Homework 2 - User Interfaces: A Conversation with Users

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1. Overview

The goal of this assignment is to help you better understand the language of User Interfaces - in particular promote the idea that a user interface is a conversation between the user and the system. This homework will also encourage you to critically analyze common UI components or widgets.

1.1. Learning Objectives

- Exposure to the proper use of interface controls/components/widgets.
- Effectively choose components to promote a conversation with the user.
- Practice analyzing existing interfaces for flaws and areas of improvement.
- Question common interface component usage.

1.2. Deadlines and Credit

Part	Deadline	Credit
Part I	Thu 9/26, 2:55pm	~5 points
Part II	Thu 9/26, 2:55pm	~30 points
Part III	Tue 10/1, 2:55pm	~30 points
Part IV	Thu 10/3, 2:55pm	~35 points

1.3. Git Repository & Submission

Clone `git@github.coecis.cornell.edu:info4340-fa2019/YOUR_GITHUB_USERNAME-hw2.git`. Replace **YOUR_GITHUB_USERNAME** in the URL with **your actual GitHub username**. This is usually your NetID.

Submit **all** materials to your GitHub repository for this assignment.

Tip: Commit and push your changes every time you work on your project. Every time you commit and push you store your changes on the GitHub server. This acts as a back-up for your work. It also means that if you forget to submit before the deadline, there's something already on the server that the TAs can grade.

Part I: Communicating Effectively using User Interfaces

Read Chapter 1: Communication Design Principles pages 11-21.

Read the following sections:

- Introduction
- Imagine this typical UI design situation...
- Core principles of UI is communication
- Effective communication

Write a summary of what you learned from the Chapter 1 reading in **part-i.md**.

Part II: Analyzing Controls for Effective Communication

In this part you will be asked to critically analyze example UI elements and reflect on how the use of a particular control dictates what is being communicated to the user. Using controls effectively means understanding the problem being presented and really thinking about the *purpose* of a particular control and how the user will interpret that control. Certain situations require using specific controls, and as a designer, misusing controls adds unneeded confusion to the final product.

1. Learning to use the Appropriate Control.

Read Chapter 2: Interaction Design pages 65-100.

Read the following sections:

- Introduction
- Interactions
- Controls (words)
- Commands (verbs)
- Labels and instructions
- Feedback

Write a summary of what you learned from the Chapter 2 reading in **part-ii.md**.

2. Control Critique

For each of the interfaces below, analyze whether the provided components/controls/widgets are *suitable* for the given problem.

For interfaces that are suitable, discuss the affordances the particular control provides. For examples that are **not** suitable, discuss which McKay principles the provided control violates and how you would change the control to better match the problem.

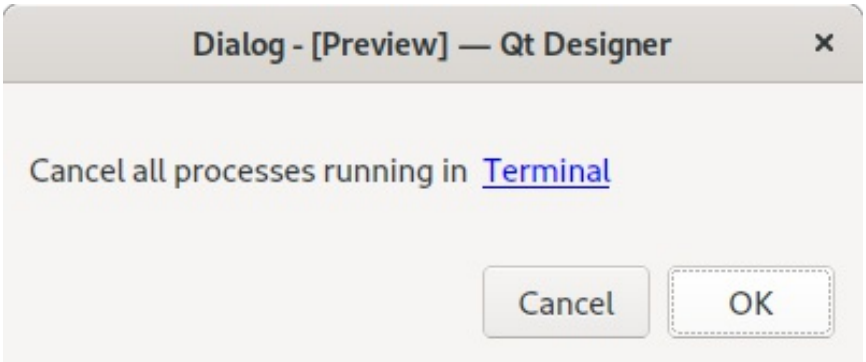
Write your critique in **part-ii.md**. Refer to **Chapter 2** in your course textbook, specifically the section on **Controls** when formulating your responses. Please keep your responses to 2-3 sentences.

2.1. Problem 1: Dollars and Cents

A user needs to enter a financial dollar amount into a bank system to conduct a transfer. The bank systems displays the following interface control:

2.2. Problem 2: Terminating the Terminal

When quitting your terminal, you are presented with the following control:



2.3. Problem 3: Use the Toolbar!

You are working with a piece of photo editing software. You need to use the crop tool to size the image down. You then use the coloring tool to make the photo black and white. Finally, you use the pen tool to draw your logo on the photo.

You are faced with the following control interface.

2.4. Problem 4: Price Range

You are on a popular shopping website and want to look for items within a certain price range. You are presented with the following control:

2.5. Problem 5: What's Your Age Again?

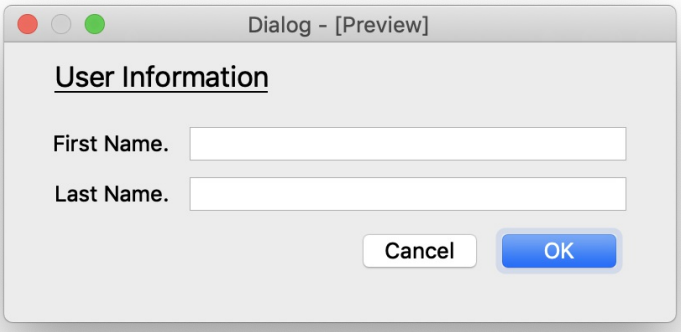
You are asked to provide your age for a life insurance policy. Applicants must be 35 or younger for this policy. You are presented with the following control:

2.6. Problem 6: Where do you Live?

You are volunteering for the Ithaca Canned Food Drive and the organizer needs your address to drop supplies off (brown bags, flyers, tax-deduction forms, etc.).

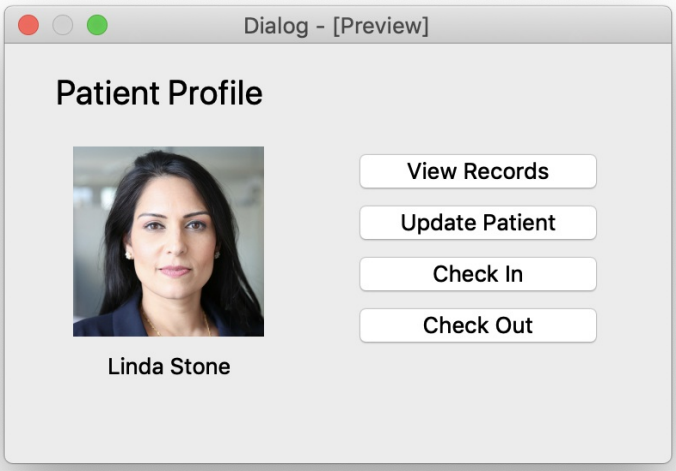
2.7. Problem 7: Who are you?

When setting up your computer, you are asked to input your first and last name. The control presented is as follows:



2.8. Problem 8: Patient Information

You are working in a doctor's front office. A patient is signing in and you need to pull up any information relevant to their medical history.

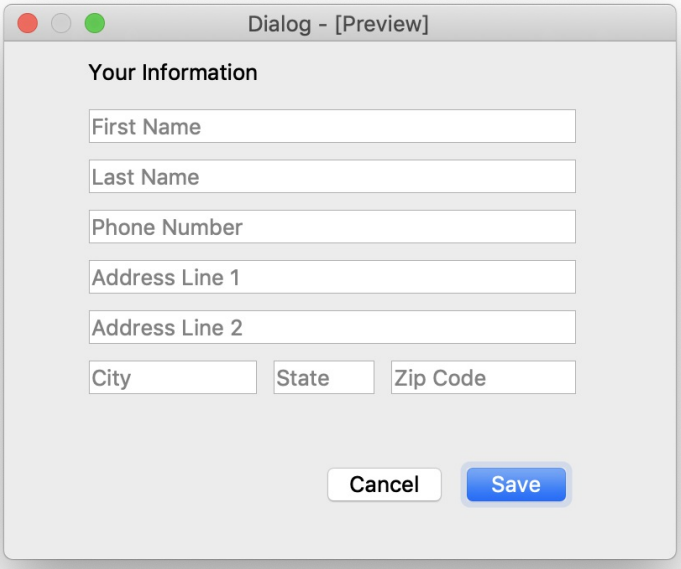


2.9. Problem 9: Happy Birthday!

An online form for a popular social media site asks for a birthday input to make sure you are older than 12. The interface presents the following control:

2.10. Problem 10: Registering

You are registering a software license for the popular word processor. The application asks for your contact information so that it can autofill information when creating documents.

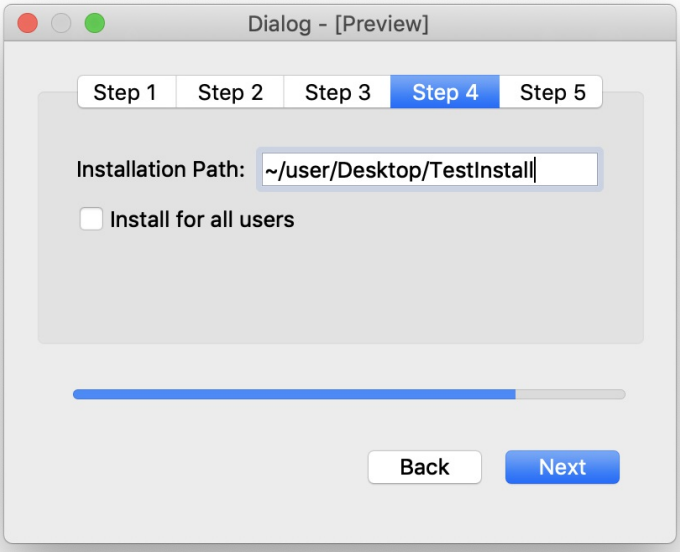


2.11. Problem 11: Time to Change Your Password

You need to update your work computer's user password. Your office takes cybersecurity very seriously, so you need to meet several password security requirements. You are greeted with the following dialogue box when trying to make the change.

2.12. Problem 12: Just Follow the Steps

You are installing a new piece of Qdobe Software. The installation process takes several steps and asks the user several questions, including which version they'd like to install, where they'd like to install, etc.



Part III: Controls for Effective Communication

For the following problems, assess the given scenarios and explain in **part-iii.md**:

- The assumptions you made when considering the outlined situation.
- The possible controls that would satisfy the outlined situation.

  These don't need to be entirely suitable. In fact, you may list options that you've seen while browsing the internet or using your computer (which are in fact incorrect).

  You should list the pros and cons of each control here.
- As a designer, you will need to make an executive decision on which control to use.

  Out of the possibilities, argue which is **best** suited to the outlined situation and **why**.

  You should reference your textbook and make sure that a control is properly suited to the situation.

  Remember, in our everyday lives we often come across controls that are used incorrectly.

For help with deciding on which control or widget would be most appropriate, we encourage you to **thoroughly** read Chapter 2. You may also reference online materials, but *please cite them with your responses.*

1. Problem 1: Mutually-Exclusive Options

A user needs to select 1 out of 15 mutually-exclusive options.

2. Problem 2: Customer Feedback

A user needs to provide feedback on customer service. You ask for their rating, ranging from 0 to 5.

3. Problem 3: Favorite Books

You wish to display a list of your favorite books, grouped by genre, on your personal website.

4. Problem 4: Multiple Categories

A user needs to select multiple categories from a list of 15 options.

5. Problem 5: Stop It!

You are building a run tracking application and need to include a button to stop tracking and complete the run. Your users have complained that they often hit the button unintentionally.

6. Problem 6: Searching

You have created a job search application. Some of the information comes in the form of Boolean values, such as:

- Are you eligible for employment in US?
- Are you currently employed?
- Did you graduate from a 4-year, accredited institution?

7. Problem 7: Lots of Functions!

You've built a photo manipulation application. Once a user has a part of the image selected (you don't need to address this in your response), they need to be able to perform a selected function. There are about 15 different functions, some of which can be grouped together.

Additionally, these functions sometimes take a few seconds to complete. You will need to indicate this to the user.

Part IV: Interaction Design via Glom

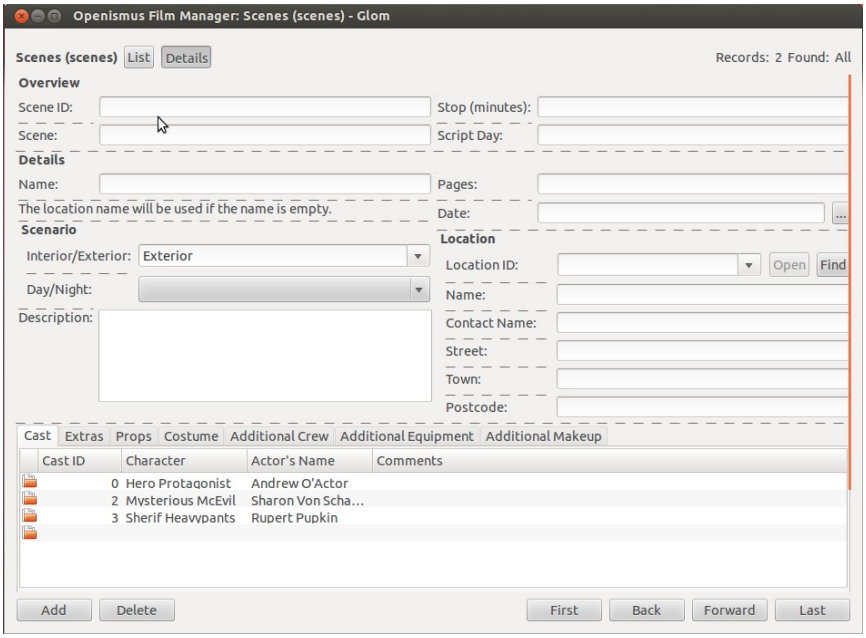
In this part, we will be analyzing a user interface from Glom. Glom is an open source GNU/Linux application that allows users to design database systems through a front-end user interface. Essentially a user can input data through the provided interface and a PostgresSQL backend will aggregate and store the information.

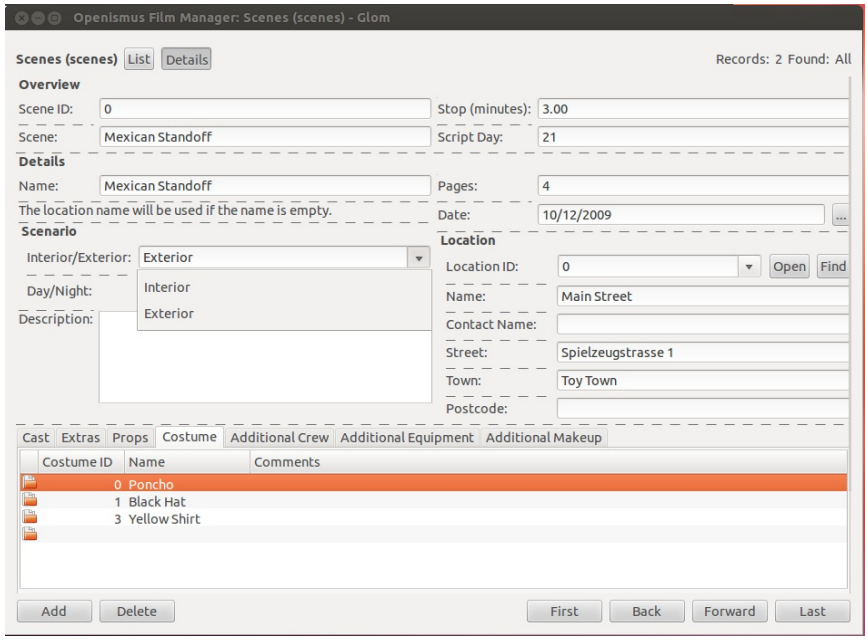
As you will see through the screenshots below, Glom was very much created without employing many principles of interface design. This is where you come in!

1. Evaluate Glom's Interface

You are a film manager for an upcoming production and are using the Glom interface to keep track of the logistics for the shoot. For each scene, you need to keep track of the location of the scene, the cast, props, and costumes each scene requires.

You are provided the following user interface for entering details for each scene:





Analyze the interface in terms of the objectives below. Use the scenario to help direct your analysis.

1. Find examples within the user interface that detract from a clear and intuitive user experience. Formulate your discussion in terms of McKay's notions of *words*, *verbs* and *dialogue*. Provide specific examples from the interface (screenshots) when applicable in your analysis (~2 paragraphs). Some questions to consider:

    - Is the meaning of each control clear?
    - Does the presentation of the controls effectively communicate how to interpret each respectively?
    - Are the commands discoverable?
    - Are the commands direct, simple, and placed appropriately?
    - Is the explanation of the page clear?
    - Are instructions present and easy to understand?
    - Is the flow of the overall interface clear?
    - Are the labels self-explanatory?

2. Find 1-2 controls within the provided interface that violate McKay principles. For each control, describe why the control as it is currently implemented does not effectively communicate with the end user (~1 paragraph). Some principles to consider:

    - Missing or misleading affordances.
    - Wrong control used.
    - Convoluted control *body language* (see the *Controls* Section in *Chapter 2*).
    - Missing or misleading labels/instructions.

Write your responses in **part-iv.md** in your Git repository.

2. Glom Interface Redesign

Now that you've identified some design issues with Glom, it's time to redesign the interface to address these issues.

Use **hand-drawn** sketches to redesign the above interface to promote a more conversational aspect as detailed in McKay's **Chapter 2**. Use your analysis above to guide your design choices, and briefly document the major changes you made and the reasons behind them in your *rationale*.

Your design should address the issues you identified above. Fix the interface to follow the interaction design principles outlined in **Chapter 2** and to tailor the application interface to the scenario outlined above. Your design does not and should not be perfect. **The point of this assignment is to think about the conversation between the user and the interface. Address the communication issues.**

When you've finished redesigning the interface, provide a brief rationale about how your design addressed the communication issues you identified. This should probably be around 1-2 paragraphs. It's okay if it's less, just so long as your rationale is thorough, thoughtful, and covers the important points.

Write your responses in **part-iv.md** in your Git repository.