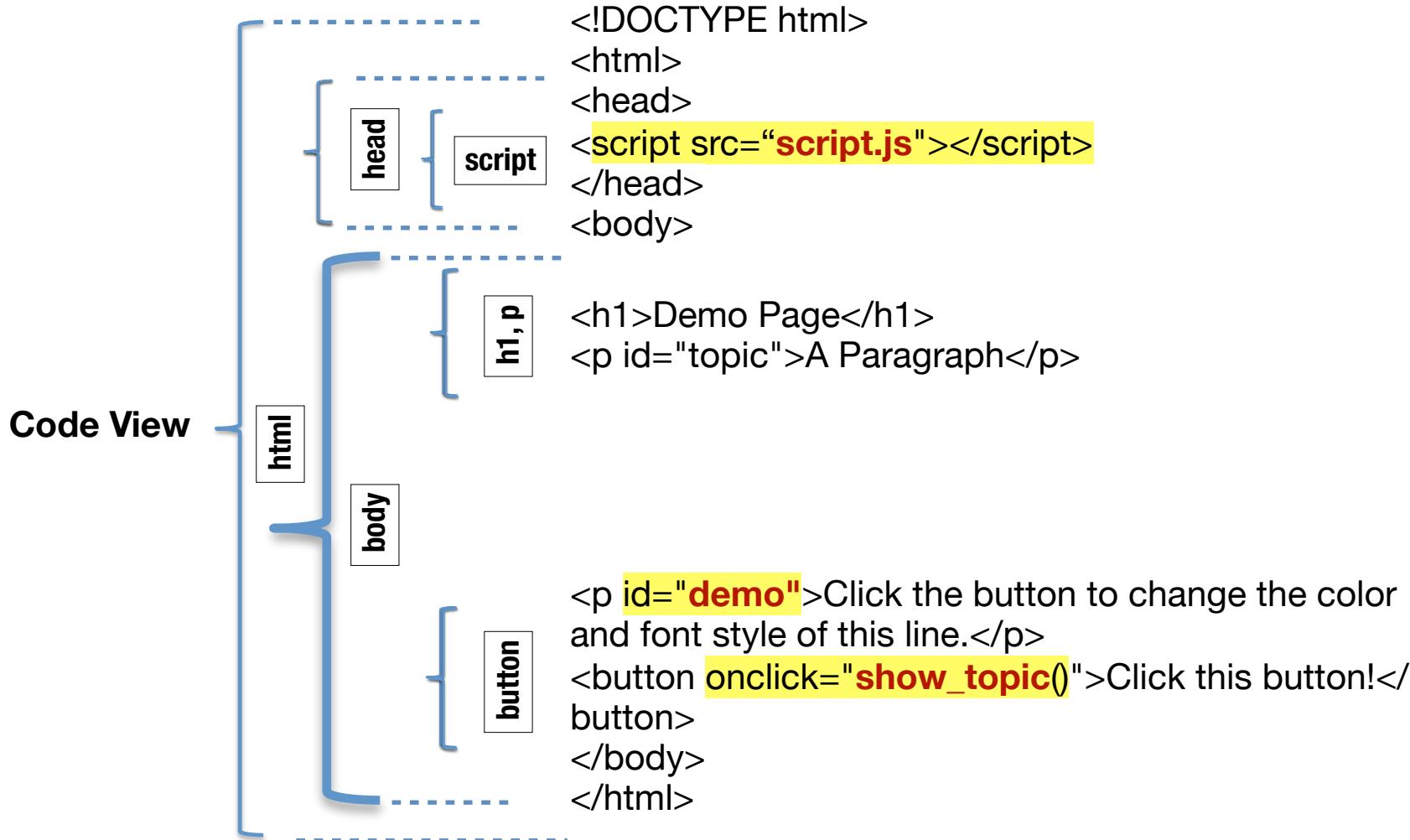
optional parameters



Code View

```
<!DOCTYPE html>
<html>
<head>
<script>
function show_topic() {
    var x = document.getElementById("demo");
    x.style.fontSize = "25px";
    x.style.color = "red";
}
</script>
</head>
<body>
<h1>Demo Page</h1>
<p id="demo">Click the button to change the color and font
style of this line.</p>
<button onclick="show_topic()">Click this button!</button>
</body>
</html>
```

The diagram illustrates the hierarchical structure of the provided HTML code. On the left, vertical blue brackets group elements by type: 'html', 'head', 'body', 'h1, p', 'script', and 'button'. To the right of these brackets, labels identify each element: 'html', 'head', 'body', 'h1, p', 'script', and 'button'. The 'script' label is positioned above the script block, and the 'button' label is positioned above the button block. The 'h1, p' label is positioned between the h1 and p elements within the body. The 'head' label is positioned above the head section, and the 'body' label is positioned above the body section.





Plugins Contribute Events Support JS Foundation



Your donations help fund the continued development and growth of jQuery.

SUPPORT THE PROJECT

Download API Documentation Blog Plugins Browser Support

Search



Lightweight Footprint

Only 30kB minified and gzipped. Can also be included as an AMD module



CSS3 Compliant

Supports CSS3 selectors to find elements as well as in style property manipulation



Cross-Browser

Chrome, Edge, Firefox, IE, Safari, Android, iOS, and more



Download jQuery

v3.3.1

The 1.x and 2.x branches no longer receive patches.

[View Source on GitHub →](#)

[How jQuery Works →](#)

What is jQuery?

jQuery is a fast, small, and feature-rich JavaScript library. It makes things like HTML document traversal and manipulation, event handling, animation, and Ajax much simpler with an easy-to-use API that works across a multitude of browsers. With a combination of versatility and extensibility, jQuery has changed the way that millions of people write JavaScript.

Other Related Projects



Resources

- [jQuery Core API Documentation](#)
- [jQuery Learning Center](#)
- [jQuery Blog](#)
- [Contribute to jQuery](#)
- [About the jQuery Foundation](#)
- [Browse or Submit jQuery Bugs](#)

A Brief Look

Basic jQuery Structure & Syntax

This means:

When the HTML document (i.e. DOM) is loaded,
add the following jQuery functions (**in orange**) to
your javascripts

```
$(document).ready(function() {
```

Your jQuery functions go inside here.

```
});
```

The following code demonstrates the basic structure of a jQuery function. The **selector** and **method** are two ingredients used to define a jQuery function:

```
$("<selector>").<method>('event',function(){  
    The actual script goes here.  
});
```

Example:

```
$("button#hide_h2").on('click',function(){  
    $("h2").hide();  
});
```

```
$(document).ready(function() {  
    $("button#hide_h2").on('click',function(){  
        $("h2").hide();  
    });  
  
    $("button#show_h2").on('click',function(){  
        $("h2").show();  
        $("h2").css("color","blue");  
        $("h2").html("You clicked me.");  
    });  });
```

Working with JSON and JQuery

CLASS EXERCISE LINKS

JQuery DataTable ([http://www.webslesson.info/2016/07/
show-json-data-in-jquery-datatables.html](http://www.webslesson.info/2016/07/show-json-data-in-jquery-datatables.html))

Let's walkthrough the codes.

```
<body>
    <br /><br />
    <div class="container">
        <h1 align="center">Show JSON Data in Jquery Datatables</h3><br />
        <h3 align="center">Employee Database</h3><br />
        <table id="data-table" class="table table-bordered">
            <thead>
                <tr>
                    <th>Name</th>
                    <th>Gender</th>
                    <th>Designation</th>
                </tr>
            </thead>
        </table>
    </div>
</body>
```

THE HTML OBJECT

```
$(document).ready(function() {  
  
});
```

```
$(document).ready(function() {  
    $('#data-table').DataTable({  
        "ajax" : "employee_data.json",  
        "columns" : [  
            { "data" : "name" },  
            { "data" : "gender"},  
            { "data" : "designation"}  
        ]  
    });  
});
```

THE JQuery Codes

```
{  
  "data" : [  
    {  
      "name": "Michael Bruce",  
      "gender": "Male",  
      "designation": "System Architect"  
    },  
    {  
      "name": "Jennifer Winters",  
      "gender": "Female",  
      "designation": "Senior Programmer"  
    },  
    {  
      "name": "Donna Fox",  
      "gender": "Female",  
      "designation": "Office Manager"  
    },
```

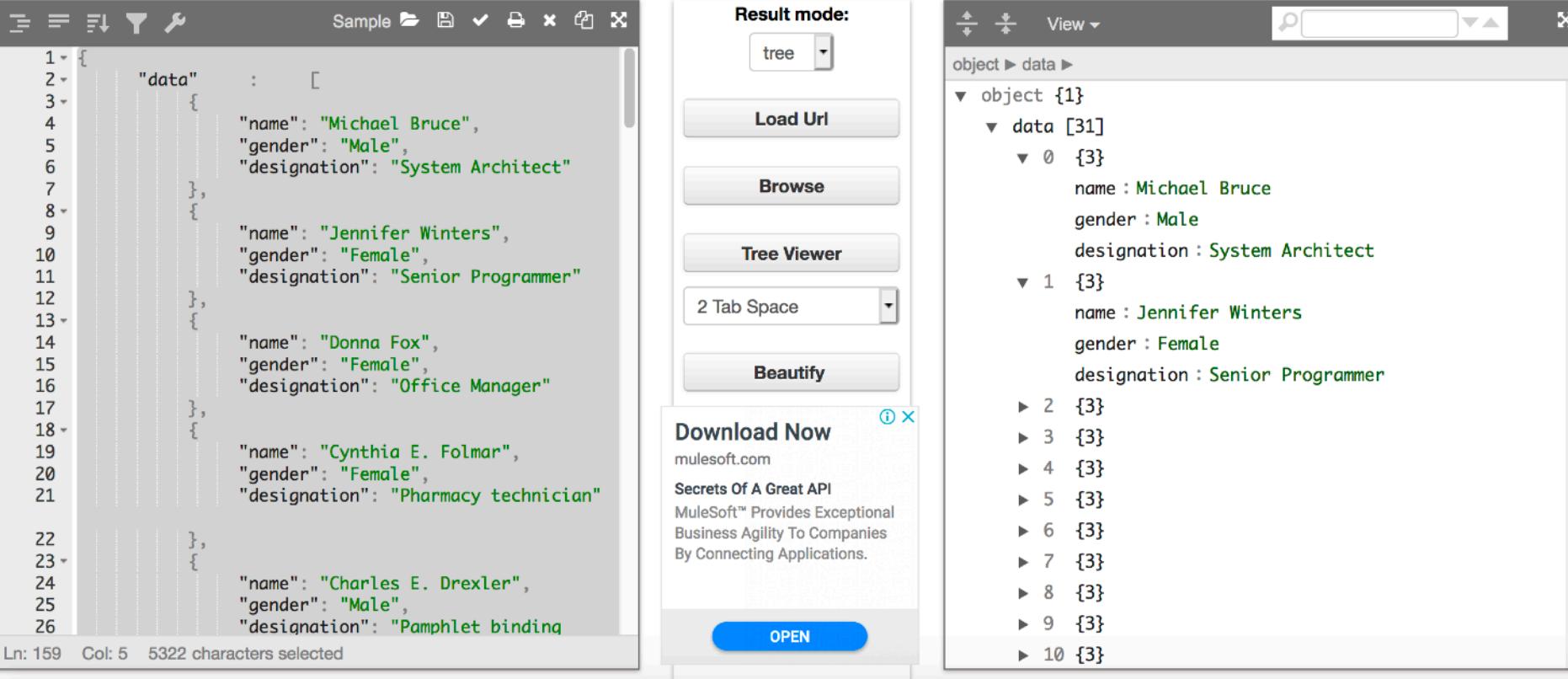
THE JSON DATA

- **Converting CSV to JSON (<https://shancarter.github.io/mr-data-converter/>)**
- **Viewing JSON (<https://codebeautify.org/jsonviewer>)**
- **Converting JSON to CSV (<https://json-csv.com/>)**
- **Importing CSV into Airtable**

Let's look at the data in JSON and CSV formats.

JSON Viewer★

Save & Share



The screenshot displays the JSON Viewer interface on the Code Beautify website. On the left, a code editor window shows a JSON array of objects. The code is:

```
1  {
2   "data": [
3     {
4       "name": "Michael Bruce",
5       "gender": "Male",
6       "designation": "System Architect"
7     },
8     {
9       "name": "Jennifer Winters",
10      "gender": "Female",
11      "designation": "Senior Programmer"
12    },
13    {
14      "name": "Donna Fox",
15      "gender": "Female",
16      "designation": "Office Manager"
17    },
18    {
19      "name": "Cynthia E. Folmar",
20      "gender": "Female",
21      "designation": "Pharmacy technician"
22  },
23  {
24    "name": "Charles E. Drexler",
25    "gender": "Male",
26    "designation": "Pamphlet binding"
27  }
28]
```

Below the code editor, status information reads: Ln: 159 Col: 5 5322 characters selected.

In the center, a sidebar titled "Result mode:" offers four options: "tree" (selected), "Load Url", "Browse", and "Tree Viewer". A "Beautify" button is also present. An advertisement for MuleSoft's "Secrets Of A Great API" is displayed below the mode selector.

To the right, a "View" window shows the JSON data in a hierarchical tree structure. The data array contains 31 items, indexed from 0 to 10. Each item is an object with three properties: name, gender, and designation. The first few items are explicitly listed:

- 0 {3}
 - name : Michael Bruce
 - gender : Male
 - designation : System Architect
- 1 {3}
 - name : Jennifer Winters
 - gender : Female
 - designation : Senior Programmer
- 2 {3}
- 3 {3}
- 4 {3}
- 5 {3}
- 6 {3}
- 7 {3}
- 8 {3}
- 9 {3}
- 10 {3}

<https://codebeautify.org/jsonviewer>

JSON to CSV Converter

Upload JSON file

.json / .zip up to 1 MB (50 MB PRO)

```
{  
  "data" : [  
    {  
      "name": "Michael"  
    }  
  ]  
}
```



DOWNLOAD CSV

or Excel File (XLSX)

copied

or do something clever
with this result...

reset

name	gender	designation
Michael Bruce	Male	System Architect
Jennifer Winters	Female	Senior Programmer
Donna Fox	Female	Office Manager
Cynthia E. Folmar	Female	Pharmacy technician
Charles E. Drexler	Male	Pamphlet binding worker
Andre F. Morris	Male	Respiratory therapy technician
James P. Baumgartner	Male	Diesel mechanic
Harold E. Welter	Male	Cooling and freezing equipment operator
Antionette J. Ellard	Female	Power plant distributor

<https://json-csv.com/>

Show JSON Data in Jquery Datatables

Employee Database

Show 10 entries

Search:

Name	Gender	Designation
Andre F. Morris	Male	Respiratory therapy technician
Antionette J. Ellard	Female	Power plant distributor
Antonia K. Vogl	Female	Psychiatrist
Art D. Steiner	Male	Camp director
Barbara W. Ibarra	Female	Regional geographer
Brenda J. Fowler	Female	Radio equipment installer
Carol T. McDill	Female	Power distributor
Charles E. Drexler	Male	Pamphlet binding worker
Cheryl P. Mahn	Female	Credit manager
Christina R. Relin	Female	Cost engineer

<https://ybsuen.github.io/com5961-2019/lesson7/json-datable.html>

Recap of Data Visualisation Concepts

BASIC VISUAL ELEMENTS

- **Line**
- **Shape**
- **Form**
- **Texture**
- **Balance**
- **Composition**

BASIC COMPOSITION PRINCIPLES

- **Proximity**
- **White Space**
- **Alignment**
- **Contrast**
- **Repetition**

BASIC CHART TYPES

- **Line Chart**
- **Bar Chart**
- **Pie Chart**
- **Scatter Plot**
- **Box and Whisker Graph**

VISUAL ENCODING

- **Choosing the right chart type to fit its purpose**
- **Use of titles and legends**
- **Length or height and line weight**
- **Position, Angle, and Area**
- **Color, Hue and Shade**

BASIC HCI PRINCIPLES

- **Affordance**
- **Mental models**
- **Signifiers**

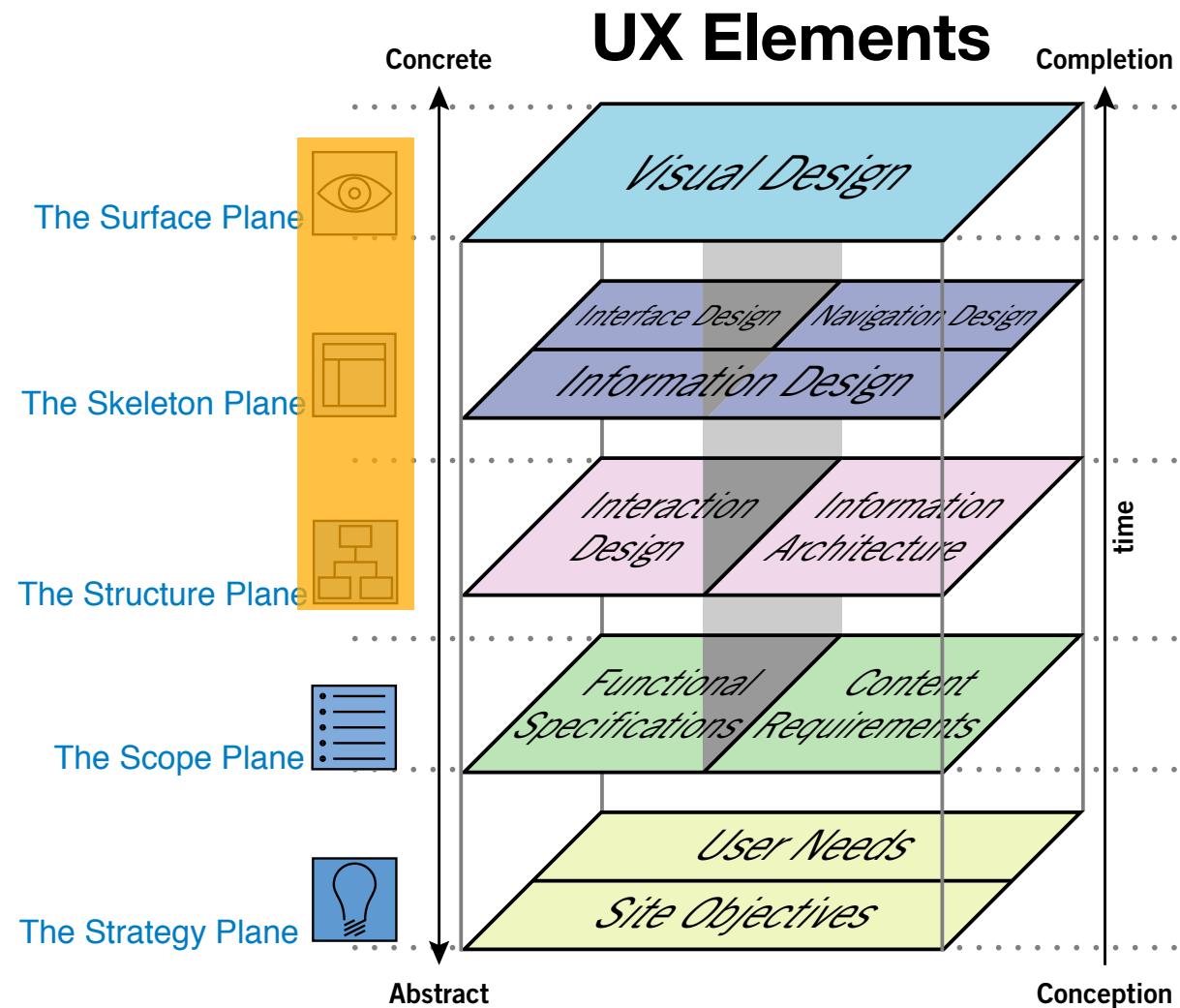
COMMON DESIGN PATTERNS

COMMON DESIGN PATTERNS

- **TOOLBAR**
- **APP BAR**
- **TAB**
- **DROPDOWN**
- **APPLICATION DRAWERS**
- **LIST TO DETAILS**
- **MULTI PLANE**

USE OF UI CONVENTION IN BOOTSTRAP

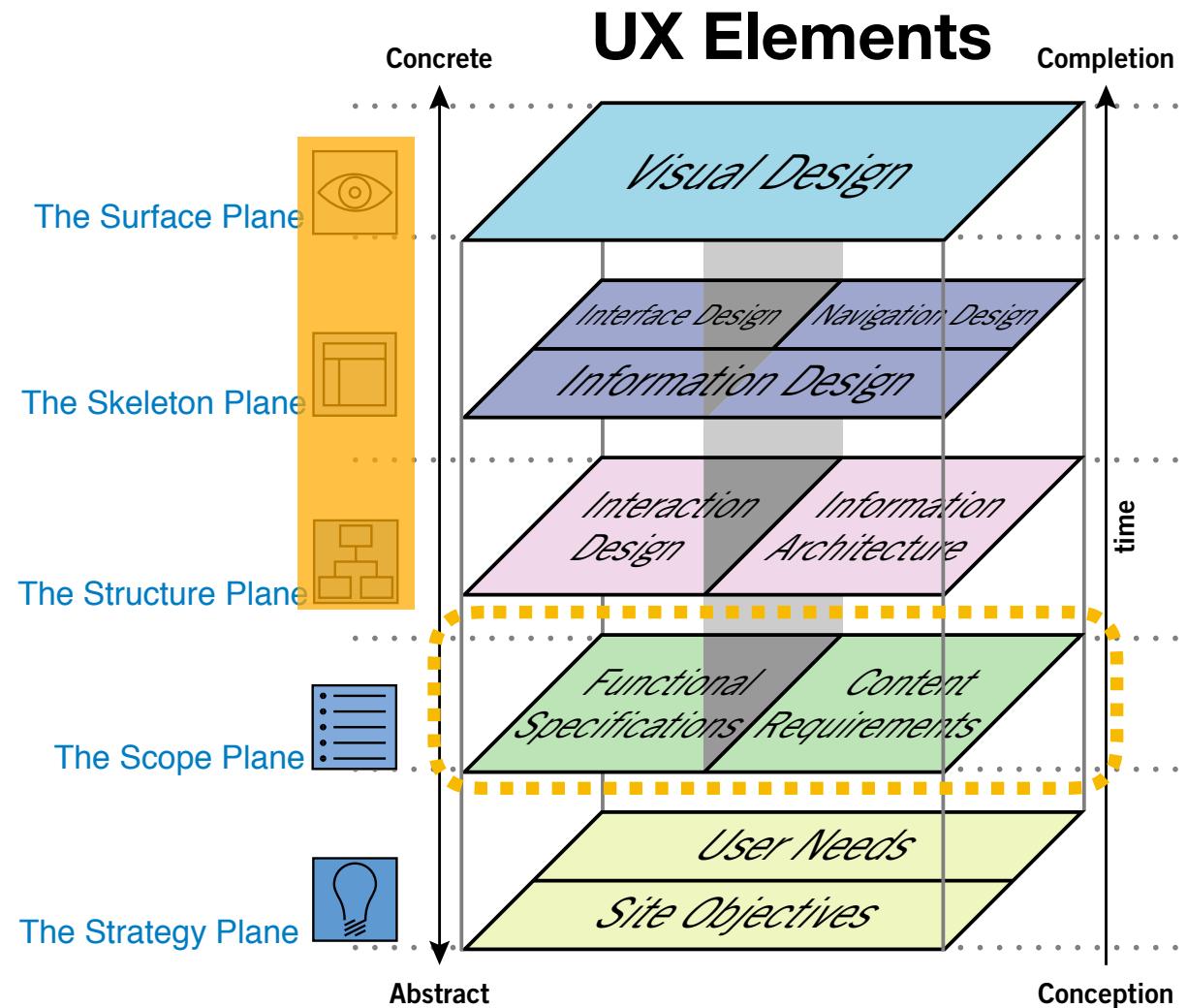
Which levels do you find the data visualisation elements we discussed last time most relevant?



Source: Elements of User Experience
by Jesse James Garrett

**HOW DO YOU CONNECT THE LOWER LEVELS TO THE
HIGHER LEVELS?**

The interaction design (HCI principles), user interface (patterns reference), and visual design (graphical composition principles) are driven by the functional spec. and content requirement, which is defined by the problem statement.



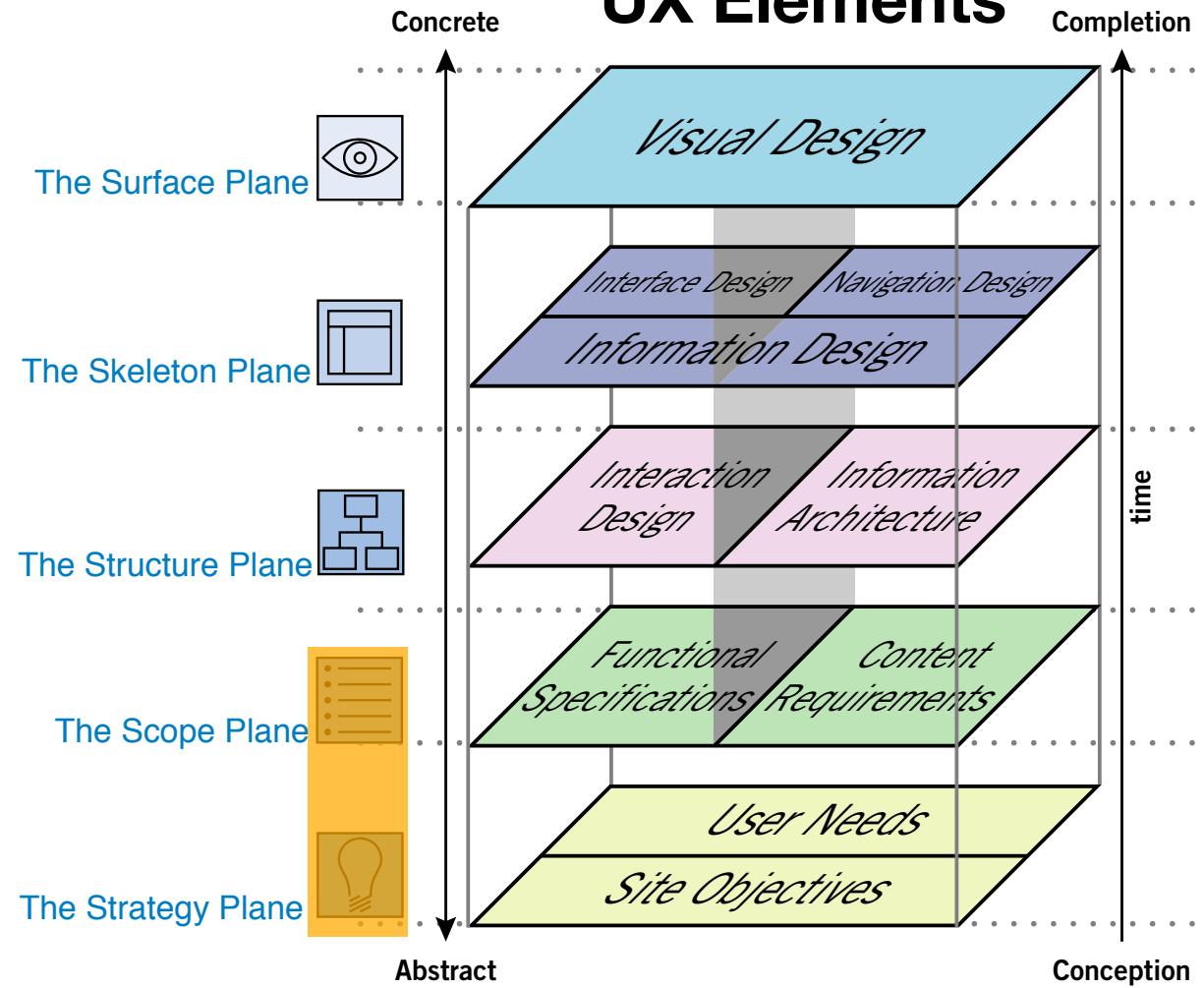
Source: Elements of User Experience
by Jesse James Garrett

FORM FOLLOWS FUNCTION, FUNCTION FOLLOWS FICTION

形式跟随功能, 功能跟随故事

**THIS GOES BACK TO HOW WELL WE DEFINE THE PROBLEM:
MAPPING ITS STRATEGY AND SETTING ITS SCOPE IN TELLING A
GOOD STORY**

UX Elements



Source: Elements of User Experience
by Jesse James Garrett

CONDUCTING RESEARCH TO DEFINE THE “NEEDS”

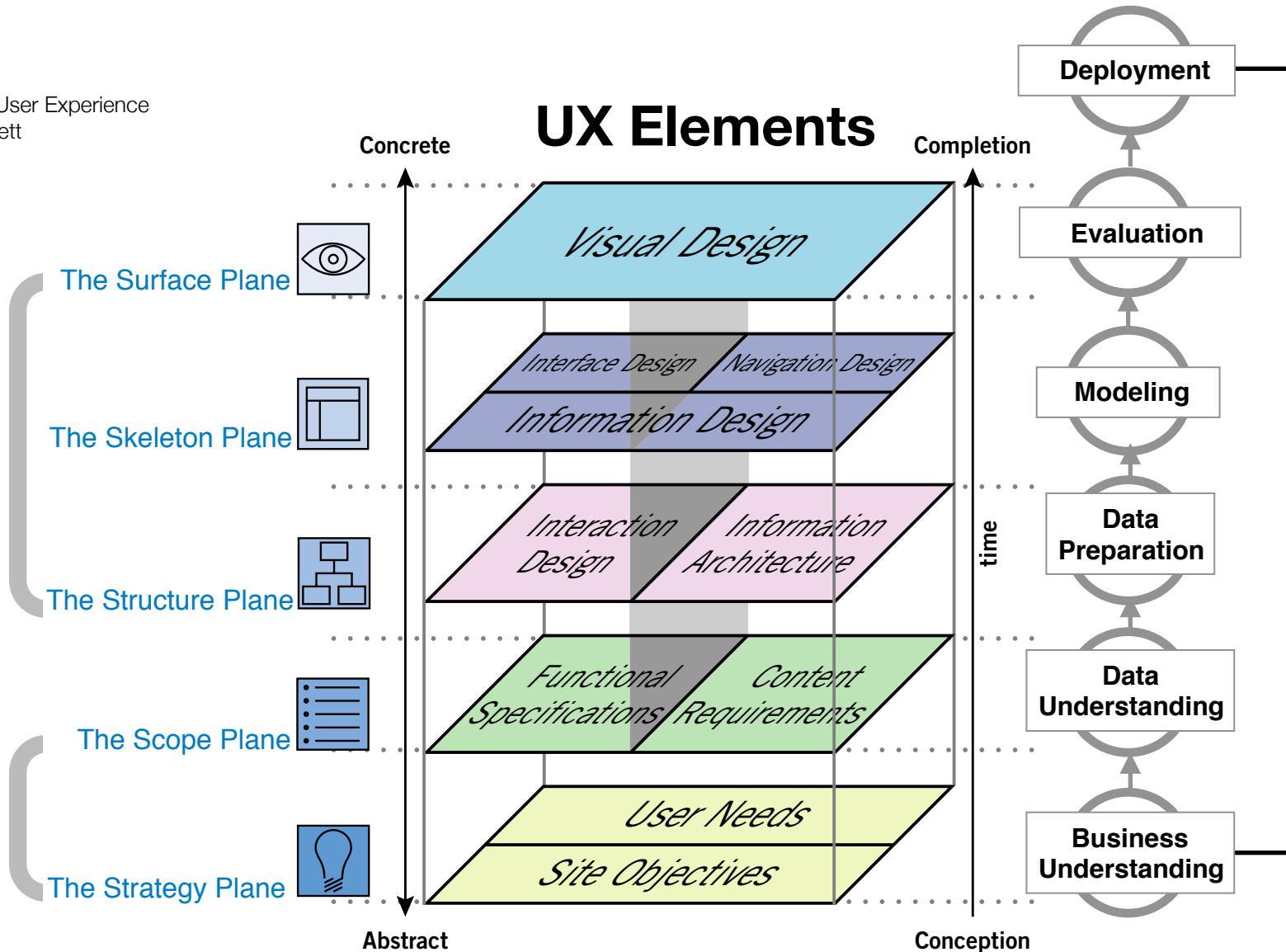
Source: Elements of User Experience
by Jesse James Garrett

Solution Space

how and
how much

Problem Space

who, what,
and why





谁人的问题?谁人的需要?问题情境怎样形成?有那些持份者?用甚么产品或服务去满足需要?去解决问题?为何要满足这需要和解决这问题?当中能创造甚么价值?



怎样去满足需要?有没有关键的技术?如何找资源?如何建立系统把资源启动起来?如何突出解决方案,比其他方案更有竞争力,拿到更多的资源?



如何定价?生产多少?如何平衡成本及增长、创造经济性及非经济性——例如社会和环境的价值?

Adapted from IDEO Design Thinking Toolkit



About CUHK



Welcome Message

I am delighted that you are considering The Chinese University of Hong Kong for your undergraduate studies.

Founded in 1963 with a mission "to combine tradition with modernity, and to bring together China and the West", the University has, since its founding, developed into an academic institution of international standing, well-known for its excellence in both teaching and research.

Welcome Message

Explore CUHK

[Explore CUHK](#)
[Distinguished Scholars](#)
[Facts & Figures](#)
[Virtual Campus Tour](#)

Student Life

[Campus & Accommodation](#)
[Student Exchange Programme](#)
[I-CARE Programme](#)
[Student Support](#)
[Voices of Students](#)

Colleges

[A Unique College System](#)
[College Assignment](#)

CUHK Through the Lens

Empathise
身同感受

Define
界定问题

Ideate
創意發想

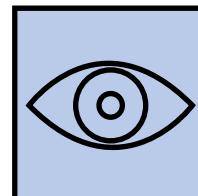
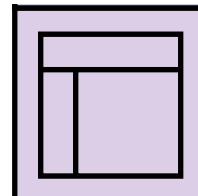
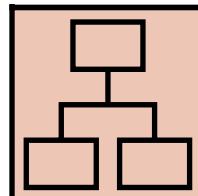
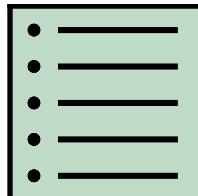
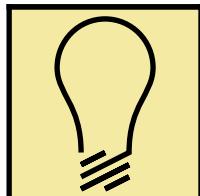
Prototype
開展原型

**Test &
Implement**
測試執行

THE 5 STEP DESIGN THINKING JOURNEY

Source: Stanford D.School

SITE OBJECTIVES		TARGET USERS		USER NEEDS
Primary goal	Become top tier university in the world.	Primary User	Top local students and world-class academics	Apply for degree enrollment and job vacancies.
Additional goal	Increase research output.	Secondary User	Chinese students interested in the west	Interested to come to CUHK to study.
Additional goal	Build strong alumni network.	Secondary User	Foreign students interested in PRC	Will consider CUHK for full-degree and exchange program.



STRATEGY PLANE

Empathise
身同感受

Define
界定问题

Ideate
創意發想

Prototype
開展原型

**Test &
Implement**
測試執行

THE 5 STEP DESIGN THINKING JOURNEY

Source: Stanford D.School

THE JOURNEY AS A STORY

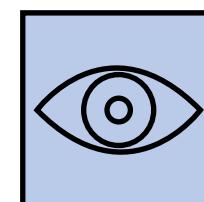
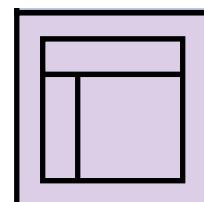
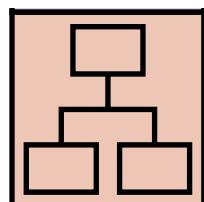
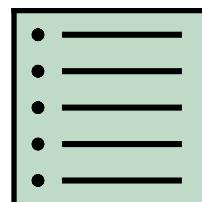
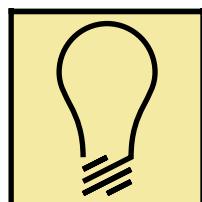
ELEMENTS

1. 人 (人物) PERSONA
2. 景 (場景) CONTEXT
3. 物 (物件) ARTIFACTS
4. 用 (使用) SCENARIOS

STRUCTURE

1. 起 (人物背景) BEGINNING
2. 承 (問題) CHALLENGE
3. 轉 (發展方案) RESPONSE
4. 合 (完成狀況) END

資料來源---劇本導引：
資訊時代產品與服務設計新法
作者余德彰，林文綺，王介丘



SCOPE PLANE

	起	承	转	合	
人物	- Local - PRC/ International	Curious about the school and program	Getting serious and anxious	Excitement	
场景	online promotion	school recruitment	CUHK	online/email	
文物	website	brochure/ presentation	- campus map - hk map - application form	letter of acceptance	
情况	online research Persona wants to filter program	staff roadshow Persona meets professor and CUHK staff	school visit Check out the school	application Finalize options Accept offer	admission

例子

PROBLEM STATEMENT:

How can CUHK's website help new student and staff applicants **pursue their career objectives** over the alternatives out there while at the same time **communicate** the school's brand to continue attracting the best?

REVISIT MIT/MARRIOT PROJECT



FIELD STUDY OBSERVATION AT THE HOTEL

We noticed a desire for customer autonomy, contextualized experiences, and public privacy.

Source: MIT Mobile Experience Lab



Source: MIT Mobile Experience Lab

PROBLEM STATEMENT:

How might we make marriott guests
feel like **nodes within a network**
while encouraging
interactions in the lobby space?

**Source: MIT Mobile
Experience Lab**

THE JOURNEY AS A STORY

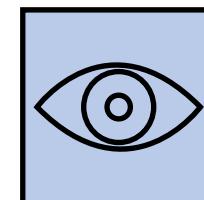
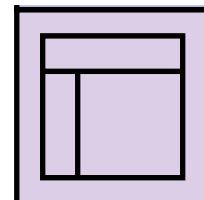
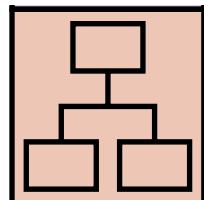
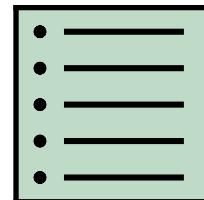
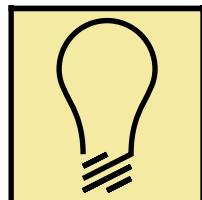
ELEMENTS

1. 人 (人物) PERSONA
2. 景 (場景) CONTEXT
3. 物 (物件) ARTIFACTS
4. 用 (使用) USE CASE

STRUCTURE

1. 起 (人物背景) BEGINNING
2. 承 (問題) CHALLENGE
3. 轉 (發展方案) RESPONSE
4. 合 (完成狀況) END

資料來源---劇本導引：
資訊時代產品與服務設計新法
作者余德彰，林文綺，王介丘



SCOPE PLANE

avid social explorer

Gen Y travelers seeking personalized yet serendipitous experiences, good company to share them with, and the ability to capture and celebrate them.



bored lobbygoer in transition

Anyone using the lobby as a meeting place or gathering point, looking to pass the time and avoid awkwardness.



PERSONA

The collage includes:

- A whiteboard with hand-drawn wireframes for a mobile application, including sections for "HOME", "ABOUT", "LOG IN", and "LOG OUT".
- A whiteboard with handwritten notes and sketches, including a section titled "GREAT!" with a checkmark and a note about "Feedback + Financial Guidance".
- A whiteboard with a list of "MORE FEATURES" including "Safe", "Possible", "Earnest Savings", "Personalized Financial Guidance", and "Easy Transfer Bank".
- A wall covered in colorful sticky notes organized into columns labeled "MEANS..." and "GOOD".
- A table covered in numerous colorful sticky notes, with a person's hand visible pointing at one.

Source: MIT Mobile Experience Lab

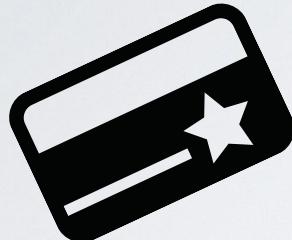


CONTEXTS

Source: MIT Mobile Experience Lab

ARTEFACTS

THE CARD



room key
point counter
status symbol

THE TABLE



THE APP



shared memory
social networks
recommendations

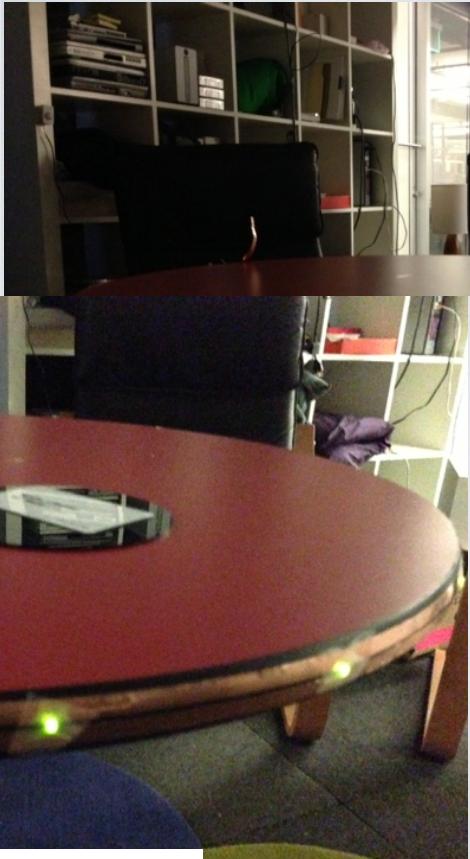
LOYALTY

INTERACTION

DATA

Source: MIT Mobile
Experience Lab

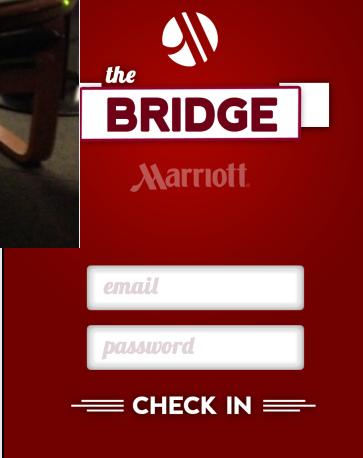
TABLE



ARTEFACTS



APP



CARD

Source: MIT Mobile Experience Lab



ROLE PLAY PHYSICAL EXPERIENCE

USE CASE

Source: MIT Mobile Experience Lab

Journey Map

	BEGIN	CHALLENGE	RESPONSE	RETURN
PERSONA				
CONTEXT				
ARTEFACTS				
USE CASE				

HOME

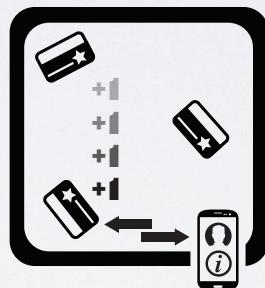


Joins loyalty program, creates a profile & installs phone app.

LOBBY



Given physical loyalty card on check-in — stores profile info, points & doubles as room key.



(Can be done in lobby or room)
Set availability via orientation of card. (Lobby only) Loyalty points awarded to cards at the same table. Table lights up to show activity, interests shown on table & lobby display map. Profiles added to app network.

ROOM

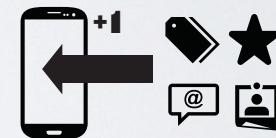
BOOKING

CHECK-IN

MEETUP

RETURN

INTERACTIONS OUTSIDE HOTEL



Prompted by app to tag places visited, ratings & social media for points — added to in-app database of recommendations.

Source: MIT Mobile Experience Lab

HOME

LOBBY

ROOM

BOOKING

CHECK-IN

MEETUP

Source: MIT Mobile
Experience Lab

USER JOURNEY MAP

profile, activity, points

Booking
Data

Check-in
Data

Interact-
ion Data

Review
Data

Give check-in points
on app.
Get activity points
from other users at the
same table. Table lights up
to show activity, interests shown
on table & lobby display map.
Profiles added to app network.



Database

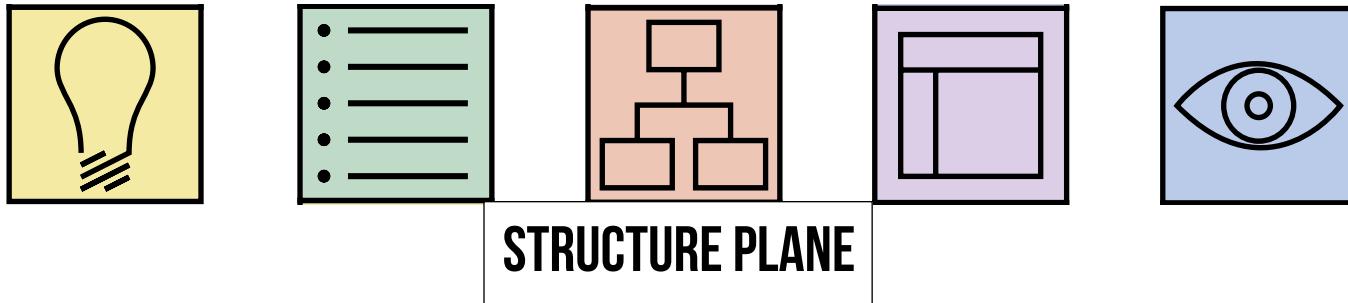
profile, activity,
points

INTER
ACT
IONS

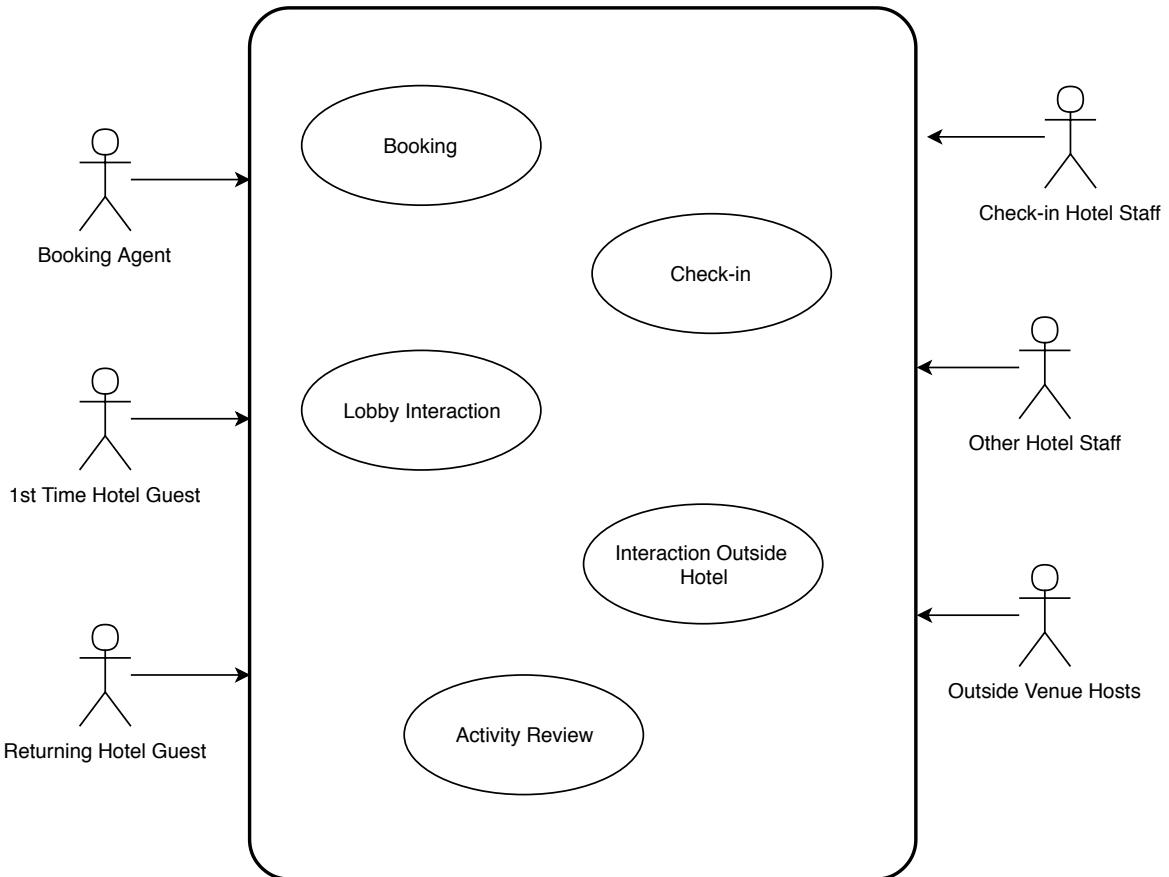
OUTSI
DE

INTE
RIOR

OUTSI
DE



Source: Elements of User Experience
by Jesse James Garrett



Use Cases of a system

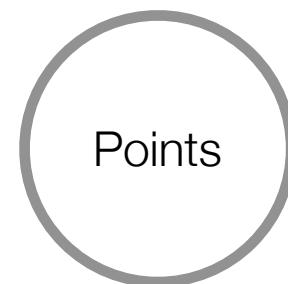
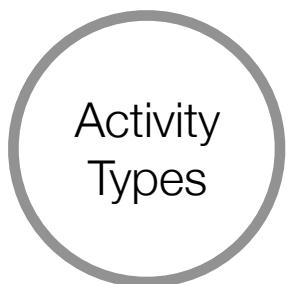
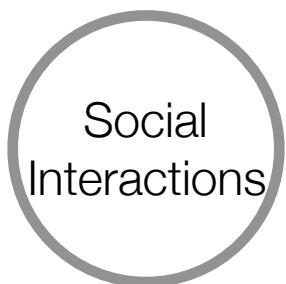
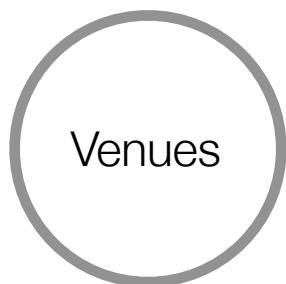
Derive data entities from use cases.

Information architecture combines the art and science of structuring, organizing, labeling, navigating, and searching information space.

How do you organize this?



Data Entities to be Tracked



- e.g.
 - 1st time guests
 - Returning guests
- e.g.
 - Starbuck
 - Bar inside hotel
 - Boston Metropolitan Museum
- e.g.
 - Add friends
 - Take pictures
 - Share rides
 - Split bills
- e.g.
 - Museum tour
 - Bar hopping
 - Scenic picture taking
 - Business meeting
- e.g.
 - Revisit
 - Dine in hotel
 - Shop in hotel
 - Initiate contact
 - Give reviews

Content Organization Scheme

Logical Grouping

- **Alphabet**
- **Time**
- **Place**
- **Hierarchy**
- **Category**

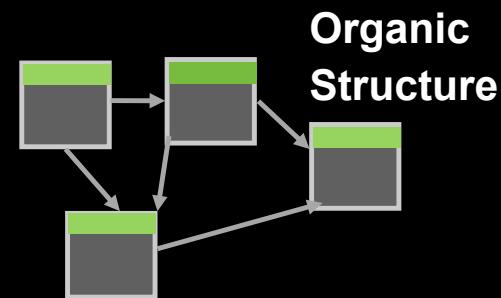
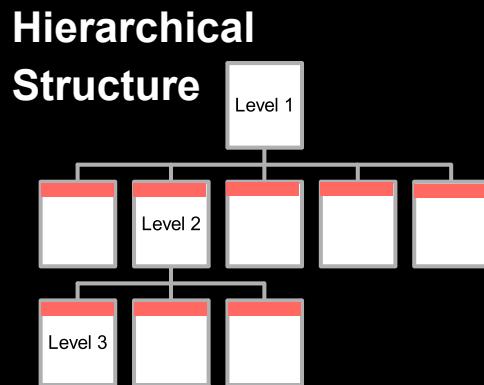
Source: Richard Wurman, “Information Anxiety”

Visual Grouping

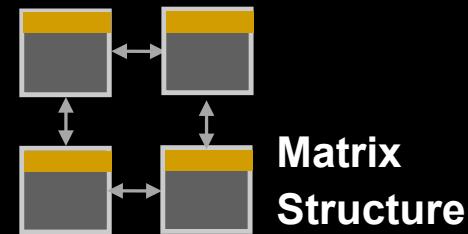
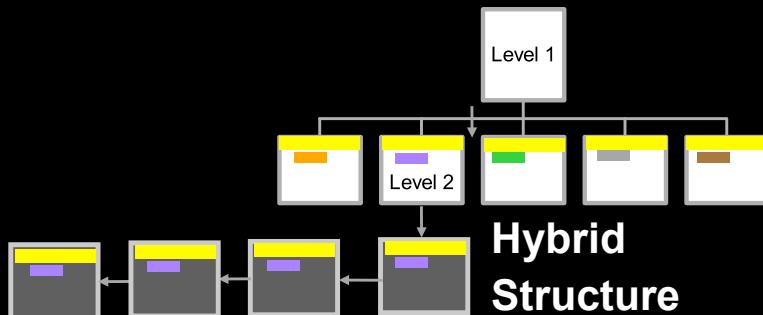
- **Linear**
- **Parallel**
- **Web**
- **Matrix**
- **Hierarchical**
- **Spatial Zoom**
- **Overlay**

Source: Clement Mok, “Designing Business”

Information Architecture

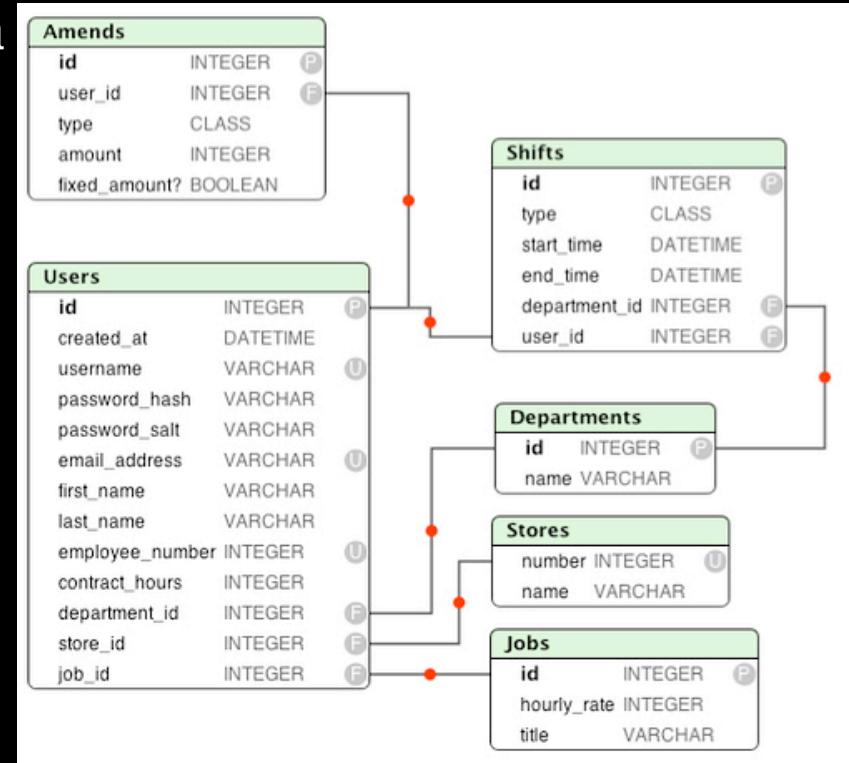


Sequential Structure



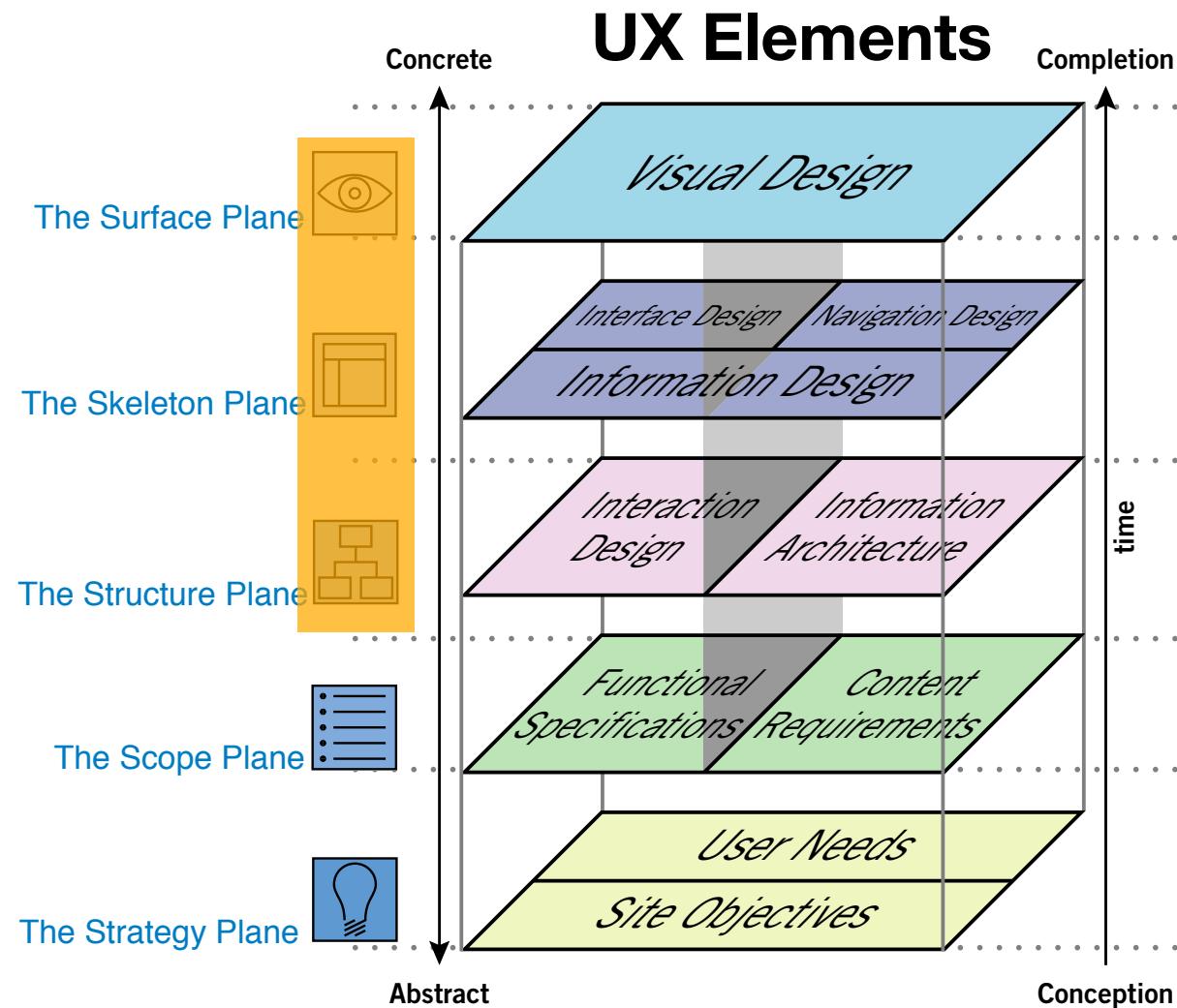
Database can be defined as a collection of tables and table can be defined as collection of records. Each record is an unique entry of an object or event, which is made up of attributes:

- ✓ Most important attribute is a key identifier.
- ✓ There are primary key and secondary key.
- ✓ Information between tables are related by keys.
- ✓ Data about data is called meta-data (e.g. Thesaurus, glossary, controlled vocabulary which can cross-referenced the database)



Source:Flickr

Which levels do you find the dashboard application be most relevant?



Source: Elements of User Experience
by Jesse James Garrett

KEY PERFORMANCE INDEX

A Good KPI Must:

- Be a calculated number; RAPR
- Be comparable over time
- Track Events which *Cause* performance, not just the *Effect*
- Be related to business goals and objectives

7. Key Performance Indicators

- a. Set goals and quantify outcome for meeting the goals**
- b. Outcome should be actionable behaviour that can be observed by humans or machines**
- c. Track causes not only effects to understand the “why” as well as the “how”**
- d. Determine measurement period**
- e. Determine unit of measurement**
- f. Derive metrics and KPI from units of measurement**

THE DASHBOARD DESIGN PRINCIPLE: TO DELIGHT AND TO INFORM

1. General dashboard design principles

- a. Determine the user (who--target audience) and his/her needs (why---purpose) in using the product/service (what medium and content)**
- b. Make sure you have the right metrics (i.e. KPI) including its data preparation before you begin designing the dashboard (basic units of measure vs. ratios/formula)**
- c. Choose the right chart type and encoding principles**
- d. Provide context suitable for the medium (e.g. desktop vs. mobile)**
- e. Makes every pixel counts. Less is more.**

2. **Dashboard type** in relation to the level of data/information management (strategic, tactic, and operational)
 - a. **Operational** --- how often (hourly, daily, weekly, monthly) to see current figures and trends (e.g. page views, total sessions, user counts, channels, countries)
 - b. **Tactical** --- exploratory with interactive and drill-down capabilities to see the details (e.g. users flow, events flow, behavior flow, goal flow)
 - c. **Strategic** --- KPI, especially conversion and financial data such revenue, costs, and profit (e.g. conversion rate, revenue and cost per conversion)

4. Make Data Relevant to the User

- a. **Provide context** (e.g. medium and background) to understand the pre-condition of the data source
- b. **Profile user** (e.g. demographics data)

5. Simplify the Dashboard

- a. Group and show the data with the purpose to make it easy for the user to take action with the knowledge from the data
- b. Simplify but not distort relationship (remove unnecessary noise in the data that may cause confusion)
- c. Use of interactivity to drill down to details instead of showing too much information up front

6. Frequency of Update

- a. Real-time vs. Occasional
- b. Hourly, Daily, Weekly, Monthly

Data-Ink Ratio

Design Principles

5. Consider your medium.

Real estate is even more precious. Hide secondary data.



<https://www.youtube.com/watch?v=RtKDSfWFQIA>

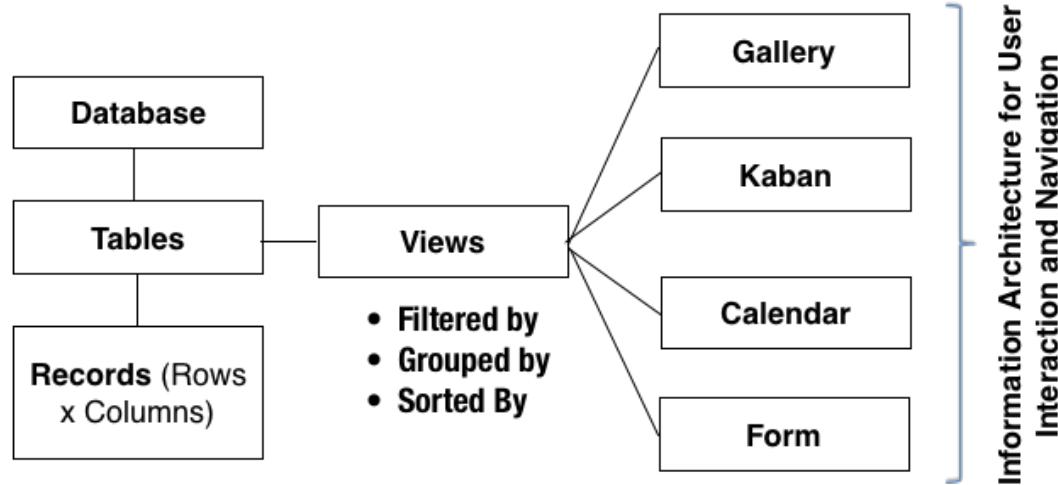
Dashboard Rollup in Airtable

- 1. Sort** single or multiple fields.
- 2. Group** entries by a single field or multiple fields to create data segments.
- 3. Filter** entries by single or multiple fields as searching conditions.

Use sort, group, and filter to search for information in a table.

- 1. Grid
- 2. Kanban
- 3. Calendar
- 4. Gallery
- 5. Form

**Use views to present
and capture data in a
variety of way to suit
different needs.**



Rollup Table and Charting

Facet / Filter

Undo / Redo 24

Using facets and filters 

Use facets and filters to select subsets of your data to act on. Choose facet and filter methods from the menus at the top of each data column.

Not sure how to get started?

Watch these screencasts

25 rows

Extensions:

Show as: **rows** records

Show: 5 < 10 < 25 < 50 rows 1 - 10 next > last »

		All	company	Product	number	geocode2	gender
1.	phillips	radio	5	Groningsingel 147, arnhem, the netherlands	m		
2.	phillips	radio	43	Groningsingel 148, arnhem, the netherlands	m		
3.	phillips	computer	3	Groningsingel 149, arnhem, the netherlands	m		
4.	phillips	computer	34	Groningsingel 150, arnhem, the netherlands	m		
5.	phillips	computer	12	Groningsingel 151, arnhem, the netherlands	m		
6.	phillips	radio	23	Groningsingel 152. arnhem.	m		



Facet / Filter

Undo / Redo 24

25 rows

Show as: rows records

All comparison

1. phillips

2. phillips

3. phillips

4. phillips

5. phillips

6. phillips

Using facets and filters



Use facets and filters to select subsets of your data to act on. Choose facet and filter methods from the menus at the top of each data column.

Not sure how to get started?

[Watch these screencasts](#)

Export project

Tab-separated value

Comma-separated value

HTML table

Excel (.xls)

Excel 2007+ (.xlsx)

ODF spreadsheet

Triple loader

MQLWrite

Custom tabular exporter...

Templating...

ensions:

» last »

gender

m

m

m

m

m

m

m

			computer	radio	23	Groningsingel	m
						151, arnhem, the netherlands	
						152. arnhem.	

+

Sheet 1



Table data was imported.

Adjust Settings

export_to_airtable

company	Product	number	geocode2	gender	initial	name
phillips	radio	5	Groningensingel 147, arnhem, the netherlands	m	p	Jansen
phillips	radio	43	Groningensingel 148, arnhem, the netherlands	m	p	Hansen
phillips	computer	3	Groningensingel 149, arnhem, the netherlands	m	j	Gansen
phillips	computer	34	Groningensingel 150, arnhem, the netherlands	m	p	Mansen
phillips	computer	12	Groningensingel 151, arnhem, the netherlands	m	p	Fransen
phillips	radio	23	Groningensingel 152, arnhem, the netherlands	m	p	Franssen
akzo	tv	43	Leeuwardenweg 178, arnhem, the netherlands	m	p	Bansen
akzo	tv	12	Leeuwardenweg 179, arnhem, the netherlands	m	p	Vansen
akzo	computer	5	Leeuwardenweg 180, arnhem, the netherlands	m	p	Bransen
akzo	radio	34	Leeuwardenweg 181, arnhem, the netherlands	m	p	Janssen
akzo	table	5	Leeuwardenweg 182, arnhem, the netherlands	f	l	Rokken
akzo	table	9	Leeuwardenweg 183, arnhem, the netherlands	f	l	Lokken
akzo	computer	8	Leeuwardenweg 184, arnhem, the netherlands	f	l	Mokken
phillips	radio	56	Delfzijlstraat 54, arnhem, the netherlands	f	l	Mokken
phillips	tv	67	Delfzijlstraat 55, arnhem, the netherlands	f	l	Mokken
phillips	tv	21	Delfzijlstraat 56, arnhem, the netherlands	f	l	Mokken
Van Houten	computer	45	Delfzijlstraat 57, arnhem, the netherlands	f	l	Sokken
Van Houten	tv	56	Delfzijlstraat 58, arnhem, the netherlands	f	l	Wokken
Van Houten	tv	65	Delfzijlstraat 59, arnhem, the netherlands	f	l	Kokken
Van Houten	computer	21	Delfzijlstraat 60, arnhem, the netherlands	f	l	Bokken

**Use Rollup Field for Generating
Aggregated Data Required for the Charts
Used in the Dashboard**

Rollup Field

A rollup field is like a supercharged lookup field which can perform aggregated functions on the looked up values.

Imported Base

HELP ? 🔔 3 🚙

Imported table +

SHARE ⌂ BLOCKS

	company	Product	number	geocode2	gender	initial	name
1	phillips	radio	5	Groningensingel 147, arn...	m	p	Jansen
2	phillips	radio	43	Groningensingel 148, arn...	m	p	Hansen
3	phillips	computer	3	Groningensingel 149, arn...	m	j	Gansen
4	phillips	computer	34	Groningensingel 150, arn...	m	p	Mansen
5	phillips	computer	12	Groningensingel 151, arnh...	m	p	Fransen
6	phillips	radio	23	Groningensingel 152, arn...	m	p	Franssen
7	akzo	tv	43	Leeuwardenweg 178, arn...	m	p	Bansen
8	akzo	tv	12	Leeuwardenweg 179, arn...	m	p	Vansen
9	akzo	computer	5	Leeuwardenweg 180, arn...	m	p	Bransen
10	akzo	radio	34	Leeuwardenweg 181, arnh...	m	p	Janssen
11	akzo	table	5	Leeuwardenweg 182, arn...	f	l	Rokken
12	akzo	table	9	Leeuwardenweg 183, arn...	f	l	Lokken
13	akzo	computer	8	Leeuwardenweg 184, arn...	f	l	Mokken
14	phillips	radio	56	Delfzijlstraat 54, arnhem, ...	f	l	Mokken
15	phillips	tv	67	Delfzijlstraat 55, arnhem...	f	l	Mokken

25 records

Imported Base

HELP ? 3 🔍

SHARE ⌂ BLOCKS

	A company	A Product	product type	A number	A geocode2	A gender	A initial
1	phillips	radio	product type		Groningensingel 147, arn...	m	p
2	phillips	radio			Groningensingel 148, arn...	m	p
3	phillips	computer			Groningensingel 149, arn...	m	j
4	phillips	computer			Groningensingel 150, arn...	m	p
5	phillips	computer			Groningensingel 151, arnh...	m	p
6	phillips	radio			Groningensingel 152, arn...	m	p
7	akzo	tv			Leeuwardenweg 178, arn...	m	p
8	akzo	tv			Leeuwardenweg 179, arn...	m	p
9	akzo	computer	computer		Leeuwardenweg 180, arn...	m	p
10	akzo	radio	radio	34	Leeuwardenweg 181, arnh...	m	p
11	akzo	tablet	tablet	5	Leeuwardenweg 182, arn...	f	l
12	akzo	tablet	tablet	9	Leeuwardenweg 183, arn...	f	l
13	akzo	computer	computer	8	Leeuwardenweg 184, arn...	f	l
14	phillips	radio	radio	56	Delfzijlstraat 54, arnhem, ...	f	l
15	phillips	tv	tv	67	Delfzijlstraat 55, arnhem	f	l

26 records

Imported Base ▾

HELP ? 🔔 3 🚙

SHARE BLOCKS

	A company	A Product	product type	A number	A geocode2	A gender	A initial
1	phillips	radio	radio	5	Groningsingel 147, arn...	m	p
2	phillips	radio	radio	43	Groningsingel 148, arn...	m	p
3	phillips	computer	computer	3	Groningsingel 149, arn...	m	j
4	phillips	computer	computer	34	Groningsingel 150, arn...	m	p
5	phillips	computer	computer	12	Groningsingel 151, arnh...	m	p
6	phillips	radio	radio	23	Groningsingel 152, arn...	m	p
7	akzo	tv	tv	43	Leeuwardenweg 178, arn...	m	p
8	akzo	tv	tv	12	Leeuwardenweg 179, arn...	m	p
9	akzo	computer	computer	5	Leeuwardenweg 180, arn...	m	p
10	akzo	radio	radio	34	Leeuwardenweg 181, arnh...	m	p
11	akzo	tablet	tablet	5	Leeuwardenweg 182, arn...	f	l
12	akzo	tablet	tablet	9	Leeuwardenweg 183, arn...	f	l
13	akzo	computer	computer	8	Leeuwardenweg 184, arn...	f	l
14	phillips	radio	radio	56	Delfzijlstraat 54, arnhem, ...	f	l
15	phillips	tv	tv	67	Delfzijlstraat 55, arnhem, ...	f	l

Imported Base

HELP ?  

product details product types +

SHARE  

Grid view  2 hidden fields Filter Group Sort Color ...

	Name	product details				
1	radio	Van Houten	phillips	akzo	phillips	phillips
2	tv	Van Houten	Van Houten	phillips	phillips	akzo
3	tablet	unilever	unilever	unilever	akzo	akzo
4	computer	unilever	Van Houten	Van Houten	akzo	akzo

total

Rollup

A rollup allows you to summarize data from records that are linked to this table. For more information on rollups and a complete function reference, see the Rollup Field Reference.

Rollup Formatting

product details

Enter an aggregation function which rolls up the values in each linked record

Cancel Save

4 records

Sum 25



Imported Base ▾

HELP ? 🔔 3 🔍

SHARE 🔍 🔍 BLOCKS

Grid view 📈 2 hidden fields Filter Group Sort Color ...

	A Name	product details						
1	radio	Van Houten	phillips	akzo	phillips	phillips	phillips	
2	tv	Van Houten	Van Houten	phillips	phillips	akzo	akzo	
3	tablet	unilever	unilever	unilever	akzo	akzo		
4	computer	unilever	Van Houten	Van Houten	akzo	akzo	phillips	

total

Rollup

A rollup allows you to summarize data from records that are linked to this table. For more information on rollups and a complete function reference, see the [Rollup Field Reference](#).

Rollup Formatting

A Product

Enter an aggregation function which rolls up the values in each linked record

COUNTA(values)

Cancel Save

Sum 25

Imported Base

HELP ? 3 🔍 🔍 BLOCKS

	Name	product details	total
1	radio	Van Houten phillips akzo phillips phillips phillips	6
2	tv	Van Houten Van Houten phillips phillips akzo akzo	6
3	tablet	unilever unilever unilever akzo akzo	5
4	computer	unilever Van Houten Van Houten akzo akzo phillips phillips phillips	8

4 records Sum 25

The following data comes from this [Google Refine tutorial](#) ([Thanks to d3-Medial!](#)), which provides a short excercise for beginners to master Refine for data cleaning quickly. The cleaned data was later imported into a Drupal database for front-end presentation that you now see.

Show entriesSearch:

Customer	Product code	Number	Address	City	Country	Contact
akzo	TV	12	Leeuwardenweg 179	arnhem	the netherlands	m p. vansen
akzo	Computer	5	Leeuwardenweg 180	arnhem	the netherlands	m p. bransen
akzo	radio	34	Leeuwardenweg 181	arnhem	the netherlands	m p. janssen
akzo	tablet	5	Leeuwardenweg 182	arnhem	the netherlands	mevr l. rokken
akzo	tablet	9	Leeuwardenweg 183	arnhem	the netherlands	mevr l. lokken

Showing 1 to 5 of 25 entries

Previous 1 2 3 4 5 Next

http://suenlabs.com/dataviz_demo/table.html

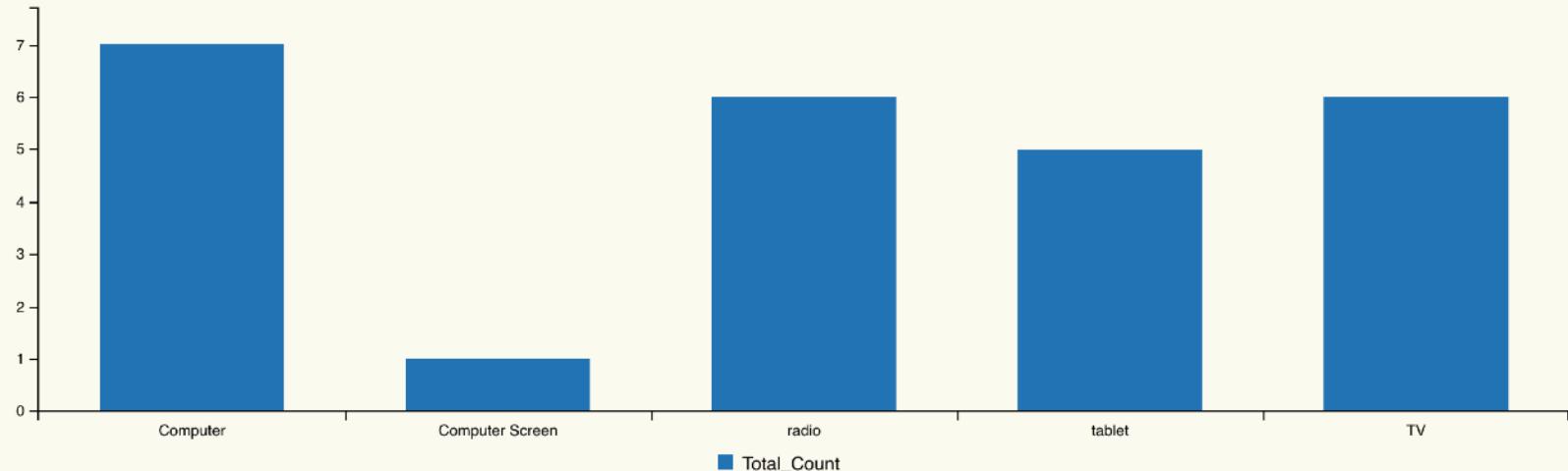
Please select

Bar Chart

Line Chart

Click here to see the details in a table.

Aggregated JSON data displayed in current chart



http://suenlabs.com/dataviz_demo/chart.html

Problem Set #5

- Rework your previous Airtable assignment with a specific audience in mind. Ask: a) Who will be interested in seeing this? b) What do they want to see? c) Why do they want to see it?
- Also ask: Do I have enough content to keep them interested? If not, where can I find additional data and how? This question may lead to additional research works for identifying data sources such as open data and scraping. You may have to bring the imported open data and scrapped data into Airtable for additional processing (with formula and rollup)
- Develop **rollup** metrics and put them into the appropriate views for display
- Embed your views into a web page with supporting navigation aids (e.g. menu) and UI patterns to make the end results more engaging.

The End