Comp 341/441 - HCI - Notes

Spring Semester 2018 - week 11

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Designing our app

considerations - part 1

- 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 1

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...*

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...*

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 1 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 1

- 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

References

- Shackel, B. *Usability - context, framework, design, and evolution.* Human factors for informatics usability. Cambridge University Press. PP. 21-38. 1991.