Week 5-3
Scenarios

SFWRENG 4HC3/6HC3 Human Computer Interfaces

* Slides adapted from previous instructors of COMPSCI/SFWRENG 4HC3/6HC3

slido

Which of the following are considered best practices when using personas in design or development? (Select all that apply)

ⓘ Start presenting to display the poll results on this slide.

Review: Personas

- A rich description of **an imaginary user**
  - who often represents your primary stakeholder group
- **Generated from user research**
  - Synthetic representative users of a bigger user group
- **Treat personas as your friends**
  - Help focus on users and context
- Become the **characters** in **scenarios**

Lance — mobile gourmet

secondary persona

I know it's important to eat well for all the right reasons, and I love delicious food. But in reality, it's really tough to make time for shopping and cooking. Fresh stuff requires more frequent trips to the grocery store, planning, and preparation, which I really just don't have time to do.

Personal Details

Age: 32

Profession: **Architect**

Home: **Nashville, TN**
Small house, also functions as his studio.

Goals and Priorities

Convenience above all

New flavors and experiences

Balanced healthy ingredients

Lance is always juggling 2 (or more likely 5-6) projects at once. He is an architect with a focus on green housing, and he supervises a team of off-site collaborators and on-site contractors. Lance loves to eat healthy and tasty food, but prioritizes his nutrition and health like everything else in his life (deadlines *always* come first).

His main objective in buying food is convenience and flavor. Lance really loves trying new flavors and new food experiences. He considers himself a sushi expert, sandwich snob, and barbecue aficionado. With his busy work life, he tends to fall back on restaurant meals to feed his needs, but he knows that too much of that really hits the waistline and drags his energy level down. He's also lactose intolerant, and it can be tricky avoiding dairy in restaurant food.

The majority of his groceries come from Amazon Fresh®, and he appreciates the flexible functionality of the site. For example, keeping lists, maintaining a grocery history, and adding alerts for items he frequently buys. Since he's always online, in the studio and in the field, he's really comfortable using technology to get things done.

Lance's Goals and Priorities

- Convenient food where and when he needs it
- Stay healthy so he can maintain his high-energy lifestyle
- New flavors that satisfy his adventurous palate
- Mobile solution that keeps up with him
- Easy, so it doesn't take any more valuable time

Lance Facts

Serving Size: 1
Serving Per Container: 1

Amount Per Serving

Age: 32	Nashville, TN Health Facts*
Total Weight pounds	140
Height Inches	64
BMI	24
Cholesterol 194 mg/dl	Normal
Sodium 148 mEq/L	Elevated
Glucose 116 mg/dL	Normal
Blood pres. 128/74 mmHg	Good

Not a significant health risk. Adding healthier daily nutrition and exercise will alleviate.
* Recent blood tests part of his yearly physical.

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Personas and Scenarios

- **Personas and scenarios** go together

- **Personas** become **the characters in scenarios** which describe the current situation or your proposed solution

Scenarios

- A scenario is a description of people using **artifacts** within **environments** carrying out **tasks or activities**

- Scenarios summarizing field study work focus on **current state of user activities** and exclude the proposed system

- Scenarios are typically expressed in plain writing
  - But they can be done graphically, i.e., with storyboards

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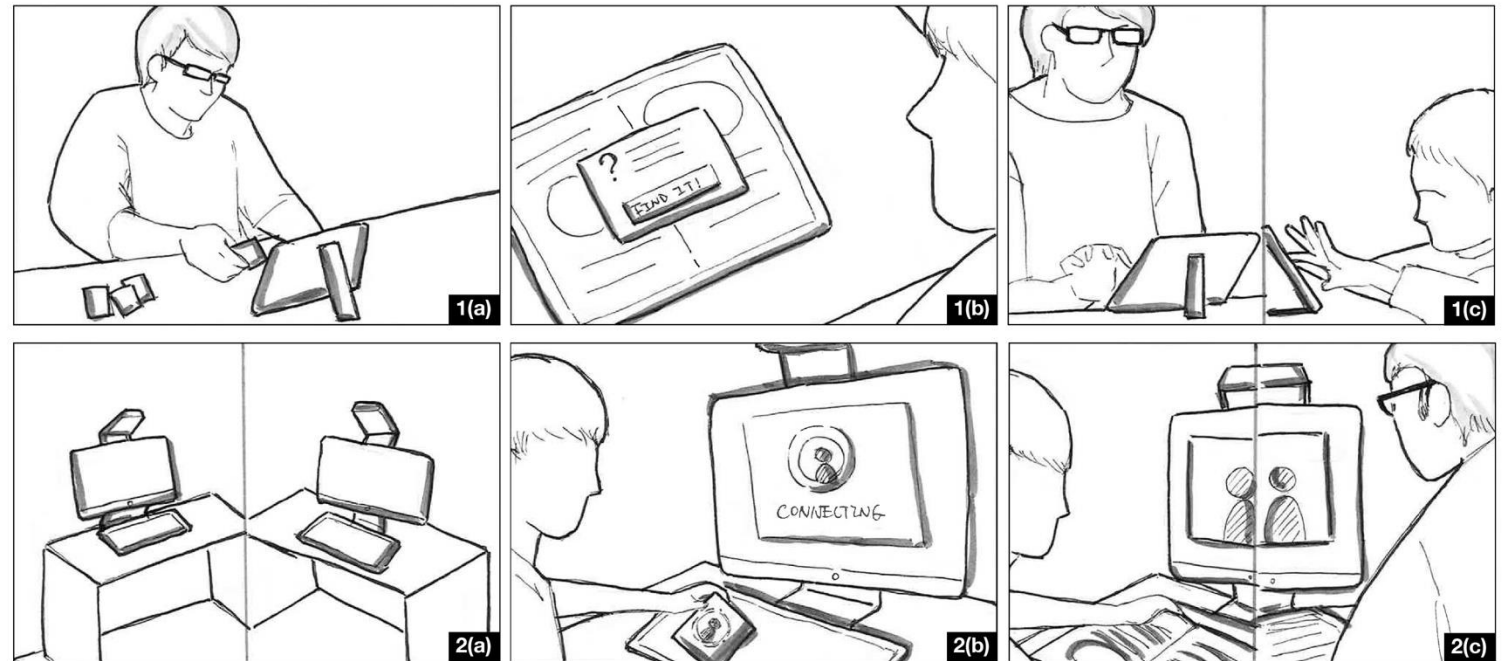University

Scenarios: Example

Bob is a project manager in an advertising company, who **often works from home**. One day **he forgot his iPhone at home** and **had meetings with clients across town**. While attending an important meeting he realized that **he was about to miss his lunch appointment, but he didn't have the phone number to cancel his scheduled lunch**

Day-in-the-life Scenarios

- Characterize what happens when people perform **typical tasks**

- Can be acted out as a form of **walkthrough**

- Can be shown **to study participants for confirmation of accuracy**

Scenarios with Storyboards

Personas in Scenario

- Age 32

- Office worker (ad account manager)

- No children, lives alone

- Dog died (used to walk it for exercise)

- Starting to put on weight

- Used to play football at university, much less active now

- Active social life

- "I want to stay fit, but on my own time and fitting in to my schedule"
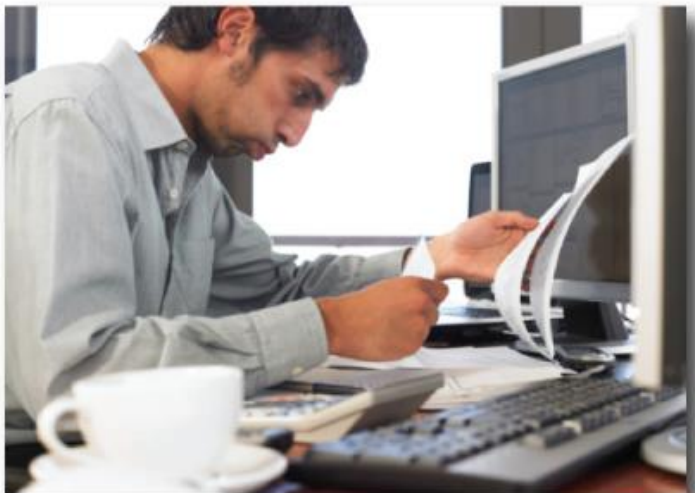
BJORN

1. Home from work, he was meant to go out the previous evening but got invited out to a dinner party instead. This evening is now free so he decides to go for a run.

2. He's in his living room and sets up his run. This involves:
   o route choice
   o exercise level, eg easy jog or hard run (specific pacing feedback choice, eg within PB)
   o music choice
   o disturbability status (eg, open to contact/running partner)
   o weather
   o (warm up/strectching?)

3. He get's changed and leaves the house, the handover is transparent from living room companion to mobile device based companion and is aware of all Bjorn's choices regarding run setup.

4. Just as he's about to begin, the sun breaks through the clouds and Bjorn decides he'd rather go for a longer run than initially selected in his living room, this change must be facilitated through his mobile companion device. Selective rather than creative process (eg, chose run three on route 2)

5. He starts running hard.

6. Asked whether he's warmed up as he's running above a warm up rate.

7. He slows down to a more gentle jog and reaches his start point.

8. A touch of the device indicates he's starting his run.

9. Music begins

10. Pace setting tactile feedback begins.

11. Midway through run he's informed that Julie is also running in the woods and has set her DS at open to running partners (this is a closed list of pre-set social network that Bjorn belongs to).

12. He slows down and runs on the spot and sends her a greeting asking if she'd like to join him, she says yes.

13. She catches up and the companion automatically reconfigures his pacing settings to match hers.

14. After a circuit they part ways and Bjorn heads home.

15. On entering the house Bjorn warms down and stretched which induces a brief summary on his mobile device whilst the detailed data from his run is transparently transferred to his home network.

16. He walks into the kitchen to grab a glass of water and plan what to make for dinner. His home companion notes that he went for a long run today so must be hungry, and suggests some recipes based on what he has in his fridge "how bout that steak, it goes out of date tomorrow". Nothing takes his fancy so he asks the companion to search online whilst he has a shower. Takes shower, comes down and is presented with some new recipes and the fact that Julie called and asked him for a drink that night.

17. At a later time he asks for an overview of his past three months exercise, his companion notes that his heart rate is recovering quicker which suggests he's getting fitter, but for the past two weeks he's not been running for as long.

Types of Scenarios

- **Stories** are the real-world experiences of people.
- **Conceptual scenarios** are more **abstract** descriptions in which some details have been stripped away.
- **Concrete scenarios** are **generated from abstract scenarios** by adding specific design decisions and technologies and once completed these can be represented as use cases.
- **Use cases** are **formal descriptions** that can be given to programmers.

Scenarios at Different Stages

- Many **stories** will be represented by a few **conceptual scenarios**. Also, **each conceptual scenario** may **generate many concrete scenarios**.

- **Several concrete scenarios** will be represented by a single **use case**.

Scenarios at Different Stages

- Designers **abstract** from the details of **stories** to arrive at **conceptual scenarios**.

- They specify **design constraints** on conceptual scenarios to arrive at **concrete scenarios**.

- Finally, they formalize the design ideas as **use cases.**

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Stories

- Stories are the **real-world experiences, ideas, anecdotes and knowledge of people.**

- These may be captured in any form and **comprise small snippets** of activities and the contexts in which they occur.

- This could include videos of people engaged in an activity, diary entries, photographs, documents, the results of observations and interviews and so on.

- People's stories are **rich in context**.

- Stories also capture many **seemingly trivial details** that are usually left out if people are asked to provide more formal representations of what they do.

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Stories: Example

"I needed to make an appointment for Kirsty, my little one. It wasn't urgent – she had been having a lot of bad ear-ache every time she had a cold – but I did want to see Dr. Fox since she's so good with the children. And of course ideally it had to be when Kirsty was out of school and I could take time off work. I rang the surgery and the receptionist told me that the next appointment for Dr. Fox was the next Tuesday afternoon. That was no good since Tuesday is one of my really busy days so I asked when the next one was. The receptionist said Thursday morning. That meant making Kirsty late for school but I agreed because they sounded very busy – the other phone kept ringing in the background – and I was in a hurry myself. It was difficult to suggest a better time without knowing which appointments were still free."

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Conceptual Scenarios

- Conceptual scenarios are more **abstract** than stories.

- Much of the context is stripped away during the **process of abstraction** and **similar stories** are combined together.

- Useful for generating design ideas and for understanding the requirements of the system.

- **Once the designer has accumulated a collection of stories, common elements will start to emerge.**

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Abstraction

- **Aggregation and Classification:** moving from the details of specific people undertaking specific activities in a specific context using a particular piece of technology to a more general description that still manages to catch the essence of the activity.

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Aggregation

- **Aggregation** is the process of treating a whole thing as a single entity rather than looking at the components of something.

- In most domains, **for example**, one would aggregate a screen, processor, disc drive, keyboard and mouse and treat this as a single thing – a computer – rather than focusing on the components

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Classification

- **Classification** is the process of recognizing that things can be collected together, so that dealing with the class of things is simpler (more abstract) than dealing with the individual things.

- **There are no set ways to classify things,** so the analyst has to work with the stories that have been gathered and with the users themselves to decide which things belong together and why.

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Scenarios: Stories

- From real-world stories, and rich in details and context.
- **Keys:** Knowing appointments availabilities for making appointments

"**I** needed to **make an appointment** for **Kirsty, my little one**. It wasn't urgent – she had been having a lot of bad ear-ache every time she had a cold – but I did want to see **Dr. Fox** since she's so good with the children. **And of course ideally it had to be when Kirsty was out of school and I could take time off work**. I **rang the surgery** and the receptionist told me that **the next appointment** for Dr. Fox was the **next Tuesday afternoon**. That was no good since Tuesday is one of my really busy days so **I asked when the next one was**. The receptionist **said Thursday morning**. That meant making Kirsty late for school but I agreed because they sounded very busy – the other phone kept ringing in the background – and I was in a hurry myself. **It was difficult to suggest a better time without knowing which appointments were still free**."

Scenarios: Conceptual Scenarios

Booking an appointment: People with any degree of basic computer skills will be able to **contact the doctors' office** at any time via the Internet and **see the times which are free for each doctor.** They can book a time and receive confirmation of the appointment.

- **Abstracted** description, **hiding all details**

Conceptual Scenarios: Example

- **Little or no specification** of precise technologies or how the functions will be provided.
- Could be made
  - **more abstract** by not specifying that the Internet should be used
  - **more concrete** by specifying that the booking should be made from a computer rather than a mobile phone.
- Finding **an appropriate level of abstraction** at which to describe things for a given purpose is a key skill of the designer.

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Conceptual Scenarios: Example

Different Levels of Abstraction

- The user needs a solution to **quickly check** <u>parking availability</u> while multitasking

- Users want **instant access** to <u>services</u> that save them time in their day-to-day lives

Concrete Scenarios: Example

Booking an appointment/01

Andy needs a doctor's appointment for **his young daughter Kirsty** in the next week or so. The appointment needs to **be outside school-time and Andy's core working hours**, and ideally with **Dr. Fox**, who is the children's specialist. **Andy uses a PC and the Internet at work, so has no difficulty in running up the appointments booking system**. He logs in and from a series of drop-down boxes, **chooses to have free times for Dr. Fox displayed for the next two weeks.**

- Adding **details** and **constraints**

Scenarios: Concrete Scenarios

- Concrete scenarios are particularly useful for **prototyping and envisioning design ideas** and for **evaluation** because they are more detailed and prescriptive.
  - **Notes** can be added to scenarios that draw attention to possible design features and problems
  - **Concrete scenarios** may begin to dictate a particular interface design and a particular allocation of functions

Scenarios: Concrete Scenarios

- Concrete scenarios are particularly useful for **prototyping and envisioning design ideas** and for **evaluation** because they are more detailed and prescriptive.
  - **Notes** can be added to scenarios that draw attention to possible design features and problems
  - **Concrete scenarios** may begin to dictate a particular interface design and a particular allocation of functions
- There **is not a clean break** between conceptual and concrete scenarios.
  - The **more specific** the scenario is about some aspects, the **more concrete** it is.

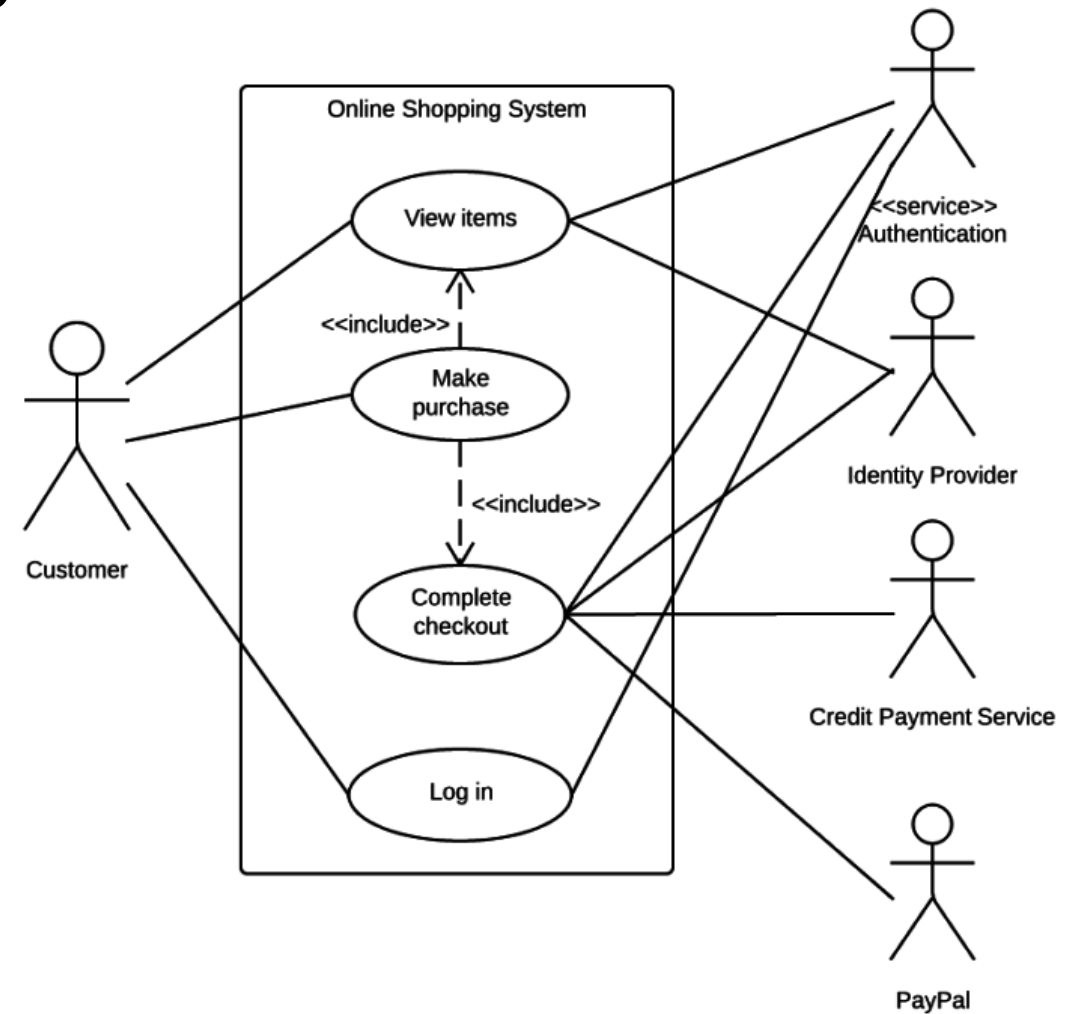# Scenarios: Use Cases

- Scenarios that **motivate and capture design**
    - Focus on **human-computer interaction**
- **Sequence of steps** (the "normal course")
    - Alternative paths
- In narrative style (as a story), with **a high level of details**

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Use Cases: Example

1. The **users** chooses the option to arrange a meeting.
2. The **system** prompts user for the names of attendees.
3. The **user** types the list of names.
4. The **system** checks that the list is valid.
5. The **system** prompts the user for meeting constraints.
6. The **user** types in meeting constraints.
7. The **system** searches the calendars for a date that satisfies the constraints.
8. The **system** displays a list of potential dates.
9. The **user** chooses one of the dates.
10. The **system** writes the meeting into the calendar.
11. The **system** emails all the meeting participants informing them of the appointment.

Use Cases: Diagrams

- Describes use cases graphically

- Involves **one or more 'actors'** interacting with the system (in the box)

- Each **use case** (in a bubble) may be associated with **more than one actor**

Online Shopping System

View items

<<include>>

Make purchase

<<include>>

Complete checkout

Log in

Customer

<<service>> Authentication

Identity Provider

Credit Payment Service

PayPal

Essential Use Cases

- Three-part narrative:
    - **A name** that expresses the **overall user intention**
    - A stepped description of **user intentions**
    - A stepped description of **system responsibilities**

- More general than scenarios **from the system aspect**
    - Don't say anything about specific technology
    - Generalize to any system

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Essential Use Cases: Example

USER INTENTION	SYSTEM RESPONSIBILITY
Arrange a meeting	Request meeting attendees & constraints
Identify meeting attendees & constraints	Search calendars for suitable dates Suggest potential dates
Choose preferred date	Book meeting

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Scenarios: Overview

Stories	Conceptual Scenarios	Concrete Scenarios	Use Cases
Real-word experiences	**Abstract** descriptions **without** details	Abstract scenarios with **added specifics details and constraints**	**Formal descriptions** for development

Scenarios: Overview

Real-world
experiences

Stories → **Conceptual Scenarios** → **Concrete Scenarios** → **Use Cases**

Abstract from classify and aggregate (many -> one)

Specify **constraints** (one -> many)

Formalize the design ideas

Scenarios in Project Milestone 2

3. Primary Persona, Scenarios, & Hierarchical Task Analysis (Group Work)

Using what you've learned from your data gathering process and report, you will create representations of your user groups and their work. You must include:

a. One (1) primary persona representing a key feature of a user group with their goals, behaviours, and attitudes.

b. At least one (1) story scenario and at least one (1) concrete or conceptual scenario showing what you've learned about your stakeholders, their tasks, environment, and artifacts relevant to what you intend to design for. These scenarios must include your primary persona in some way and might be based on stories you heard during your elicitation process.

Remember that these are about the users' current situation as you understand it from your elicitation process, *not* a proposed solution.

c. One (1) Hierarchical Task Analysis (HTA) of a task relevant to your users (e.g., related to your primary persona) and what you intend to design for (e.g., as defined in one of your scenarios), identifying "pain points"/problems that you want your design to help with.

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Week 5 Goals Overview

- ~~Monday~~
  - ~~Understanding Users: Learn and Try~~
  - ~~Data Analysis~~
- ~~Wednesday~~
  - ~~Personas and Scenarios~~
- **Friday**
  - ~~Scenarios~~
  - **Task Analysis**

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