



# HUMAN-COMPUTER INTERACTION

THIRD  
EDITION

DIX  
FINLAY  
ABOWD  
BEALE

## Interaction Design Basics

# Roadmap

- Introduction
- Design
- The Design Process
- Users

# INTRODUCTION

- Interaction design is *not just about the design of interactive systems*
- Interaction design also includes the *design of artifacts* (e.g. tools/resources such as office equipment).
- Interaction design is about the design of interaction itself.

[however]

- Interaction design is *not just about the artifact that is produced* (physical device, computer program, etc)
- Interaction design is about understanding and choosing how the artifact is going to affect the way people work or live.
- Moreover interaction design is [not just about the artifact but also] about: documentation, manuals, tutorials, etc.
- According to Bill Verplank: interaction design is design for human use.

# DESIGN

- Design is achieving goals within constraints.
  - ▣ Goals: what is the purpose of the design that we are intending to produce, who is it for, why do they want it?
  - ▣ Constraints: what materials must we use, standards, platforms, cost, time?
  - ▣ Trade-offs: understand that a trade-off will be required, choose which goals or constraints to relax so that others can be met (choose the most appropriate trade-off).
- The golden rule of design is: *understand your materials*
- In the context of Human-Computer Interaction, understand your materials means:
  - ▣ Understand *computers*: capacities, limitations, platforms, tools.
  - ▣ Understand *humans/people*: psychological and social aspects, human error.
  - ▣ Their *interaction*.

# THE DESIGN PROCESS

- The central message or the core of interaction design is:  
*the user*
    - ▣ Yes, the user
      - at the beginning
      - in the process
      - at the end
- of the design process  
(recall user-centered design)

# USERS

- Know your users!
- Who are they? [e.g., age, background, computer experience, etc]; probably they are not like you! (watch out the temptation to design as if you were the main user)
  - ▣ Talk to them
  - ▣ Watch/observe them
  - ▣ Use your imagination
- Some methods for knowing your users:
  - ▣ Personas
  - ▣ Scenarios
  - ▣ Cultural probes
  - ▣ Questionnaires
  - ▣ Interviews

# USERS

- Persona
  - ▣ A rich picture of an imaginary/fictional/virtual person who represents the core user group.
  - ▣ A description of a user archetype that will be kept in mind when making design decisions.



# USERS

## Persona

- Develop a set of personas covering different types of intended users and different roles.
- Define the personas, with details such as:

- name
- age
- job title
- picture/photo
- physical characteristics
- background
- goals
- etc

### Background:

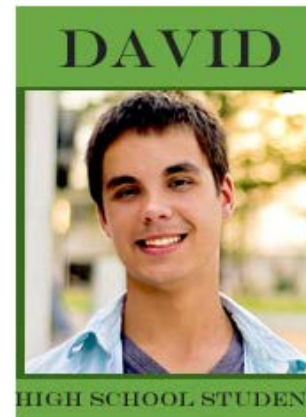
- 17, male
- Liverpool, UK
- High-school student
- Self-confident
- Using technology a lot for games and applications
- Social active
- Irresponsible

### Motivations:

- A lot of friends
- Highly communicative
- Emotional
- Up to date with technologies
- Find a good university
- Be ready for fresher year
- Learning biology and physics

### Frustrations:

- Choosing university
- Reading books
- Stressful to upset parents
- Spending a lot time at home
- Lack of concentration skills
- Moving away from parents



**UCL**

### Lifestyle:

He is a student from Alsop High School in Liverpool. He is planning to study in UCL in London. David still does not know exactly what course he is interested in, but he has a huge passion for biology and physics. He is interested in successful studying in university, because he wants his parents to be proud of him.

David is very social active, he has a profile almost in every social network and has more than 1000 friends there. David usually spends his time with friends going to clubs, cinema and other entertainments. Before moving to London, David tries to find new friends online, especially who is already studying in UCL in biology and physics. He thinks they will help him to understand how to live and study in new university.

David does not like to sit home and read books, he uses Galaxy Note 3 regularly to chat with friends, to play games and use applications. He always wants to surprise his friends with a new record in the game by being in the top of ranking tables.

- Can be Narrative or Otherwise [example>





# USERS

## □ Scenario

- A story for design.
- A description that envisions a person's interaction with a system.
- Example:

*It is Friday afternoon and Peter is flying out of Rome to Milan. He does not have enough money for a taxi to the airport, and he is running late. He goes to the local ATM and identifies himself. He specifies that he wants 150 Euro from his savings account. He would prefer to have the money in 20 Euro notes so that he can give the taxi driver the correct change. He does not want a printed receipt because he does not bother keeping track of transactions in his savings account.*

# USERS

## □ Role and use of scenarios

- Help us to identify:
  - *characteristics* of the user that may impact the design and *tasks and context* that the system needs to support.
  - Scenarios force us to think about the design in detail and notice potential problems before they happen; we can therefore verify whether the design would make sense to the user and whether the proposed implementation architectures would work.
- Be used to communicate with others (e.g. designers, clients, users)
  - it is easy to misunderstand one another whilst discussing abstract and technical ideas; scenarios being concrete/practical are thus easier to share.
- Be used to validate other models
  - a detailed scenario can be 'played' against other models e.g. task and dialog models.
- Be used to express dynamics
  - mere screenshots and pictures primarily give a sense of the appearance of the system; a scenario can give a sense of the behavior of the system.

# USERS

## □ Cultural probes

- Cultural probes are (typically small) information gathering packages of items designed to provoke or prompt the user/target group to record what is meaningful to them [user/target group].
- Cultural probes are handed out to the user/target group to take away and to open and to use in their [user's/target group's] own environment.
- Some of the items that a cultural probe may contain include: postcards, maps, camera, photo album, media diary,...



# USERS

- Role and use of cultural probes
  - ▣ Can be appropriate where direct observation is sometimes hard e.g., at home, with psychiatric patients, etc.
  - ▣ Cultural probes can be used to: inform interviews, prompt ideas, enculture designers.

*You will learn more about such methods with Valeria Mirabella during the lesson on Collecting User Requirements*