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**Day 1**  **July 31**

**Web**

*Credits: [Lucien Huang](#)*

**Components of Internet**

App: html/css/js

Server: python/js/php

Database: MySQL/MongoDB

**How to put a website online**

Domain name

Server

**FTP** (File Transfer Protocol): a standard network protocol used for the transfer of computer files between a client and server on a computer network

#### **What happens when I go to a website**

1. Browser sends out request of a specific page
2. Use **HTTP (Hypertext Transfer Protocol)** protocol to request the page
3. The server responds by sending back the metadata, followed by the page source
4. Other protocols include the **HTTPS (Hypertext Transfer Protocol Over Secure Socket Layer)**

**www.giphy.com/artists**

Protocol	Domain	Path
----------	--------	------

5. Server fetches the page via **URL (Uniform Resource Locator)**

6. Which is located with a unique IP address

7. \*for Mac you can find out your IP address by typing

**ifconfig**

#### **Web Application**

Front-end languages: HTML/CSS/JS

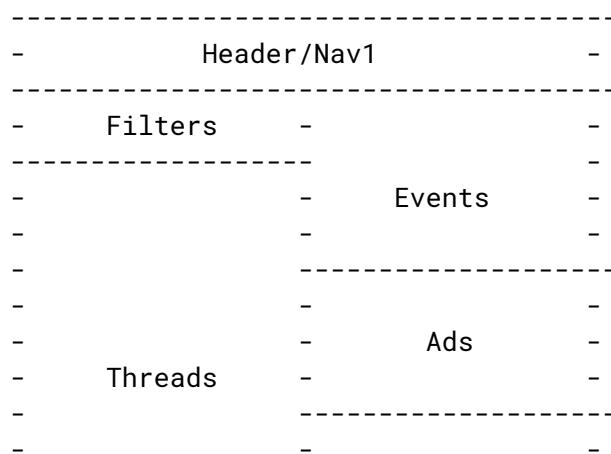
HTML: HyperText Markup Language (HTML) is the building-blocks of web pages

CSS: Cascading Style Sheets (CSS) dictate the website's look and feel

JS: JavaScript (JS) dictates how the website behaves based on events (mainly by the user)

#### **Wireframing of a website**

<https://stackoverflow.com>



-	-	Featured	-
-	-	-	-
-----			Footer/Nav2
-----			

\*wireframing softwares: [Balsamiq.com](http://Balsamiq.com)

### Homework

1. Draw wireframing for your portfolio site
2. Email pdf by tonight 12AM
3. Find two or three websites to share, post them to the blog
4. Codecademy // Introduction to HTML lessons 1-3  
[codecademy.com/en/tracks/web](http://codecademy.com/en/tracks/web)

### Design

Credits: [Tuba Ozkan](#)

#### What is creativity?

#### Introduce yourself with 3 words?

### Course Overview

- Mastery Project (Day 1-3)
- User-Centered Design Project & Prototyping (Day 4-6)
- Project Catastrophe (Day 6-10)
- Final Project (Week 3)

### Required Readings and Videos

- [Italo Calvino, "Invisible Cities"](#)
- [Don Norman, "The Design of Everyday Things"](#)
- [What do prototypes prototype?](#)
- [Ellen Isaacs, "Ethnography" at TEDx \(Video\)](#)
- [Rick & Dick](#)
- [J. Paul Neeley, Speculative Design and The Future of UI \(Video\)](#)
- [Hillary Collins, "Creative Research"](#)

### Additional resources

- [Google for entrepreneurs: Rapid Prototyping](#)
- [What is design ethnography?](#)
- [Anthony Dunne, "What If... Crafting Design Speculations" \(Video\)](#)
- [WingKee, "Speculative Design Fiction" \(Video\)](#)
- [New Media Art](#)
- [Bernard Tschumi, "Manhattan Transcripts"](#)

## **Mastery Project**

### **What is Mapping?**

The act or process of making a map, a diagram used to visually organize information

Types of mapping

Domain map, mind map...

### **Mind Map**

Begins with only one work or idea

Radial/tree structure

Quick tool to transfer idea into a visual context

An easy way to brainstorm

### **Concept Map**

Similar to mind mapping

Connections of multiple words or ideas

Connections between concepts in more diverse structures

### **Domain Map**

It is a scope or an expression for you to plan and visually map out a project

It's the domains that your ideas fall underneath

Domain is an academic expression or discipline related to your interests or projects

## **Mind Mapping Process**

1. Generate a focal point then develop related components

## **Domain Map**

A tool that allows you to structure your ideas into specific categories that your ideas fall underneath

In design process in particular, it is an academic expression or discipline related to your interests or projects

Help define/structure your ideas

## **Questions to start with domain mapping**

1. What larger and broader topics does my idea fit in
2. What topic does it relate/overlap onto
3. What discipline can I categorize
4. Who is my audience
5. What practices branch out in my ideas

## **Tools for mapping**

1. Pen and paper
2. softwares

## **Homework**

1. [Don Norman, "The Design of Everyday Things"](#) Chapter 1 pp.1-34, moderated by Jason, Nana, Ting & Kevin
2. **Mastery Project:** create a mind map and a short project based on the Invisible Cities in relation to your design skills

3. Present your mind map on Tue and submit your project on Wed

## Code

Credits: [Andrew Cotter](#)

### What is coding?

Stores information as 1s and 0s  
Communicate with computers

## Languages and Platforms

Swift: iOS  
JS: web, p5.js  
C++: openFrameworks, Unity  
Java: Processing

Great artists use code  
Casey Reas  
Raven Kwok

Physical computing: Arduino

## Color Code

Rgb  
Rgba

## Variables

Types of variables: Int, Float, Bool, String

Scope of variables

Syntax sugar: width and height are predefined variables as the width/height of the canvas

## **Processing**

### [Processing References!](#)

Pseudo Code first

## **Coding Resources**

[The Coding Train](#)

[Codecademy](#)

[Learning processing](#)

[The Nature of Code](#)

[Stackoverflow](#)

[Khan Academy](#)

[Code Combat](#)

## **My Processing Development Setup**

\*the processing original IDE sucks, so I choose Atom to code and compile to processing

1. Download [Atom Text Editor](#)
2. Search and install Packages: processing (run processing in atom), processing-language (highlights processing syntax), and processing-autocomplete (autocomplete and suggests the semantics)
3. Hit `ctrl+alt+b` to compile
4. Enjoy

## **Example**

[https://github.com/kevinfan23/parsons\\_bootcamp/tree/master/code/day1/lecture\\_1](https://github.com/kevinfan23/parsons_bootcamp/tree/master/code/day1/lecture_1)

## **Homework**

1. Watch video
2. Replicate [this image](#) in processing,
3. sample answers:  
[https://github.com/kevinfan23/parsons\\_bootcamp/tree/master/code/day1/homework\\_1](https://github.com/kevinfan23/parsons_bootcamp/tree/master/code/day1/homework_1)

## **Hw**

### **Norman Questions**

1. What examples of bad designs you have seen in your life?
2. "Designs are at fault, not the operators", what are your takes on it?

### **Reading synopsis**

*Don Norman: The design of everyday things*

1. Two of the most important characteristics of good design:  
**discoverability** and **understanding**
2. All artificial things are designed.
3. The field of design is relatively new

4. Products should fulfill human needs while being understandable and usable. In the best of cases, the products should also be delightful and enjoyable
5. Design focuses

**Industrial design:** The professional service of creating and developing concepts and specifications that optimize the function, value, and appearance of products and systems for the mutual benefit of both user and manufacturer (from the *Industrial Design Society of America's* website).

**Interaction design:** The focus is upon how people interact with technology. The goal is to enhance people's understanding of what can be done, what is happening, and what has just occurred. Interaction design draws upon principles of psychology, design, art, and emotion to ensure a positive, enjoyable experience.

**Experience design:** The practice of designing products, processes, services, events, and environments with a focus placed on the quality and enjoyment of the total experience.

6. It is the duty of machines and those who design them to understand people.
7. "We are people ourselves," engineers think
8. We have to accept human behavior the way it is, not the way we would wish it to be
9. Design was at fault, not the operators
10. Even experts make errors. So we must design our machines on the assumption that people will make errors
11. But even though much has improved, the rapid rate of technology change outpaces the advances in design
12. **HCD (Human Centered Design):** an approach that puts human needs, capabilities, and behavior first, then designs to accommodate those needs, capabilities, and ways of behaving

TABLE 1.1. The Role of HCD and Design Specializations	
Experience design	These are areas of focus
Industrial design	
Interaction design	
Human-centered design	The process that ensures that the designs match the needs and capabilities of the people for whom they are intended

13. Designers need to focus their attention on the cases where things go wrong, not just on when things work as planned...this is where the most satisfaction can arise
14. This understanding comes about primarily through observation, for people themselves are often unaware of their true needs, even unaware of the difficulties they are encountering
15. Experience is critical, for it determines how fondly people remember their interactions.

16. Discoverability results from appropriate application of five fundamental psychological concepts: **affordances, signifiers, constraints, mappings, feedback + conceptual model of the system**

### Affordance

The presence of an affordance is jointly determined by the qualities of the object and the abilities of the agent that is interacting

Affordance is not a property...is a relationship

Visible affordances provide strong clues to the operations of things

### Signifier

If an affordance or anti-affordance cannot be perceived, some means of signaling its presence is required

Gibsonian psychology, an ecological approach to perception...that people simply picked them up through "direct perception"

Signifiers can be deliberate and intentional, such as the sign push on a door, but they may also be accidental and unintentional

### Mapping

Mapping is a technical term, borrowed from mathematics, meaning the relationship between the elements of two sets of things

Natural mapping, by which I mean taking advantage of spatial analogies, leads to immediate understanding

Controls should be close to the item being controlled

Note that there are many mappings that feel "natural" but in fact are specific to a particular culture

### Conceptual Model

A conceptual model is an explanation, usually highly simplified, of how something works

17. **System Image:** People create mental models of themselves, others, the environment, and the things with which they interact

18. Good conceptual models are the key to understandable, enjoyable products: good communication is the key to good conceptual models

19. **The Paradox of technology**

20. Quite often each discipline believes its distinct contribution to be most important...The hard part is to convince people to understand the viewpoints of the others, to abandon their disciplinary viewpoint and to think of the design from the viewpoints of the person who buys the product and those who use it, often different people

## Day 2 ➡ Aug 1

### Web

#### Markup Language

A set of markup tags, which describe the document content, ex. **HTML** (HyperText Markup Language)

<body></body> <head></head> <img> <video>...

#### Tags

1. <html><head><body><title>
2. Inline tags: <span><img><a><video>
3. Block tags: <nav><p><h1...h6><table><li><ol><ul>
4. \*<script><link> can be included in <head>
5. \*non-breaking space  
    &nbsp;
6. Line break  
    <br>
7. Thematic break  
    <hr>
8. Use id attribute for relative links  
    <a href="#id">

#### DOM (Document Object Model)

The hierarchy structure of the html is called DOM

#### HTML Tag Anatomy

<tagname attribute="value">content</tagname>  
\*for more attributes, check [here](#).

Use inspect in your Browser (Safari, Chrome) to see the web source

#### CSS (Cascading Stylesheet)

Used to style the DOM  
Linked in the header

#### Homework

1. Make a hyperlinked website that introduces yourself

## Design

### Don Norman: The design of everyday things

#### Affordance

Actionable properties

Exist naturally, do not have to be visible, known or desirable

Independent of human's perception and do not change if our needs and the goals change - Gibson

Perceived properties may change over time

result s from the mental interpretation of things, based on past knowledge or experiences - Norman

## Research

#### Why

1. Helps to find subject matter
2. Gives insight into topic and domain
3. Help you make informed design decisions

**Primary research:** Interviews, surveys, questionnaires

**Secondary research:** secondhand info, offers different perspectives, analysis, and conclusions

#### Quantitative data

Length, percentage, age, average, temp

#### Making is researching + Iterations

1. Create personas
2. Prototyping
3. User testing

## Starting Your Research

1. Ask the right question
2. Topic of interest
3. Identify a design problem
4. Google, library, JSTOR, Proquest, etc.
5. NYU & Cooper Union libraries

Inspirational websites

[Creative Applications](#)

[Hover States](#)

[NYC Media Lab](#)

[Designer Inspiration](#)

## Background Information

1. Info about domain
2. Info about topic
3. Target audience
4. Secondary data

5. Precedent (conceptual, technical, aesthetic precedents)
6. **OPVL (Origin,, Purpose, Value and Limitation)**

#### **Documentation**

1. Shows the iterative process
2. Help others to understand your process
3. Document everything
4. Scopes: maps, research, sketches/storyboards, brainstorm notes, prototype iterations, code screenshots, user testing data (actual event, outcome), **final outcome**

#### **Homework**

1. Prepare to present Mastery Project
2. Assign: Post one project found on the listed websites, or introduce a new reference website

#### **Code**

##### **Binary and Boolean**

0s and 1s  
Only true or false

##### **Conditionals**

If else statement  
Conditional operators: &&, ||

#### **Example**

[https://github.com/kevinfan23/parsons\\_bootcamp/blob/master/code/day2/lecture\\_2/lecture\\_2.pde](https://github.com/kevinfan23/parsons_bootcamp/blob/master/code/day2/lecture_2/lecture_2.pde)

#### **How to Draw Flowchart Diagram**

<http://creately.com/blog/diagrams/flowchart-guide-flowchart-tutorial/>

#### **Homework**

1. Write out a paper story for a game
2. Requirements
  - A planned storyline
  - User input
  - Minimum number of stages: 3
  - Use canvas to show storyline illustration
  - Use sound as a bonus
  - Presentation

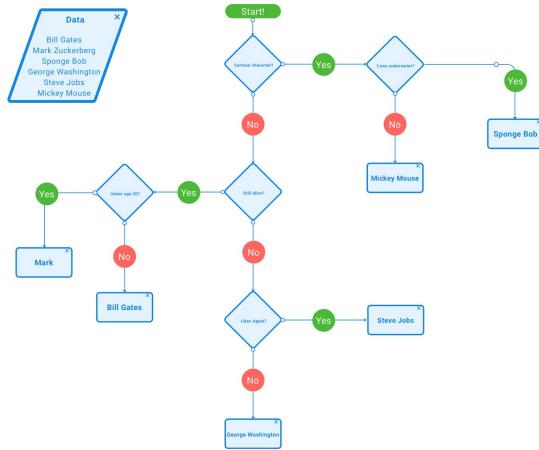
#### **Hw**

##### **Portfolio Site**

[An old version of my portfolio site](#)

**Mastery Project**  
[Project in static mode](#)  
[On Codepen](#)

**Paper story for a game**  
[Flowchart](#)



**Day 3** 👉 Aug 2

**Web**

**Some Useful Online Resources for CSS**

- [Google Fonts](#)
- [Adobe Color CC, color wheel](#)
- [W3 School Org](#)
- [CSS Tricks](#)

**CSS Percentage Value**

[https://www.w3schools.com/cssref/pr\\_dim\\_width.asp](https://www.w3schools.com/cssref/pr_dim_width.asp)

**CSS Box Model**

**Box-sizing:** <https://css-tricks.com/box-sizing/>  
**Universal border-box**

```
*, *:before, *:after {  
    box-sizing: border-box;}
```

**To Center Text Inside the Div**

<https://stackoverflow.com/questions/5703552/css-center-text-horizontally-and-vertically-inside-a-div-block>

**To Center A Div Inside the Div**

<https://css-tricks.com/centering-css-complete-guide/>

### CSS FlexBox

<https://css-tricks.com/snippets/css/a-guide-to-flexbox/>

### CSS Selectors

[https://www.w3schools.com/cssref/css\\_selectors.asp](https://www.w3schools.com/cssref/css_selectors.asp)

### Unix Style File/Directory Path (the one CSS uses)

[https://en.wikipedia.org/wiki/Path\\_\(computing\)](https://en.wikipedia.org/wiki/Path_(computing))

### CSS Positioning

Reference: <https://css-tricks.com/almanac/properties/p/position/>

Z-index: <https://css-tricks.com/almanac/properties/z/z-index/>

### Homework

1. Stylize the website that you built with HTML
2. Post screenshots to blog

### Design

#### Homework

1. Watch Google for Entrepreneur Rapid Prototyping video

### Good Presentation

1. Show + visual, videos?
2. Don't read the slides
3. Know your material and practice (time, record)
4. Know your audience (organize your language and presenting styles)
5. Go to your site before presenting, know your environment
6. Backup your files (Google Drive, dropbox)

### Good Critiques

1. Mix positive feedbacks with negative ones
2. Contextualizing
3. Be specific
4. Offer next steps
5. Offer alternative approaches
6. Listen, respect (not defensive), ask
7. Get critiques from multiple sources (academic background, demographic, groups, previous knowledge, etc)
8. Ask for the feedbacks you want

### Mastery Project Critiques



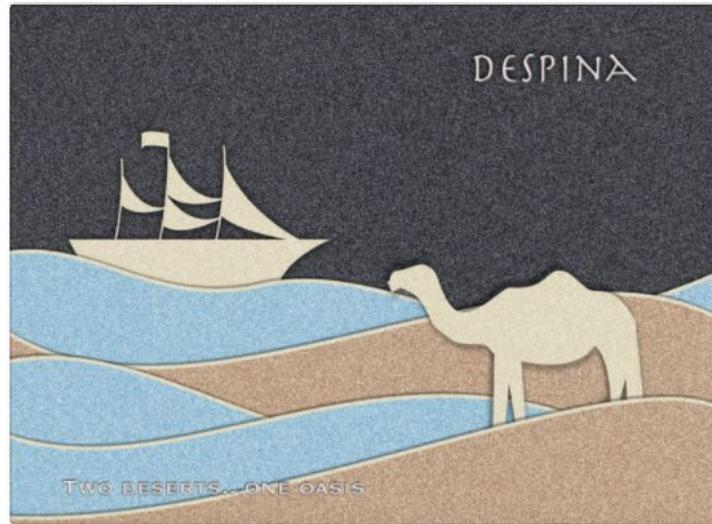
Barsha: Time in still

!! Monk in the crowd  
Indra Chowk St (weather god)



Milan: Globe

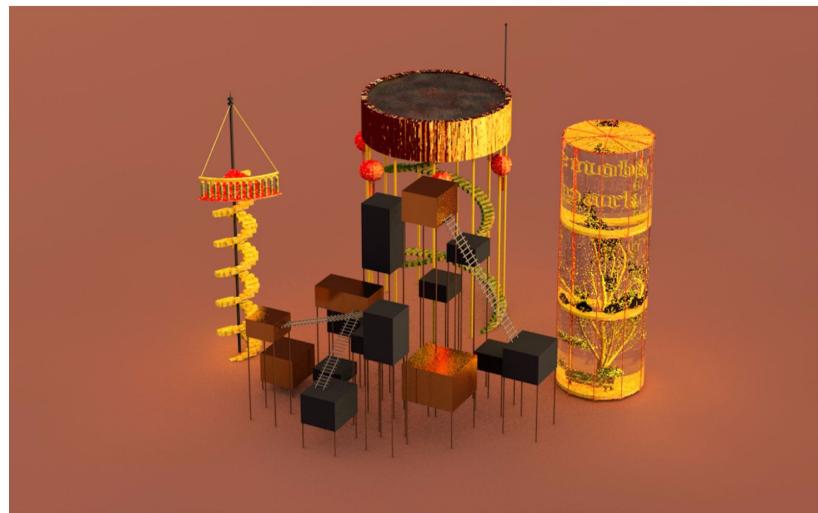
!! Eye  
Infinity  
The city of Phedora  
Different speed, different directions



Srishti: Two desert...one oasis

!! Sand texture

3D shadow added depth to the image



Jason

!! Texture, 3d, miniature

## Code

### Processing Input Interactions

```
keyPressed -> bool  
keypressed() -> function gets called as key pressed  
CODED = The variable keyCode is used to detect special keys such as the arrow  
keys (UP, DOWN, LEFT, and RIGHT) as well as ALT, CTRL, and SHIFT.  
keyReleased() -> function gets called as key released  
mousePressed  
mousePressed()
```

For more key interactions, check [Processing References](#).

## Using Assets

### Images

Supported format: jpeg, gif, png, tga, and  
[PImage](#): the datatype for storing/manipulating images in Processing  
Use function [image\(\)](#) to draw image

### Font

Supported format: jpg, gif, png, tga, and  
[PFont](#): the datatype for storing/manipulating images in Processing  
[loadFont\(\)](#): Loads a .vlw formatted font into a PFont object  
[createFont\(\)](#): Dynamically converts a font to the format used by  
Processing from a **.ttf or .otf** file inside the sketch's "data"  
folder or a font that's installed elsewhere on the computer.

## Example

[https://github.com/kevinfan23/parsons\\_bootcamp/blob/master/code/day3/lecture\\_3/lecture\\_3.pde](https://github.com/kevinfan23/parsons_bootcamp/blob/master/code/day3/lecture_3/lecture_3.pde)

## Homework

1. Finish first two stages of the code video game

## Hw

### Design

[Google for Entrepreneur Rapid Prototyping](#)

1. Prototype early and often
2. Prototyping types: sketch & paper prototyping, digital prototyping, native prototyping
3. Design -> Prototype -> Test -> Validate -> Iterate
4. Communicate your vision: Ideas + Clarity + Stakeholders + Investors + Buy-in

### Sketch & Paper Prototyping

5. Sketch & paper prototyping: paper or postnote
6. Sketch outline of steps, use flow, or interactions => wireframe
7. High fidelity sketches: button, images, and color

8. Paper prototyping: key user interactions, purposeful use of colors, explore elevations and shadows
9. Create gifs with paper prototyping to further explore the user flow

### Digital Prototyping

10. Get the hang and feel of product without engineering expense
11. Purposes: get the feel and an artifact for user testing

### Native Prototyping

12. Be ready to throw it away.
13. Great way to test the development environment
14. Explore your technology + Validate your direction + Communicate your vision

### Code

[https://github.com/kevinfan23/parsons\\_bootcamp/tree/master/code/code\\_videogame](https://github.com/kevinfan23/parsons_bootcamp/tree/master/code/code_videogame)

Day 4  Aug 3

### Web

#### CSS Transition

[Reference](#)

[Easing functions cheat sheet](#) (Not supported in CSS, but can convert to [cubic bezier](#))

#### CSS Transformation

[Reference](#)

### Design

#### Lenses

1. Critical
2. Conceptual
3. Speculative
4. Human-centered
5. Non-human centered design

### Different Design Disciplines

#### Industrial design

function, value, and appearance of products and systems for the mutual benefit of both user and manufacturer

#### Interaction design

The goal is to enhance people's understanding of what can be done, what is happening, and what has just occurred.

## User experience design

Enhancing user satisfaction with a product by improving the usability, accessibility, and pleasure provided in the interaction with the product

## HCD (Human-Centered Design)

An approach that puts human needs, capabilities, and behavior first, then designs to accommodate those needs, capabilities and ways of behaving.

## HCD Process

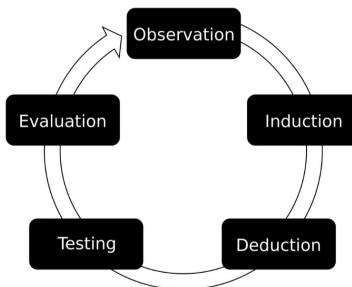
Inspiration -> Ideation -> implementation (by IDEO)

## Where to begin

1. Brainstorming
2. Mind mapping
3. Design question
4. How might We's
5. Challenges & goals
6. Design statements

## Observation Research

1. Survey
2. Interviews
3. AEIOU  
Actions  
Environment  
Interactions  
Objects  
Users



## Persona

**Specify:** help us specify which groups of users most important to target

**Communication needs:** tell story about different types of users and their needs

**Transcend archetypes:** defines a class or type of user and realize

**Derived from behaviors:** based on observations of real people we are targeting as users + supporting quantitative research about them

=> Persona = behaviors + patterns + goals

### **How to Create Personas**

1. Identify user characteristics: activities, attitudes, aptitudes, motivations, skills
2. Map and identify behaviors: look for clusters of people that occurs across multiple behavior ranges or variables
3. Patterns: most critical details, both by observing actions or by analyzing subject responses to goal-oriented interview questions
4. Identify the logical connections between people's behaviors

### **Storyboard**

Visual representation of your scenario and personas

Help people better connect how your product/service will work

Write it all out as steps first in a scenario. Make one scenario for each persona => storyboard

### **Homework**

1. Read "How Do Prototypes Prototype"
2. Send ideas for HCD
3. Create a Human Centered Design Project
  - a. Mind mapping, design questions, HMWs, goals, design statements
  - b. What resources do you want to look at (2 sources)
  - c. Create a persona (or personas) of your main intended users and their goals
  - d. Create a scenario (written or visual), imaging how users will use your design

### **Code**

### **Function**

Reusability

Return-type & value

### **Hw**