
02JSKOV - HUMAN COMPUTER INTERACTION

EXAM SIMULATION – 2020-01-16 / POSSIBLE SOLUTIONS

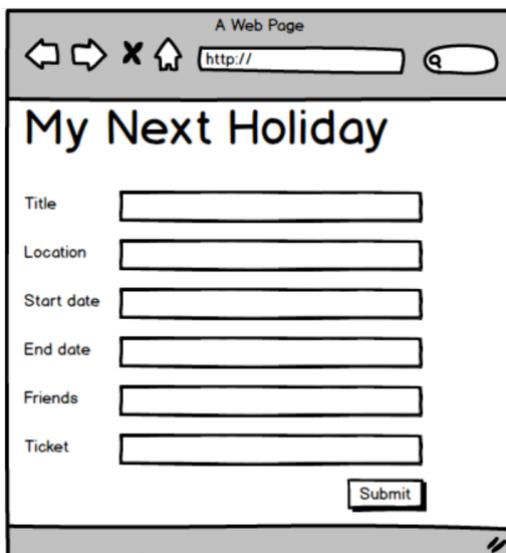
Closed-book exam: no notes or other material are allowed.

Allowed Time: 60 minutes.

The responses should be easy to read (write clearly!) and reasonably short (around 5-10 lines long).

1.

Consider the following fragment of a web wireframe prototype:



The wireframe shows a browser window titled "A Web Page" with a search bar containing "http://". The main content area is titled "My Next Holiday" and contains a form with the following fields: Title, Location, Start date, End date, Friends, and Ticket. A "Submit" button is positioned at the bottom right of the form.

Describe the main violations to the Nielsen's Usability Heuristics.

POSSIBLE SOLUTION

Some heuristic violations are:

#1 – Visibility of system status: identify mandatory vs optional fields

#4 – Consistency and standards: (1) "Friends" is probably a list, but it's shown as a text field, nonstandard display and nonstandard input, (2) Dates should be selected with a calendar icon, not a text input field

#5 – Error prevention: (1) there seems to be no way of preventing errors (but it will depend on the implementation of the various inputs) – (2) the Start Date / End Date fields should be designed to accept valid date ranges, only (in the future, and End>Start)

#6 – Recognition vs Recall: the "friends" field should offer the possibility so select from the list of friends (not typing them in)

#9 – Error recovery: It's not clear whether the "submit" action is permanent, or there will be a way to confirm and/or modify later.

#10 – Help and documentation: no tooltips or explanations to describe the meaning of the various fields (for example: what is the expected content of the field "Ticket"?)

2.

Describe the role of the "null hypothesis" in statistical tests, and provide an example in the context of controlled experiments.

POSSIBLE SOLUTION

In Controlled experiments, we want to evaluate the effect (on metrics) of design choices. The "Null hypothesis" (NH) is a statistical concept for assuming that design choices do **not** affect the chosen metrics. Statistical test (such as the Chi-Square Test) help us sustain or disprove the NH, with a certain degree of confidence/probability. If the NH is rejected, we accept the alternative hypothesis with a certain confidence: therefore, our design choice is significantly "better" than another.

3.

In multimodal interfaces, is it preferable to deliver one content over one specific media, only, or to deliver the same content over more than one media? In what cases is either option preferable?

POSSIBLE SOLUTION

Universal design and accessibility suggest that the same content should be delivered in different forms, by conveying equivalent semantic information (not necessarily identical content) over all the available channels. For example, a news can be read vocally by a news application and should also be available and readable in text form.

In some specific cases, however, some contents could not be meaningful in a media form, therefore this content may be available in only one form. In alternative, the format of the content may be organized in radically different ways across the different media, e.g., a textual FAQ and a vocal help bot provide the same information, but the first with a browsing metaphor and the latter with a conversational query metaphor.

4.

Describe the main differences between *design principles* and *design guidelines*.

POSSIBLE SOLUTION

Design principles are more high-level and apply across different technologies, interfaces, and application types.

Design guidelines are technology dependent, and they vary according to the device (PC, mobile, etc.), the operating system, and the type of application (desktop, web, native app). Often, they are strongly linked to the OS manufacturer.