

Comp 34I/44I - HCI

Spring Semester 2019 - Week 9

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DEV Week Assessment

Course total = 25%

- continue to design a new or re-imagined UI and UX for a chosen application or device
- outline concept, research conducted to date
- consider applicable design patterns
- prototyping
 - *demo current prototypes*
 - *any working tests or models etc*
- anything else to help explain your updated project and app...

DEV Week Demo

DEV week assessment will include the following:

- brief presentation or demonstration of current project work
 - *~ 10 minutes per group*
 - *analysis of work conducted so far*
 - e.g. during semester & DEV week
- presentation and demonstration...
 - *outline app*
 - *show prototypes and designs*
 - *explain what does & does not work*
 - ...
- due Wednesday 20th March 2019 @ 7pm

User Experience (UX)

overview - part I

- broad and over-arching concept
- need to consider many disparate concepts
 - *user's reaction, both positive and negative*
 - *user's general experience with the application including*
 - design and interface
 - potential results and outcomes
 - *general functionality and what an application can do for a user*
 - *does the application, product etc solve a defined problem?*
 - *what can an application help a user to achieve?*
 - *what entertainment value does the application etc provide?*
- software application UX also influenced by acquisition
 - *was it easy to find, download, install, update?*

Image - User Experience (UX)

Linux installs

```
* Starting dcron ... [ ok ]
/etc/conf.d/net: line 6: syntax error near unexpected token `"dhcp"'
/etc/conf.d/net: line 6: `config-eth0=( "dhcp" )'
* Starting eth0
* Configuration not set for eth0 - assuming DHCP
* Bringing up eth0
* dhcp
* network interface eth0 does not exist
* Please verify hardware or kernel module (driver) [ !! ]
/etc/conf.d/net: line 6: syntax error near unexpected token `"dhcp"'
/etc/conf.d/net: line 6: `config-eth0=( "dhcp" )'
* Starting eth1
* Configuration not set for eth1 - assuming DHCP
* Bringing up eth1
* dhcp
* network interface eth1 does not exist
* Please verify hardware or kernel module (driver) [ !! ]
* ERROR: cannot start netmount as net.eth0 could not start
* ERROR: cannot start sshd as net.eth0 could not start
* Starting local ... [ ok ]

This is gentoo.localdomain (Linux i686 2.6.36-gentoo-r5) 14:12:19
gentoo login: _
```

Gentoo Linux

Source - Gentoo Linux

User Experience (UX)

overview - part 2

- user's identification of an **acceptable** product
 - *sense of usability and product preferences*
- Shackel, B. 1991.
 - *product's utility, usability, attraction relative to involved costs...*
- product considered not acceptable vast majority of users seek market alternatives
- UX inherently important aspect of goal to develop and provision successful application...

Image - User Experience (UX)

Windows



Windows

Source - Windows Comparison

Designing our app

considerations - part I

- tasks and activities a user can and should be able to perform with the product
 - *ie: what is the considered scope of the product's functionality?*
- as we consider each task, how will the interaction develop and be processed?
 - *in effect, what are the expected steps and actions for the user and the product?*
- we need to consider carefully the overall visual style or appearance of the application
 - *eg: visual design and layout for the basic page templates or screen layout - fonts, colours, typography and iconography, any branding...*
- what are the defined **places** in our application?
 - *eg: pages for a website, navigation controllers and panels for mobile apps, levels in games, and so on...*
- how does our user actually navigate between these **places** within our application?
- as we consider further our app's places, what content and layout will be presented to the user in each *place*.
 - *which controls are available, how will they be presented, arranged, and so on?*

Designing our app

Fun exercise - part I

Consider the design of an application to help a person **learn to play a game/s...**

Then, outline the following

- what is the considered scope of the product's functionality?
- what are the expected steps and actions for the user and the product?
- what are the defined **places** in our application?

Designing our app

considerations - part 2

- how will the user interact with these controls?
 - *ie: just mouse and keyboard, is touch accepted?*
 - *are there behaviours associated with these controls?*
- are there any events within our application that are not triggered by the user?
 - *eg: timer driven events, remote calls and services, backup protocols, automatic updates...*
 - *are any behaviours actioned during such events?*
- does the application store, request, manage any data?
 - *what type of data, where, format, protocols, services...*
 - *how do we present this data on-screen and to the user?*
- is there a naming scheme for interface and interaction elements?
 - *eg: data, elements, places, objects, controls, navigation, and any other pertinent concepts...*

Designing our app

Fun exercise - part 2

Continue the design of an application to help a person **learn to play a game/s...**

Outline the following

- which controls are available, how will they be presented, arranged, and so on?
- are there any events within our application that are not triggered by the user?
 - *consider effective management of these events...*
- does the application store, request, manage any data?

Designing our app

considerations - part 3

- error handling scheme for the app
 - *how will the user be informed? will the user have the option to gracefully recover from errors etc?*
- are there defined user roles in the app?
 - *what actions, privileges are permitted per role?*
- how do our users request or find assistance within the app?
 - *is it an active system or passive? ie: interactive or reference based documentation, tutorials, videos, discussion forums etc...*
- how is the app structured to promote app guidance for users through tasks?
 - *help for the users to work out how the app actually works...*

Designing our app

Fun exercise - part 3

Continue the design of an application to help a person **learn to play a game/s...**

Outline the following

- are there defined user roles in the app?
- how do our users request or find assistance within the app?
- how is the app structured to promote app guidance for users through tasks?

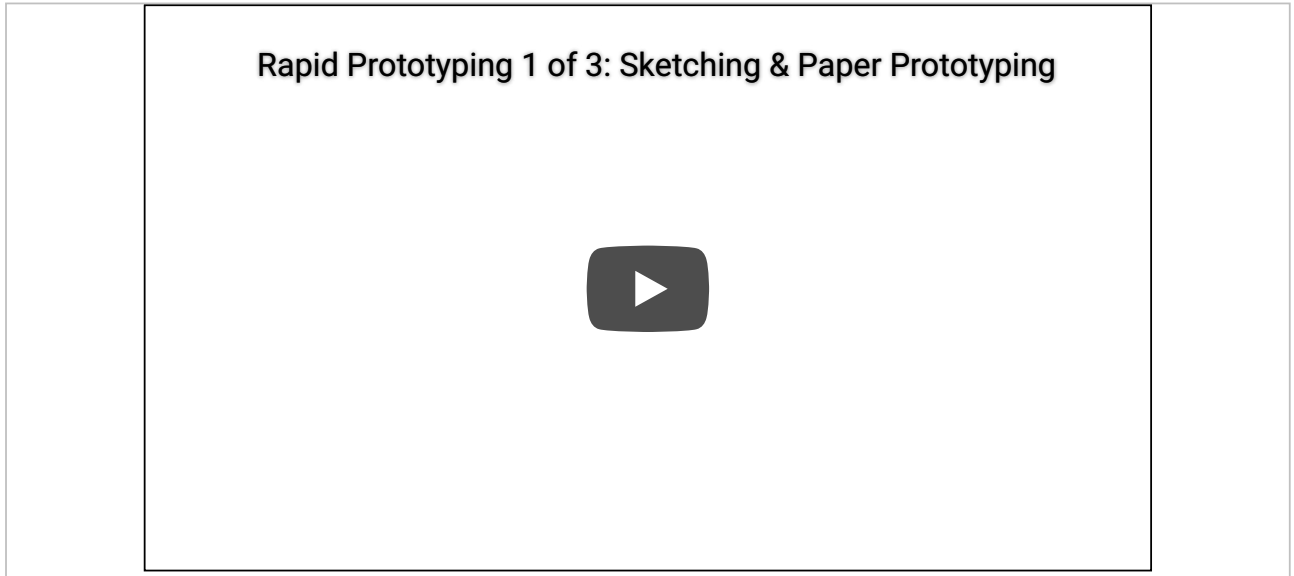
Designing our app

considerations - part 4

- need to engage in a number of related tasks
 - *eg: gathering requirements and their analysis*
- need to understand our user base, the target audience for our app
 - *includes their characteristics, requirements, how they intend to interact with the app*
- as designers and developers we will need to understand
 - *the type of work users want to complete*
 - *the inherent tasks*
 - *the effective problem domain*
- to a lesser degree, this will also require an understanding of the technology requirements
 - *eg: chosen languages, frameworks, device hardware...*
 - *impacts how and what we are able to design and provision for our users*
- need to consider prototypes, mockups, design documentation and specifications, and testing...

Video - Design

Paper Prototyping



Rapid Prototyping I of 3: Paper Prototyping
Source: YouTube - Google

Video - Design

Digital Prototyping

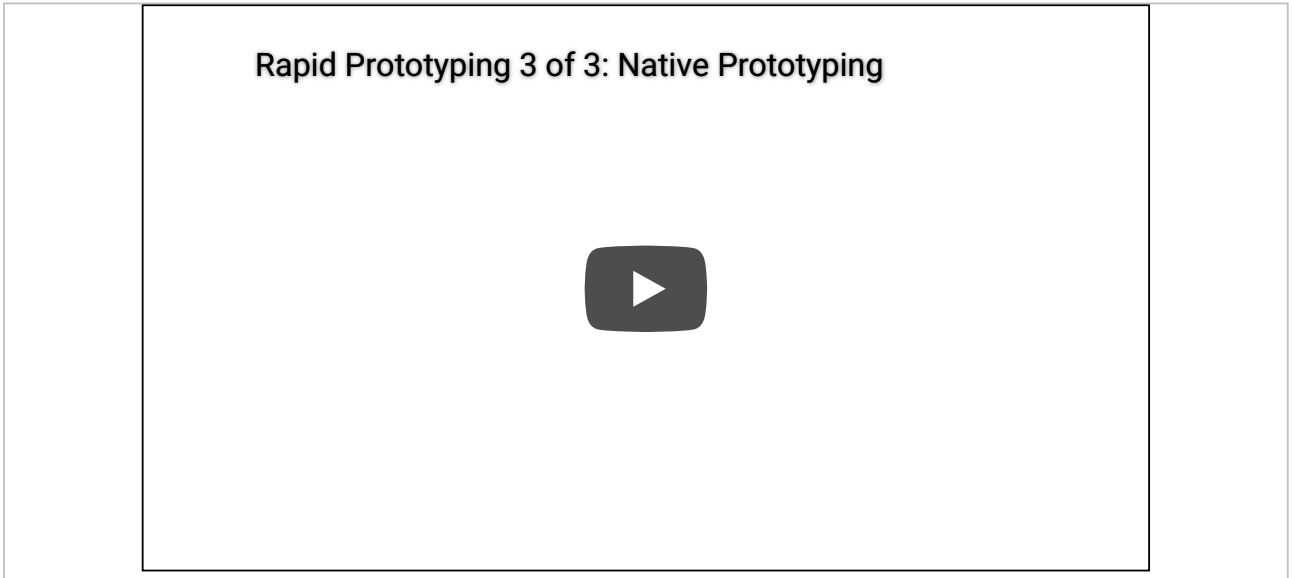


Rapid Prototyping 2 of 3: Digital
Prototyping

Source: YouTube - Google

Video - Design

Native Prototyping



Rapid Prototyping 3 of 3: Native Prototyping

Source: YouTube - Google

Users and Skills

intro

- continue to consider our application's users
- primary challenge involves consideration of product development relative to both beginner and advanced users
 - *how to make usable and productive app for all concerned*
 - *comprehensible and learnable for beginners*
 - *do not hinder expert users from optimal productivity*
- carefully consider user skill levels
- be aware of changes to skill levels over time
- aware of practical ways to help our users attain and improve skill levels
- understanding user's skill levels helps application of interaction concepts and principles

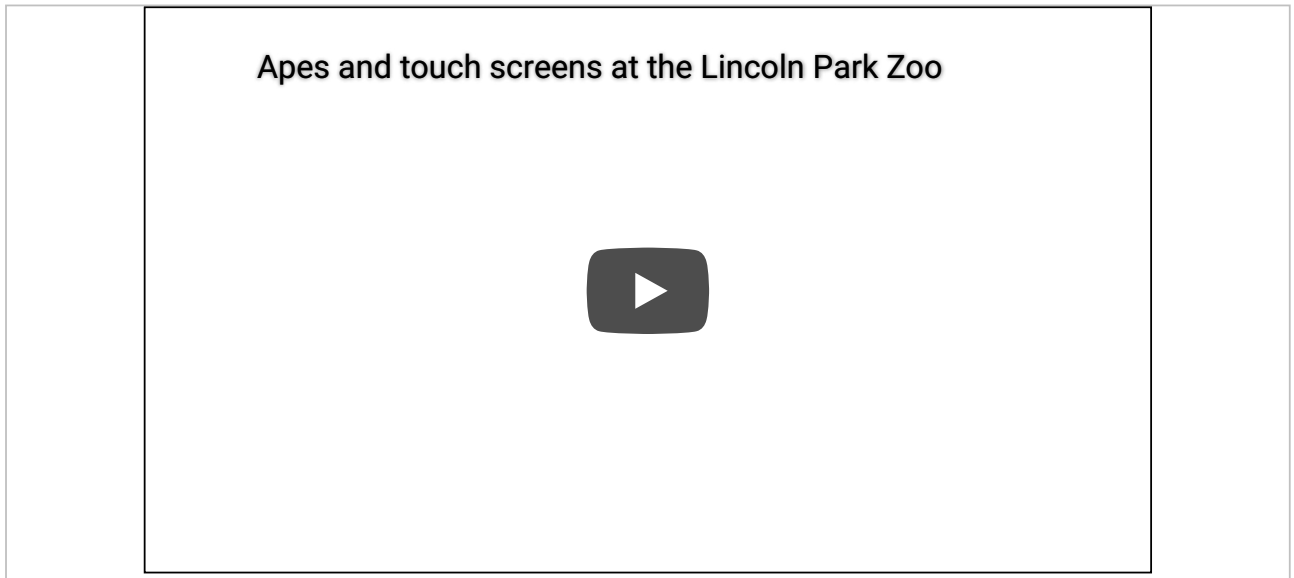
Users and Skills

user categorisation - part I

- we can often categorise users by application skill levels and aptitude
- **evaluation user**
 - *testing and evaluating an app and not yet committed to its usage*
 - *trying to determine its suitability for their requirements*
 - *no pressing tasks or action at hand*
- **beginner user**
 - *trying to accomplish some tasks with the application*
 - *little or no prior experience with the app's usage*
 - *general feelings of uncertainty and learning by trial and error, general experimentation*
 - *some, but not all, will use the available tutorials, help documentation etc*

Video - Users and Skills

Touch screens at Lincoln Park Zoo



Apes and Touch Screens at Lincoln Park Zoo

Source: YouTube - Chicago Tribune

Users and Skills

user categorisation - part 2

■ **intermediate user**

- *more confident and experienced user, able to complete most of their required tasks*
- *unlikely they will have explored all of the app's features and options*
- *user comfort and fluency will not have been achieved for the application*
- **perpetual intermediates**
- *Cooper et al. 2007.*

■ **expert user**

- *greater application confidence and certainty*
- *awareness of product's domain and advanced options*
- *able to complete tasks with ease, solving problems as they arise...*

■ **power user**

- *considered an extension of an **expert** user with a fascination of the application*
- *normally enjoys customising the application and testing its limits*

Video - Usability

Users and skills



Your First Script - Apps Script Tutorials
Source: YouTube

Users and Skills

development of skills

- user classification is inherently a simplistic interpretation of skills acquisition and development
- many disparate factors influence development of skills. For example,
 - **domain knowledge**
 - *assumption of underlying, pre-existing knowledge for a given application's scope*
 - **general computing skills and knowledge**
 - *many applications assume general computing skills and knowledge*
 - *eg: simple ability to use similar applications*
 - *ability to use their chosen mode and tools of interaction*
 - **general intelligence and reasoning abilities**
 - *an assumption of general reasoning and extrapolation skills*
 - *ability to read and understand help documentation...*
 - **persistence, motivation, and dedication**
 - *some users will, of course, give up when faced with problems and challenges*
 - *others are more persistent and will try to solve a problem or issue*
 - *gamification and rewards may help this issue...*

Users and Skills

assumptions - part I

- consider basic assumptions about users' minimum required skills and knowledge
- often dependent upon goals and functionality of the product, application...
- some inherent assumption of skills for your application
 - *eg: user will be able to use a keyboard, mouse, touchscreen...*
 - *basic level of verbal, reasoning, and mathematical knowledge*
- valid user testing important relative to such assumptions
- testing helps define and highlight unrealistic design choices and assumptions
- modify assumptions and design in response to testing feedback
 - *re-consideration and re-design may be necessary*

Users and Skills

assumptions - part 2

- assumption of Domain knowledge - Documenta Latina
- gaming and applications
 - eg: *Royal Game of Ur*



Royal Game of Ur

Source - Royal Game of Ur British Museum

Video - Users and Skills

Deciphering the world's oldest rule book



Deciphering the world's oldest rule book

Source: The British Museum - YouTube

Video - Users and Skills

The Royal Game of Ur



The Royal Game of Ur

Source: The British Museum - YouTube

References

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