

Online Communication



Intelligent Physical Systems

Online Communication – why?

Make your work count!

- Refer back to them when you build new systems
- Public repositories
- Refer back to them when you interview
- (and it's part of your grade!)

Lecture format

- How to make high-impact websites?
- How to target your audience?
- How to convey information concisely?

How important is a website?

(how do you get to the top of the list in the search engine?)



Google's base line algorithm is called ***Page Rank***

- It counts the *number and quality of links* to a page to determine its importance
- (important websites are likely to receive more links from other websites)

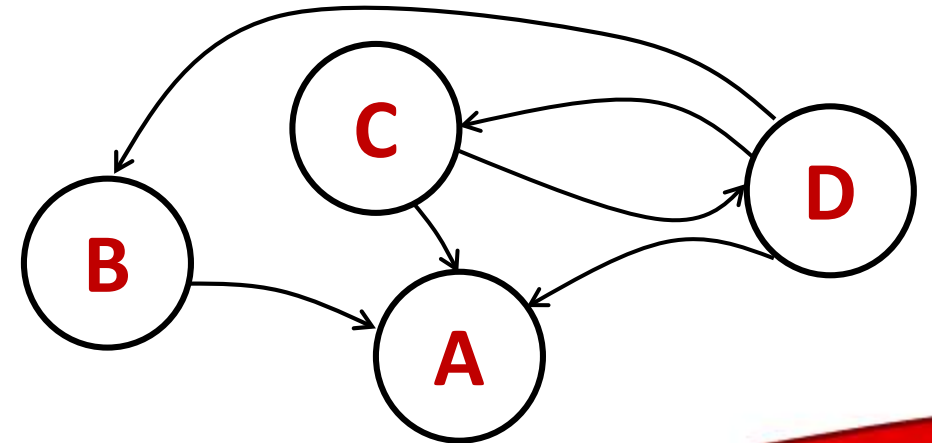
Page Rank

The importance of a site is equal to the probability that the surfer ends up at that site.



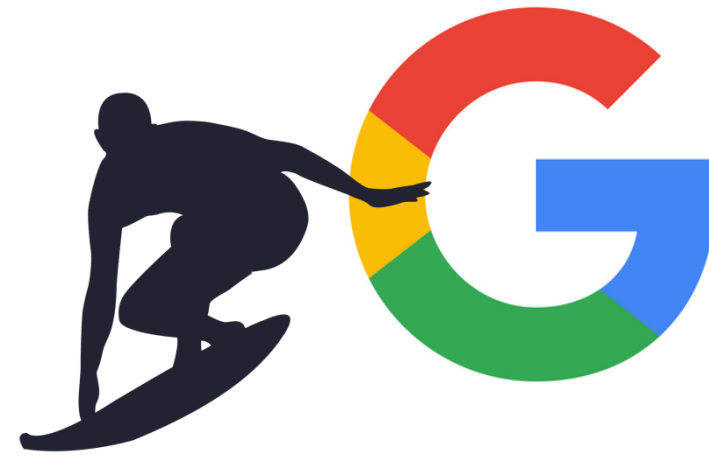
$$PR(A) = \left(\frac{PR(B)}{L(B)} + \frac{PR(C)}{L(C)} + \frac{PR(D)}{L(D)} + \dots \right).$$

- $PR(A) = PR(B) = PR(C) = PR(D) = 0.25$
- $L(A), L(B), L(C), L(D) = ?$
- $PR(A) = ?$
 - A is a sink



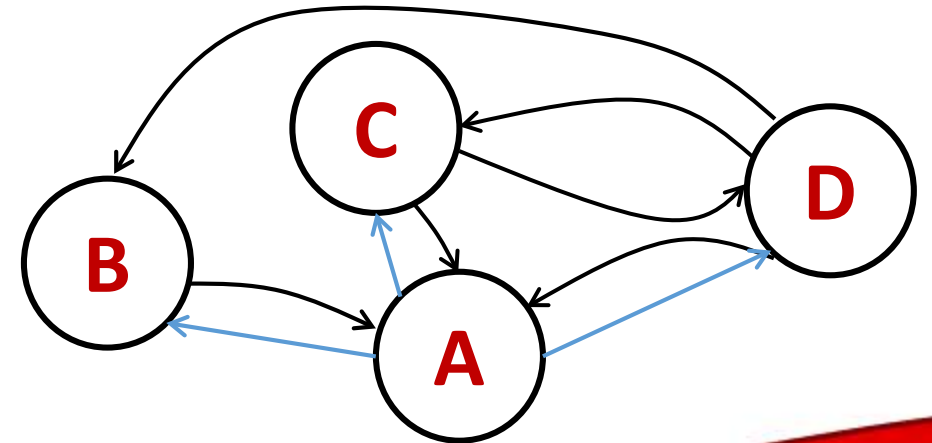
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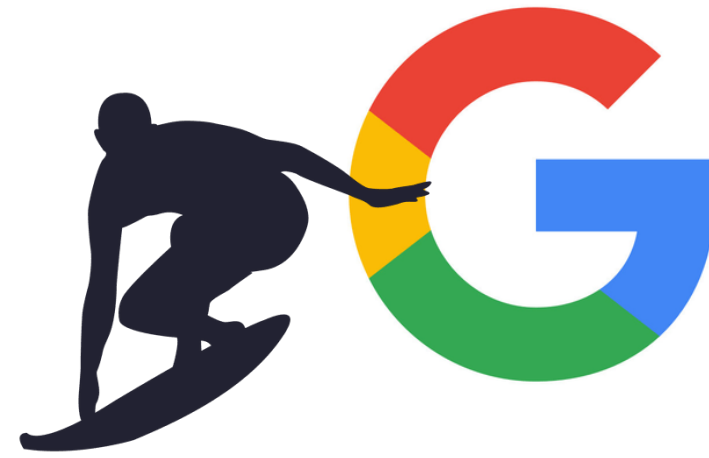
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- etc...



Page Rank

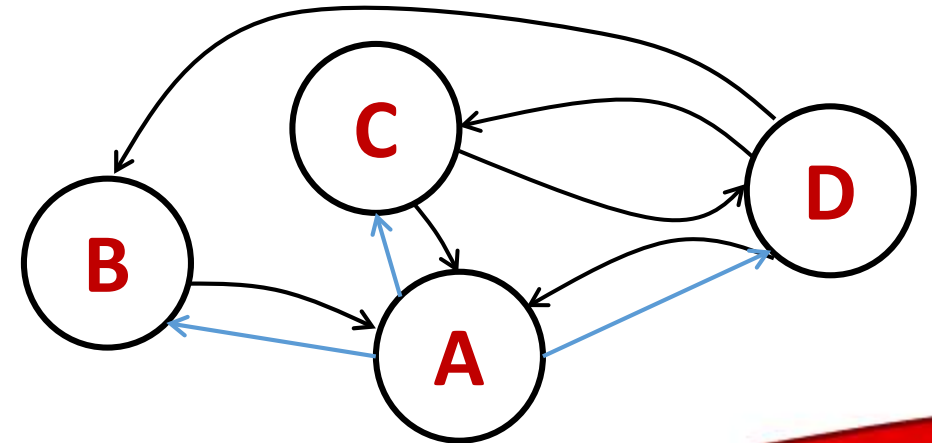
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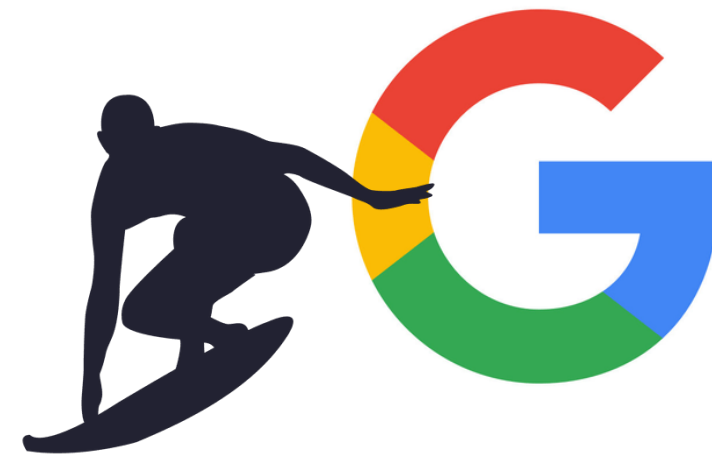
$$PR(A) = \frac{1-d}{N} + d \left(\frac{PR(B)}{L(B)} + \frac{PR(C)}{L(C)} + \frac{PR(D)}{L(D)} + \dots \right).$$

Damping factor

- $PR(A) = PR(B) = PR(C) = PR(D) = 0.25$
- $L(A), L(B), L(C), L(D) = ?$
- $PR(A) = ?$
- $PR(D) = ?$
- etc...

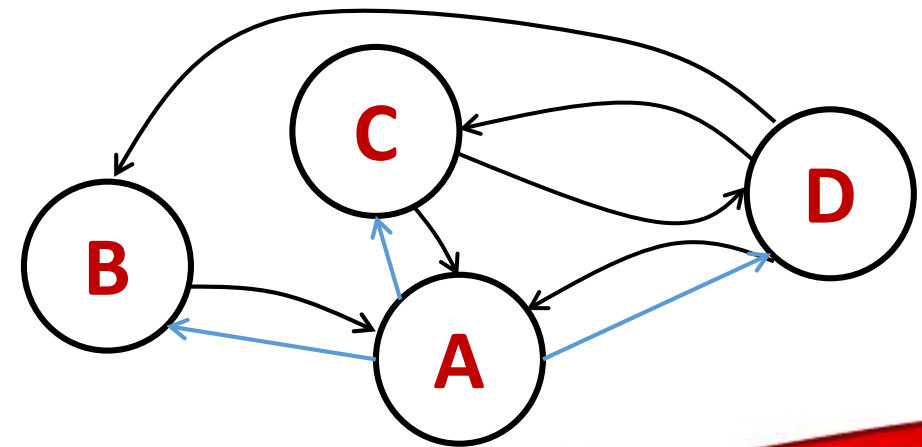


Page Rank



$$PR(p_i) = \frac{1 - d}{N} + d \sum_{p_j \in M(p_i)} \frac{PR(p_j)}{L(p_j)}$$

*plus a whole lot of proprietary magic...



Cultural Differences Online



Hofstede's Cultural Dimensions Theory:

- Power Distance
- Individualism vs. collectivism
- Masculinity vs. Femininity
- Uncertainty Avoidance
- Long-term vs. Short term orientation

Cultural Differences Online

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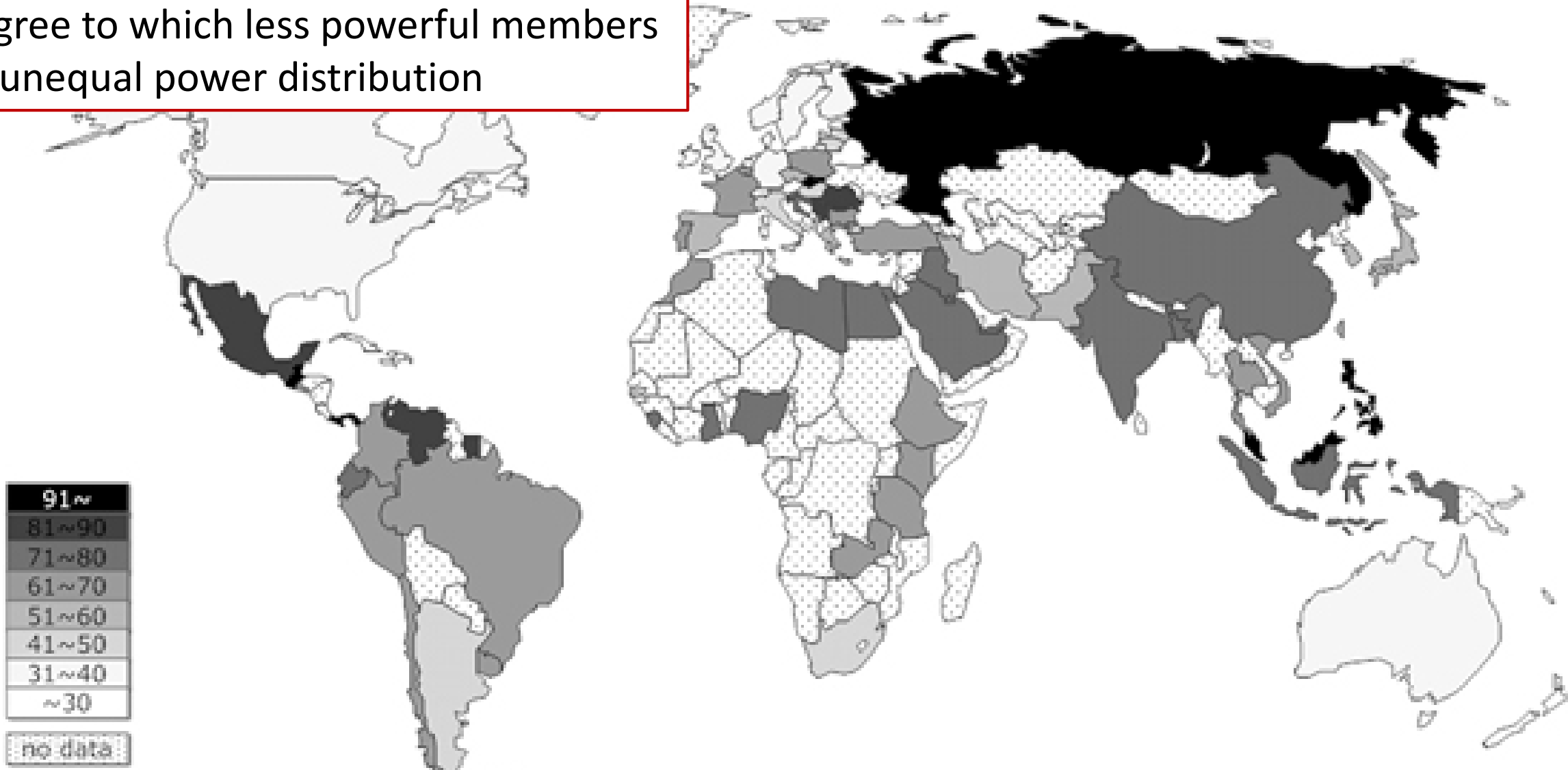


<http://corporate.mcdonalds.com/mcd/country/map.html>

Source: <http://blog.usabilla.com/designing-for-a-cross-cultural-user-experience-part1/>

Cultural Differences Online – Power Distance

The degree to which less powerful members accept unequal power distribution



Cultural Differences Online – Power Distance

Holland

China



- Small power distance

- High power distance

Cultural Differences Online – Power Distance

Holland



- Small power distance
- Minimalistic, professional design
- Objective, detailed information
- Any action appears to be on the users initiative

China



- High power distance
- Packed and commercial
- Colorful, high contrast
- Product focus

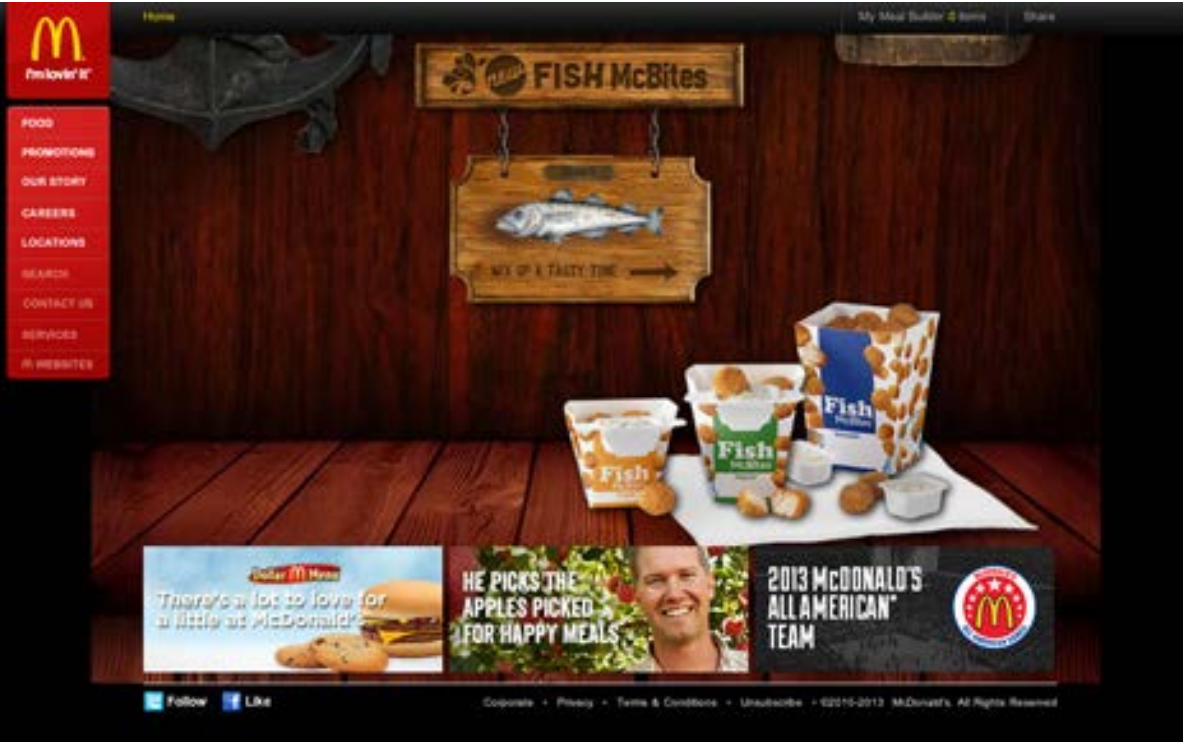
Cultural Differences Online – Individualism vs Collectivism

The degree to which people in a group focus on themselves or the group as a whole.



Cultural Differences Online – Individualism vs Collectivism

USA



- Individualistic culture

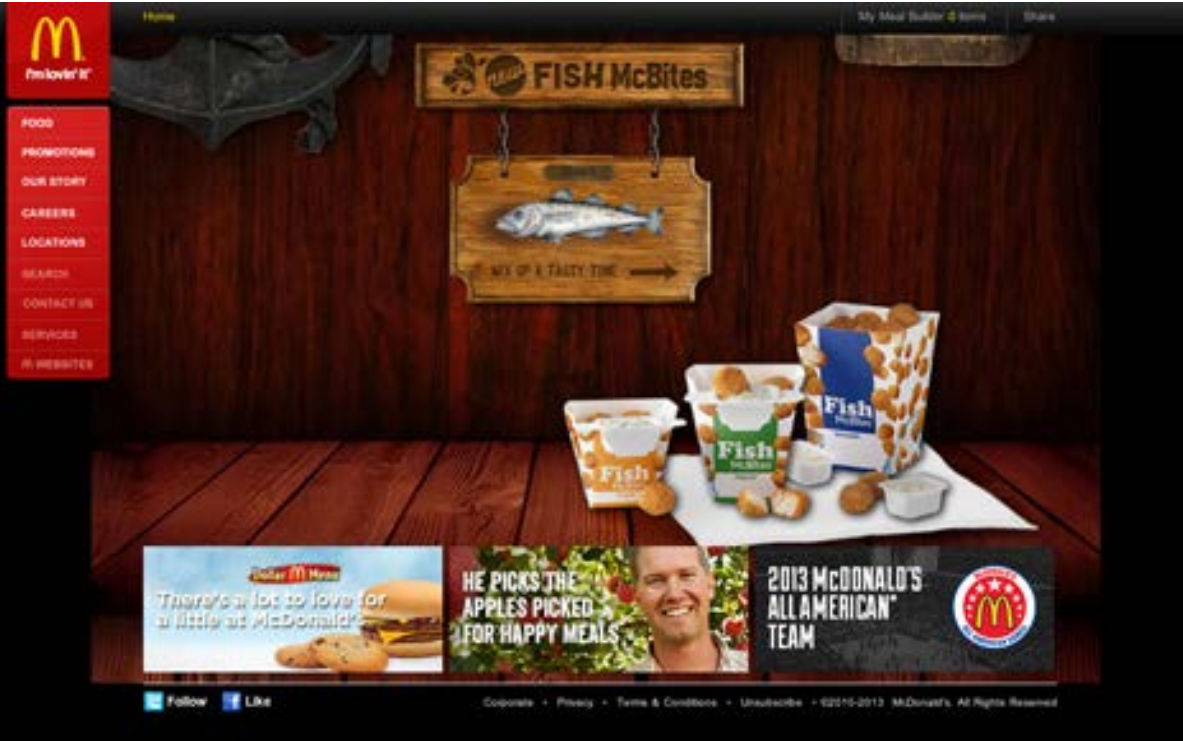
Turkey



- Collectivist culture

Cultural Differences Online – Individualism vs Collectivism

USA



- Individualistic culture
- Simple design
- Focus is on the benefit of the visitor
- Lots of calls for personal action
- Personal connections

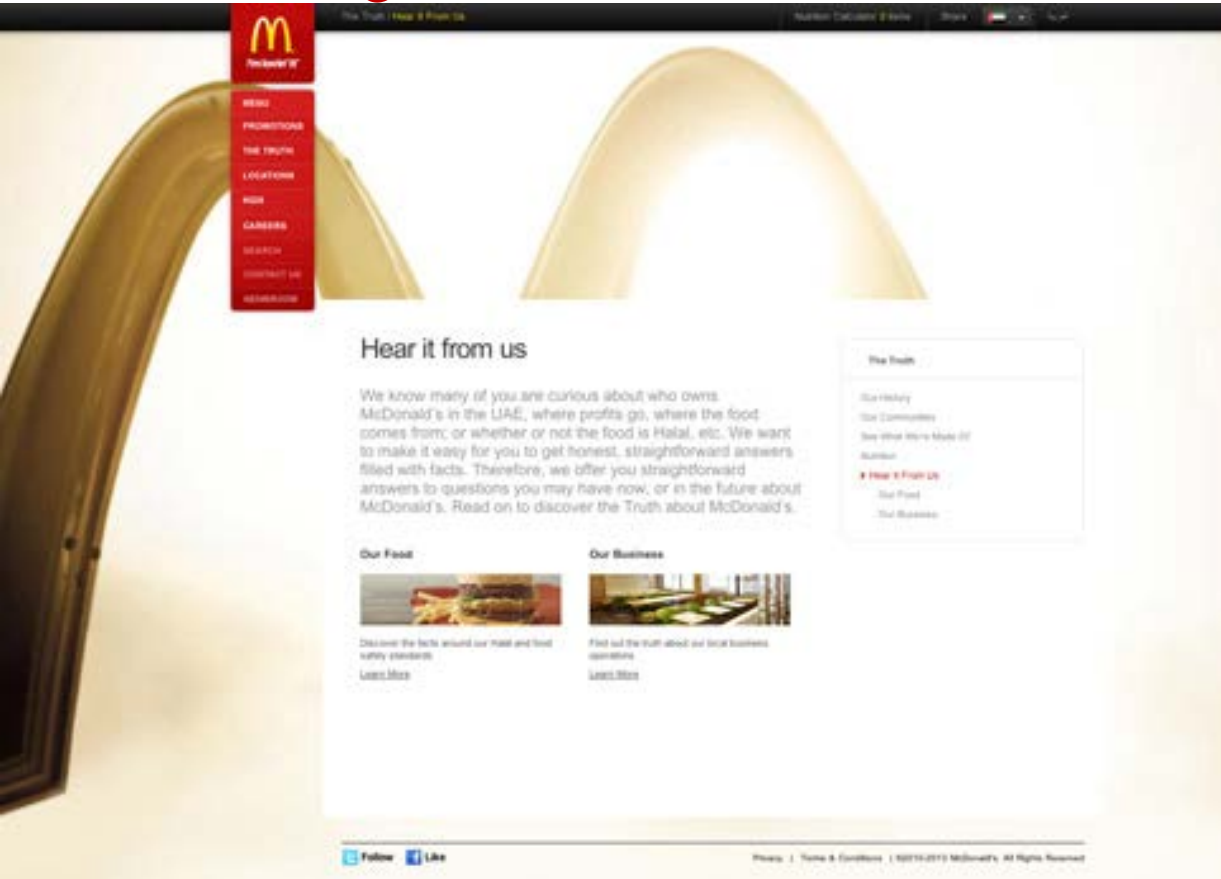
Turkey



- Collectivist culture
- Actions are in the interest of the group
- Several links to social media
- And mobile apps for feedback
- The chef acts as a common reference point

Cultural Differences Online – Masculinity vs Femininity

Saudi Arabia



- Masculine

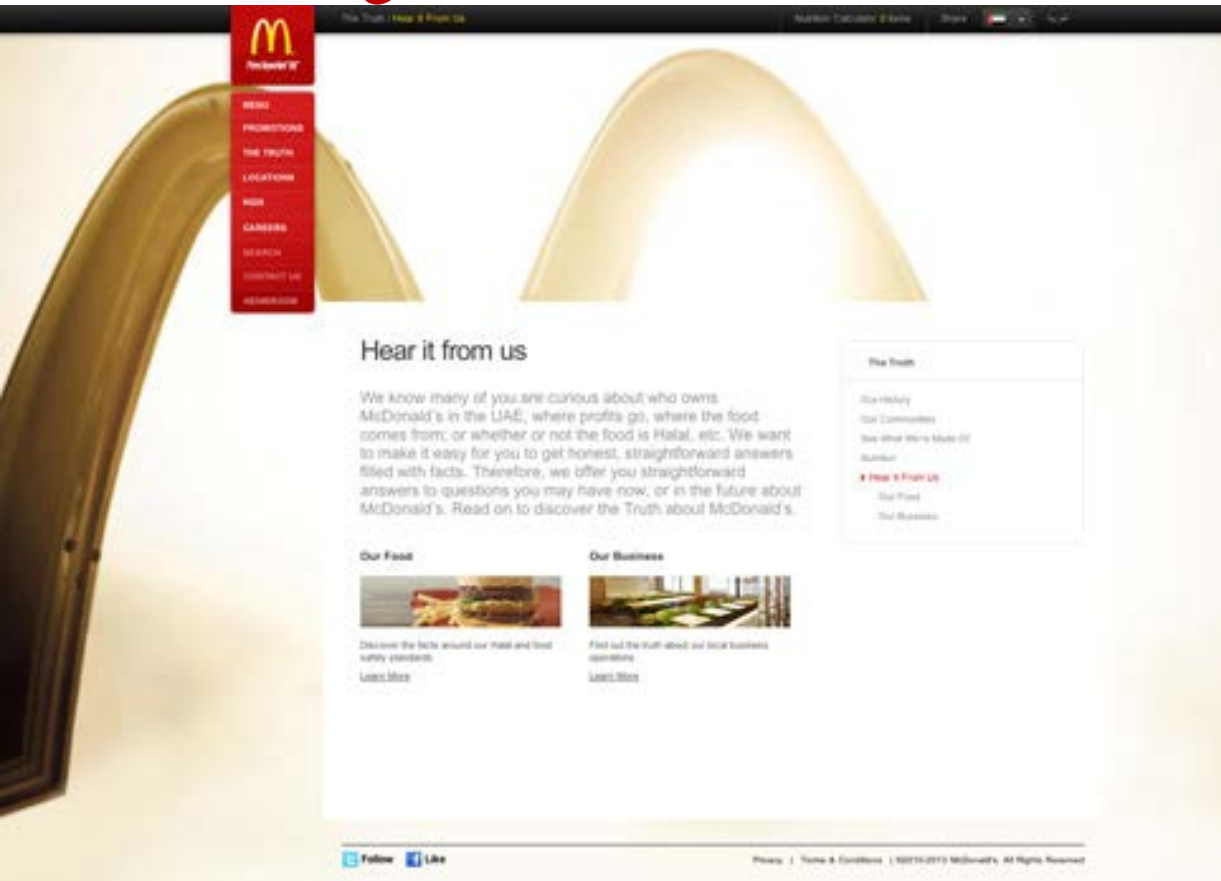
Norway



- Feminine

Cultural Differences Online – Masculinity vs Femininity

Saudi Arabia



- Masculine
- Directly point out their expertise
- Truth category: where does profit go, owner info, etc.

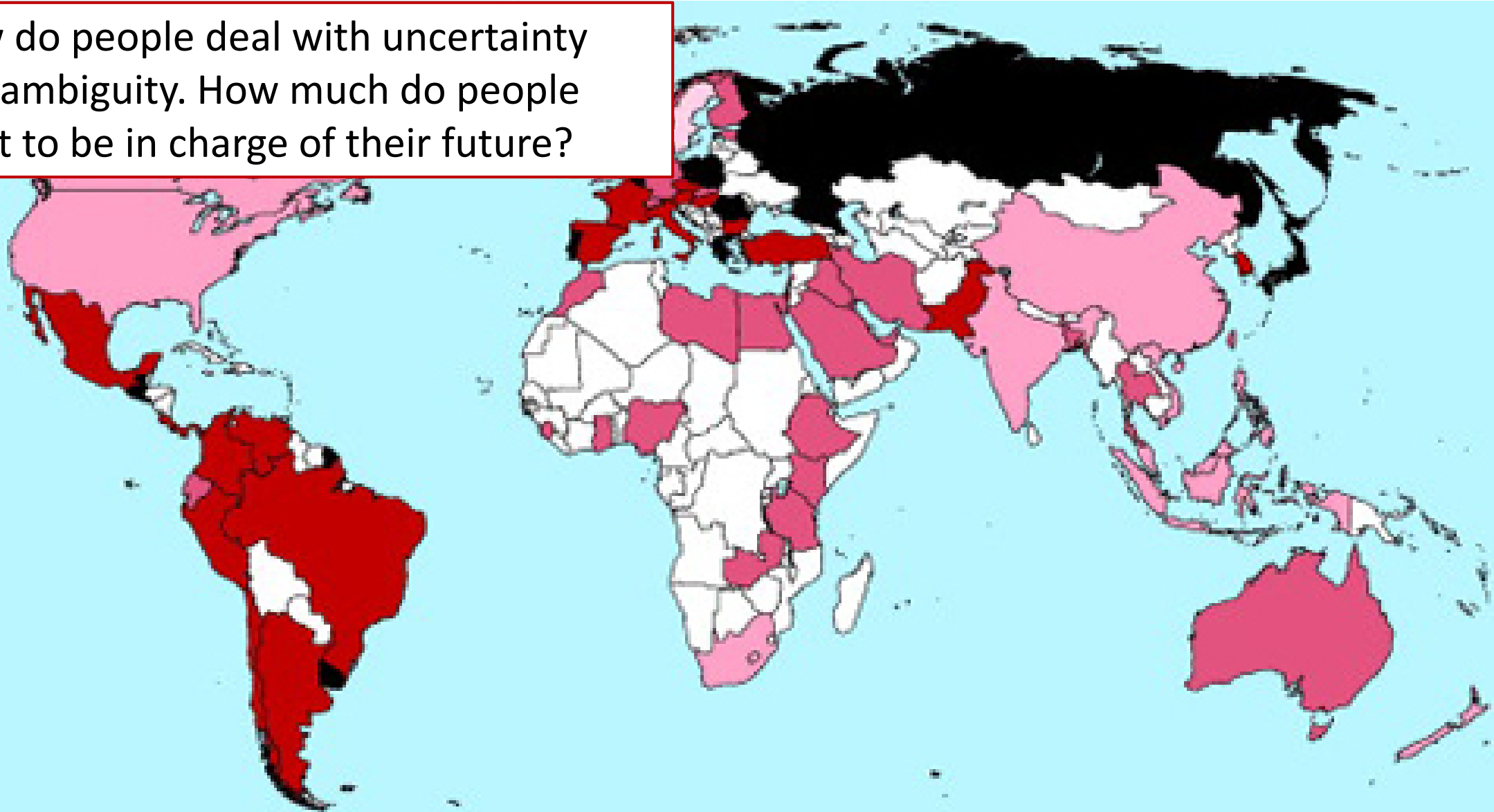
Norway



- Feminine
- Engaging and entertaining
- Playful design, great food
- Direct link to comprehensive “contact us”

Cultural Differences Online – Uncertainty Avoidance

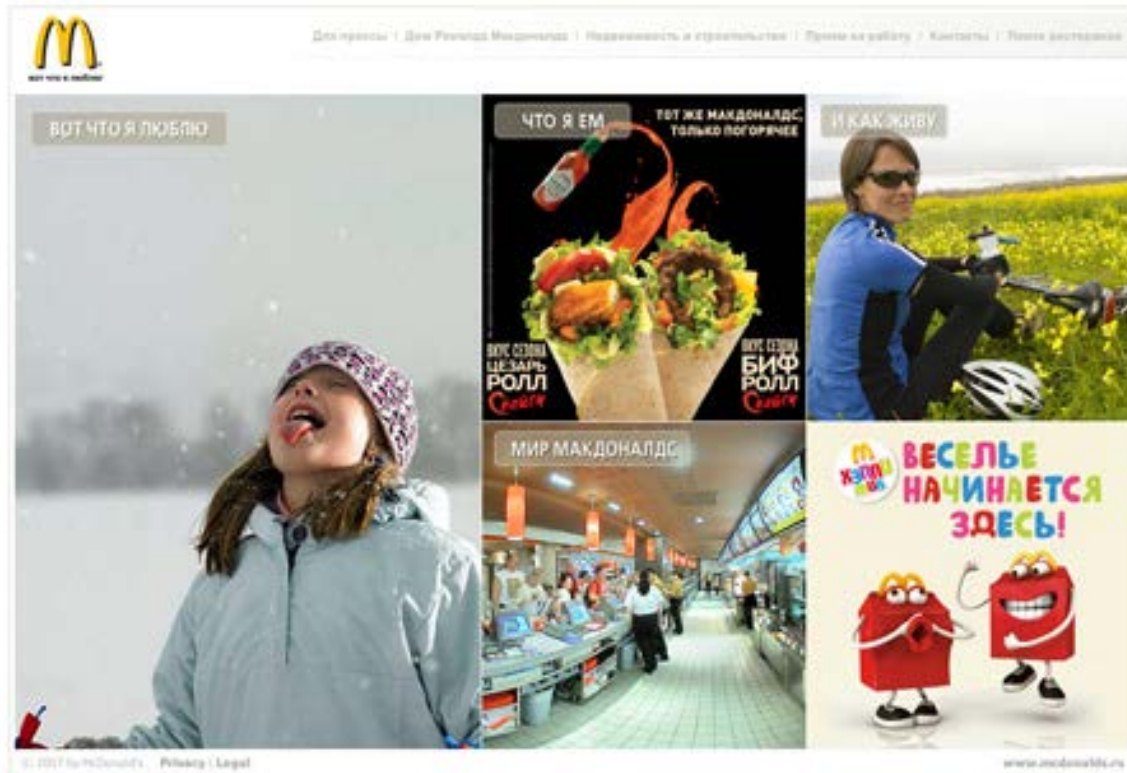
How do people deal with uncertainty and ambiguity. How much do people want to be in charge of their future?



Cultural Differences Online – Uncertainty Avoidance

Russia

India



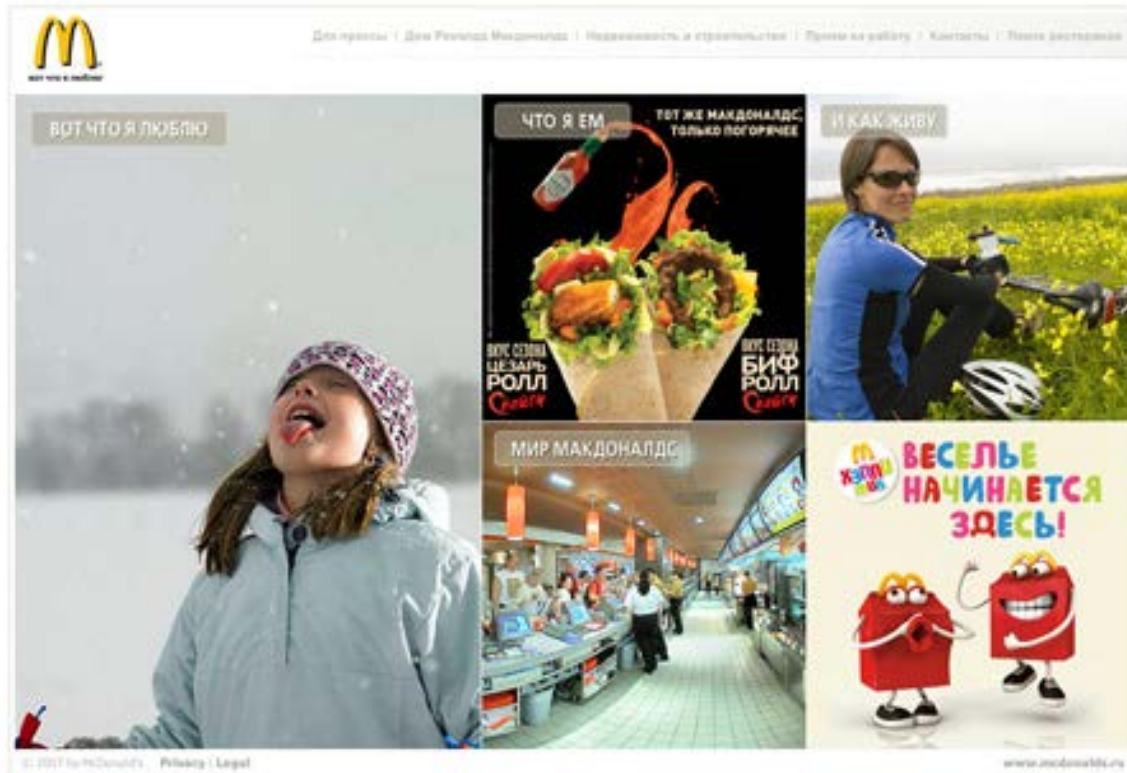
- High uncertainty avoidance

- Low uncertainty avoidance

Cultural Differences Online – Uncertainty Avoidance

Russia

India



- High uncertainty avoidance
- Clear, classic design
- Comprehensive top navigation bar
- Positive, safe, trustworthy feeling



- Low uncertainty avoidance
- Fun additional features
- Slider on top
- Choice of different color schemes

Cultural Differences Online – Long-term/Short-term orientation

Societies with a short-term orientation are normative in their thinking. Long-term oriented societies believe that truth depends on situation, context, and time.



Cultural Differences Online – Long-term/Short-term orientation

Germany

Hong Kong



- Short-term oriented people



- Long-term oriented people

Cultural Differences Online – Long-term/Short-term orientation

Germany



- Short-term oriented people
- Modern, clear design
- Yet familiar: currywurst
- Family values, sustainability

Hong Kong



- Long-term oriented people
- Options for long term planning
- Here's what is good for you, healthy living
- No pressure into immediate actions

Cultural Differences Online - Cultural differences

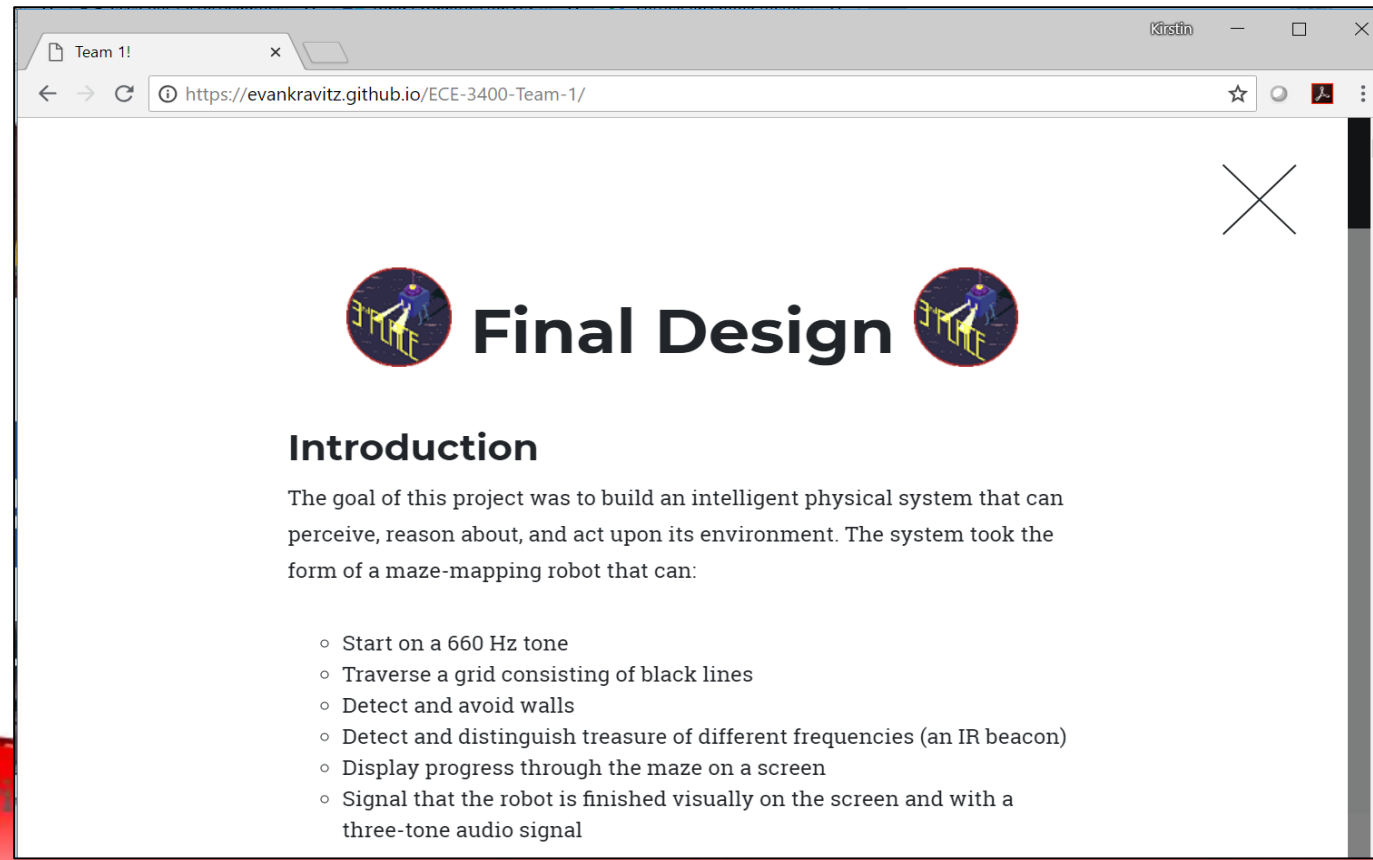
*What is your target group?
Makers (of all ages)*

Maker Culture

- *What are the characteristics of Makers?*
 - Attracted to graphics (movies, photos, etc)
 - Repulsed by long boring text
 - Step-by-step guidance
 - Access to raw files
 - Up-to-date info / activity
 - etc...
- **What are bad habits of website design?**
 - Too much text
 - Poor structure (no links to navigate the website)
 - Uncompressed photos

Technical Writing

- Who is your audience?
 - What are they looking for?
 - What is the main point you want to get across?
 - Is this best explained in a figure/text/video/combination?
-
- *Pop quiz*



The screenshot shows a web browser window with the URL <https://evankravitz.github.io/ECE-3400-Team-1/>. The page features a title 'Final Design' flanked by two circular logos. Below the title is an 'Introduction' section with a paragraph and a bulleted list of project goals.

Final Design

Introduction

The goal of this project was to build an intelligent physical system that can perceive, reason about, and act upon its environment. The system took the form of a maze-mapping robot that can:

- Start on a 660 Hz tone
- Traverse a grid consisting of black lines
- Detect and avoid walls
- Detect and distinguish treasure of different frequencies (an IR beacon)
- Display progress through the maze on a screen
- Signal that the robot is finished visually on the screen and with a three-tone audio signal

ECE3400 Fall 2017

AutoCAD Wheel Demo

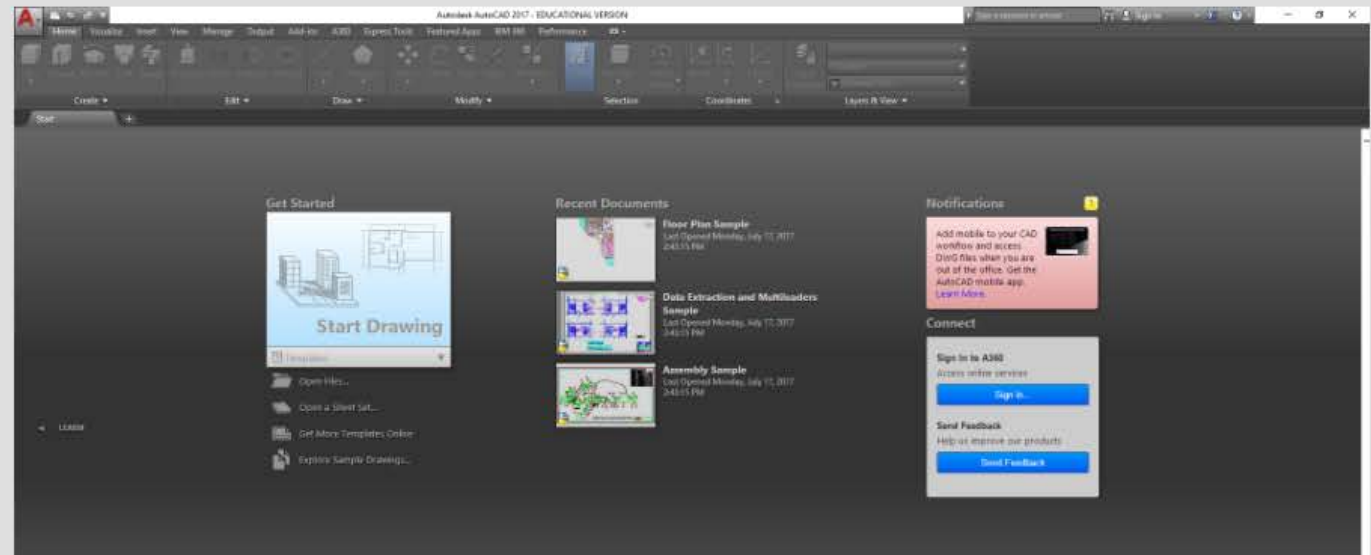
By Christopher Fedors, July 30th 2017

This tutorial has been turned into a video available [here](#).

Alternatively, if you prefer the step-by-step version, see below:

Getting Started

1. Open up a new drawing file in AutoCAD



Practical Information

- **Friday Sept 7th**
 - The websites will be graded for contents on lab 1.
 - Check the grading rubrics!
 - Here's an example of a webpage that got full points last year:
 - [The Flying Rabbits \(team 6\)](#)
- **Sunday Sept 9th**
 - Fill out the *team assessment* form.
 - Every two weeks from now on
 - All assessments add up to 15 points (out of 200 towards your final grade)
 - Goal is to give everyone an option to improve
- Please be patient regarding feedback

Go Build Robots!

