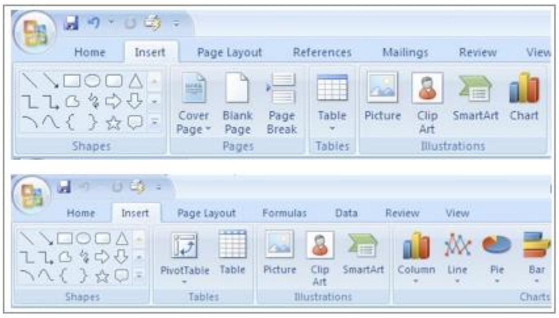
FIT2001: Systems Development – Workshop 9

Support Information

Activity 1: Review Quiz

Q1. Write one word to describe which of Ben Shneiderman's golden rules is being followed in these 2 screen images.

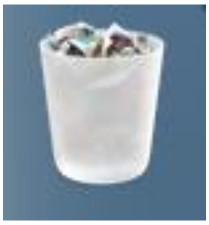


A1. ***Consistency*** *- makes it much easier for the user to use the system, as they do not need to stop and think where to find things as they are standard on every screen*

Q2. A persona:
A) Is a description of one of the users of the system
B) Is a representation of typical key audience segments of the system
C) Is the plural of person
D) Is fake so can cause confusion when designing the interfaces
A2. B) A persona is created by identifying representations of key audience segments for reference throughout the design process

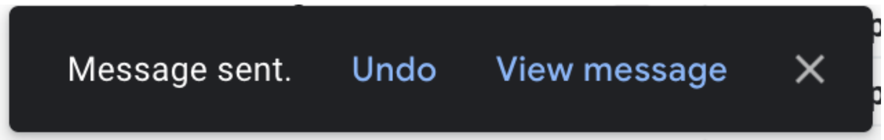
Q3. A good error message:
A) is very, very detailed and provides the user with lots of information about the error
B) gives the user lots of detail about what the error could possibly be
C) is written in an active voice and makes sure that the user knows exactly what they have done wrong
D) concisely describes the error and the possible solution
A3. D) A good error message should be concise as users like to scan and will not read a detailed message. They also need it to be accurate and precise rather than give them options as to what it could possibly be, which would cause them confusion. It should be written in a passive voice and an active voice would be blaming them and creating a negative environment. The message should also include the possible solution so they know next steps.

Q4. Write one word to describe what HCI design heuristic this bin represents:



*A4. **Metaphor** - Match between the system and the real world. The bin creates an analogy between features of the UI (needing to delete something) and some aspects of physical reality (a bin where you put things you no longer need) that users are familiar with.*

Q5. Which golden rule does this screen image represent?



Message sent.

A) Offer informative feedback

B) Prevent errors

C) Permit easy reversal of actions

D) Support internal locus of control

A5. C) Users need to feel that they can cancel or reverse an action and this Undo after an email is sent provides the capability for reversal of action. However, D) is also a reasonable answer as it supports internal locus of control. It gives users the opportunity to be in charge while interacting with the system. They can cancel the sending of their email if they wish.

Activity 3: Prototyping

- Using the Bayside Bikes detailed system description and forms:
    - Task 3.1: Develop a primary persona for the Booking/Rental function
        - What research do you need to conduct?
        - What data do you need to gather?
    - Task 3.2: Develop low fidelity hand-drawn interfaces (or you may wish to use a wireframe drawing tool – Balsamiq (easy to use but only 30-day free trial), Diagrams.net, Lucidchart, etc. … keep in mind that you have very limited time) for the Booking/Rental function for Bayside Bikes. To assist with understanding the business functionality, please review the detailed project description and Rental form.
    - Task 3.3: Assess the usability of your interfaces using Shneiderman's 8 Golden rules and Jakob Nielsen's 10 heuristics. Consider the questions listed below in student version.

A3 Discussion (the following pages are in landscape format)

Personas

<u>How to create a Booking/Rental persona? What does your typical bike renter looks like?</u>

Conduct your research

If you have a current website – look at Google analytics
If you have forms with demographic data you can summarise that
Are there any Facebook groups or special interest groups for people who like riding bikes – can you create a quick online survey, can you review the type of people on those groups from their profiles?
Are there any bike clubs you can contact for information?
Can you create a focus group of your past customers/
Can you interview the owner to find out if he can help with information about typical customers?

What type of data do you need to gather?

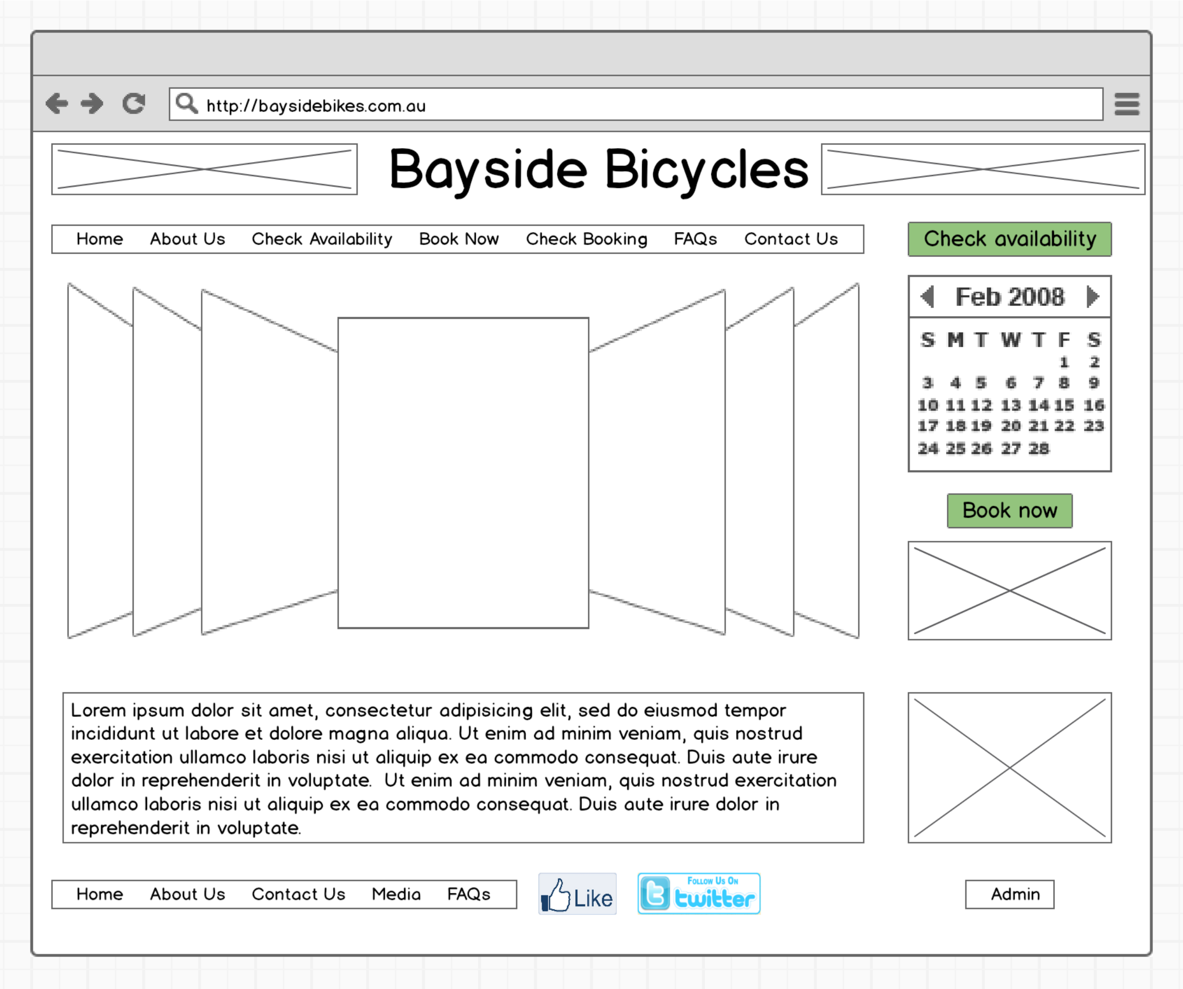
Persona Name and photo
Demographics - Gender, age, place of residence, Profession and field of work, Marital status, Financial status – fictional personal details to make more realistic
Personality - Hobbies, Favourite brands, Do they follow trends?, Media consumption habits – what social media do they use, hours spent online, What kind of gadgets do they use and how? Quote or slogan that captures the personality
Behaviour patterns, Goals, Skills, Attitudes, Frustrations or pain points, Environment they operate in
Product context information - Do they have previous knowledge about the company? In what context do they book bikes? What are their motivations for booking bikes? Why would they book bikes? Context specific details e.g. For a bike booking – what are their hobbies, fitness levels

Use a free online tool to create your persona

<u>Bayside Bicycles Mockups – General notes</u>

- The following mockups are a sample of the type of interfaces that you may have for some of the functions of the system
- You would also need a number of additional interfaces to ensure that you considered all the functionality
- We have also made particular design decisions that would need to be discussed further with the user before development:
    - Customer selecting one bike at a time … this works if you are only hiring a few bikes but would get very tedious for anything more than 4 bikes, so it really depends on how many bikes are generally hired by a customer.
- Is the confirmation process reasonable?
    - If the user wants to hire multiple bikes they cannot see what they have already selected once they click 'Next bike' – they should be able to see all the bikes and accessories they have selected and be able to modify it before confirming.
- When designing the interfaces, it is important to show sample error messages and confirmation messages. You do not need to show every message, however, you should identify at a general level the error handling and the confirmation messages.

Bayside Bicycles: Screen 1 – Bayside Bicycles Home page



http://baysidebikes.com.au
Bayside Bicycles
Home About Us Check Availability Book Now Check Booking FAQs Contact Us
Check availability
Feb 2008
S M T W T F S
Book now
Home About Us Contact Us Media FAQs
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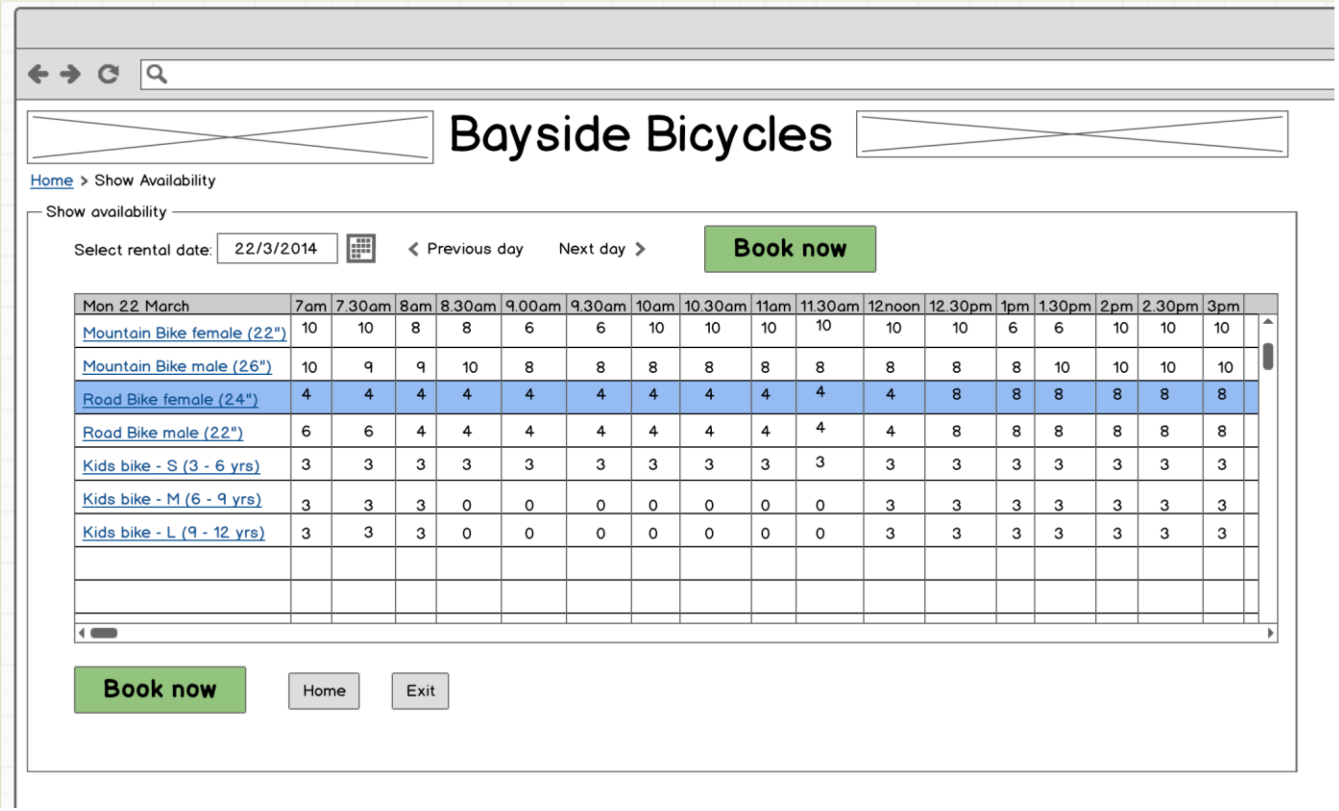
- The home page appears when a customer searches for Bike rentals in Melbourne or Bayside Bicycles
- It display images of our customers riding their bikes, and allows our customer to find out a little bit about us.
- It highlights the Check Availability and Book Now functions.
- When a customer clicks on 'Check Availability' it takes them to Screen 2. If they have selected a date, this date will be transferred to Screen 2.
- When a customer clicks on 'Book Now' it takes them to Screen 3.

Bayside Bicycles Screen 2 - Show availability



Select rental date: 22/3/2014

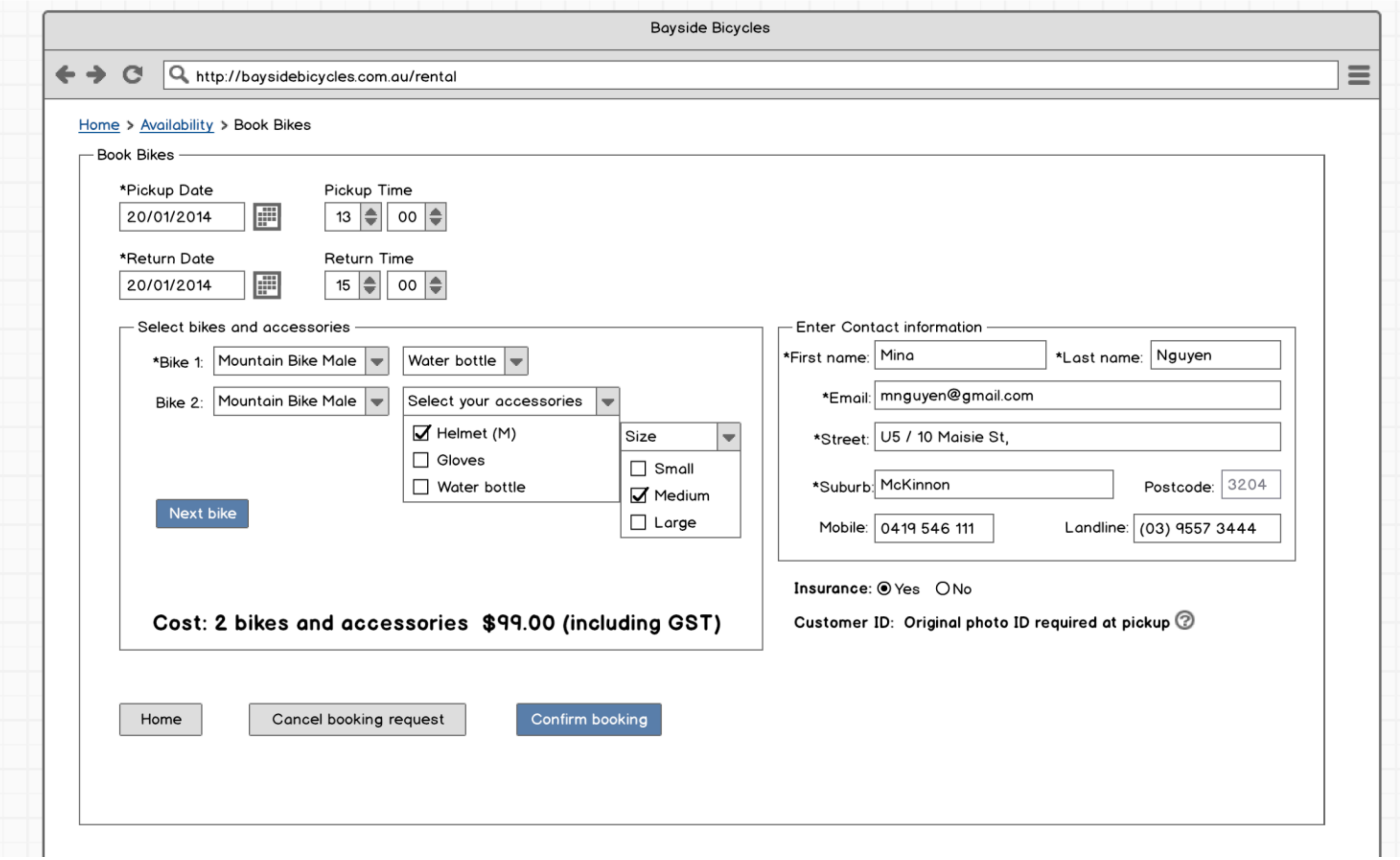
Mon 22 March	7am	7.30am	8am	8.30am	9.00am	9.30am	10am	10.30am	11am	11.30am	12noon	12.30pm	1pm	1.30pm	2pm	2.30pm	3pm
Mountain Bike female (22")	10	10	8	8	6	6	10	10	10	10	10	10	6	6	10	10	10
Mountain Bike male (26")	10	9	9	10	8	8	8	8	8	8	8	8	8	10	10	10	10
Road Bike female (24")	4	4	4	4	4	4	4	4	4	4	4	8	8	8	8	8	8
Road Bike male (22")	6	6	4	4	4	4	4	4	4	4	4	8	8	8	8	8	8
Kids bike - S (3 - 6 yrs)	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Kids bike - M (6 - 9 yrs)	3	3	3	0	0	0	0	0	0	0	3	3	3	3	3	3	3
Kids bike - L (9 - 12 yrs)	3	3	3	0	0	0	0	0	0	0	3	3	3	3	3	3	3

- This screen shows the availability of all the available bicycles for any given day. You can easily go to the previous day or next day.
- You can only book 6 months ahead, so dates beyond that are greyed out
- The numbers indicate the number of bikes available for rental
- The minimum time for rental is ½ hour
- Once the customer has viewed the availability for their specified dates, they can

… Go back to the Home page – Screen 1, by clicking Home or Exit.

… Go to the ‘Book Now’ page – Screen 3

Bayside Bicycles Screen 3 – Book Bikes



Bayside Bicycles

http://baysidebicycles.com.au/rental

Home > Availability > Book Bikes

Book Bikes

*Pickup Date: 20/01/2014

Pickup Time: 13 : 00

*Return Date: 20/01/2014

Return Time: 15 : 00

Select bikes and accessories

*Bike 1: Mountain Bike Male — Water bottle

Bike 2: Mountain Bike Male — Select your accessories

☑ Helmet (M)
☐ Gloves
☐ Water bottle

Size
☐ Small
☑ Medium
☐ Large

Next bike

Cost: 2 bikes and accessories $99.00 (including GST)

Enter Contact information

*First name: Mina

*Last name: Nguyen

*Email: mnguyen@gmail.com

*Street: U5 / 10 Maisie St,

*Suburb: McKinnon

Postcode: 3204

Mobile: 0419 546 111

Landline: (03) 9557 3444

Insurance: ● Yes ○ No

Customer ID: Original photo ID required at pickup

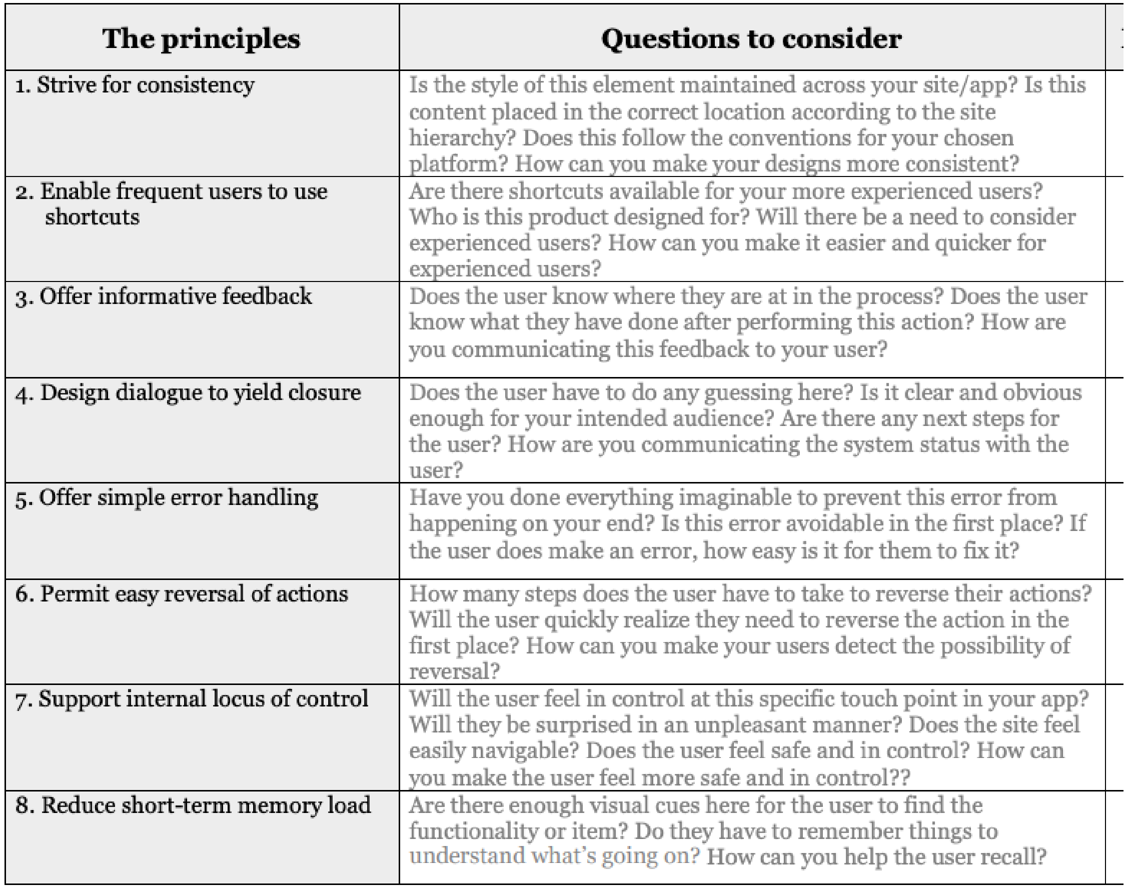
Home | Cancel booking request | Confirm booking

- This screen allows you to Book Bikes.
- If you have come from Screen 2 – Check availability, it will prefill the pickup and return date.
- For each bike you want to rent you have to select the bike from a drop down list – only available bikes will appear. Once the bike is selected, relevant, available accessories will be displayed. You can select a number of accessories. When an accessory is selected, you may have to select further information like the size. When you have finished entering information for a bike you can click on 'Next Bike' to add information for the next Bike or move to any other part of the screen.
- You can cancel your request at any time.

- When you click 'Confirm Booking', the system will check that all mandatory fields are entered. If they are not they will be highlighted and an error message will be displayed.
- If all required information is entered, a confirmation message will be displayed with the Booking no, and a confirmation email will be sent to the client with all the details of the booking, and information about how to access their booking from the website.
- The postcode is automatically retrieved from the suburb information.

Assessing your interface design – use Ben Shneiderman’s 8 Golden rules and Jakob Nielsen’s 10 heuristics to assess your design

Questions to consider for the 8 Golden rules:



The principles	Questions to consider
1. Strive for consistency	Is the style of this element maintained across your site/app? Is this content placed in the correct location according to the site hierarchy? Does this follow the conventions for your chosen platform? How can you make your designs more consistent?
2. Enable frequent users to use shortcuts	Are there shortcuts available for your more experienced users? Who is this product designed for? Will there be a need to consider experienced users? How can you make it easier and quicker for experienced users?
3. Offer informative feedback	Does the user know where they are at in the process? Does the user know what they have done after performing this action? How are you communicating this feedback to your user?
4. Design dialogue to yield closure	Does the user have to do any guessing here? Is it clear and obvious enough for your intended audience? Are there any next steps for the user? How are you communicating the system status with the user?
5. Offer simple error handling	Have you done everything imaginable to prevent this error from happening on your end? Is this error avoidable in the first place? If the user does make an error, how easy is it for them to fix it?
6. Permit easy reversal of actions	How many steps does the user have to take to reverse their actions? Will the user quickly realize they need to reverse the action in the first place? How can you make your users detect the possibility of reversal?
7. Support internal locus of control	Will the user feel in control at this specific touch point in your app? Will they be surprised in an unpleasant manner? Does the site feel easily navigable? Does the user feel safe and in control? How can you make the user feel more safe and in control??
8. Reduce short-term memory load	Are there enough visual cues here for the user to find the functionality or item? Do they have to remember things to understand what’s going on? How can you help the user recall?

Ben Shneiderman’s 8 Golden rules: http://www.cs.umd.edu/~ben/goldenrules.html

1. Strive for consistency.

Consistent sequences of actions should be required in similar situations; identical terminology should be used in prompts, menus, and help screens; and consistent colour, layout, capitalization, fonts, and so on, should be employed throughout. Exceptions, such as required confirmation of the delete command or no echoing of passwords, should be comprehensible and limited in number

2. Seek universal usability.

Recognize the needs of diverse users and design for plasticity, facilitating transformation of content. Novice to expert differences, age ranges, disabilities, international variations, and technological diversity each enrich the spectrum of requirements that guides design. Adding features for novices, such as explanations, and features for experts, such as shortcuts and faster pacing, enriches the interface design and improves perceived quality.

3. Offer informative feedback.

For every user action, there should be an interface feedback. For frequent and minor actions, the response can be modest, whereas for infrequent and major actions, the response should be more substantial. Visual presentation of the objects of interest provides a convenient environment for showing changes explicitly.

4. Design dialogs to yield closure.

Sequences of actions should be organized into groups with a beginning, middle, and end. Informative feedback at the completion of a group of actions gives users the satisfaction of accomplishment, a sense of relief, a signal to drop contingency plans from their minds, and an indicator to prepare for the next group of actions. For example, e-commerce websites move users from selecting products to the checkout, ending with a clear confirmation page that completes the transaction.

5. Prevent errors.

As much as possible, design the interface so that users cannot make serious errors; for example, gray out menu items that are not appropriate and do not allow alphabetic characters in numeric entry fields (Section 3.3.5). If users make an error, the interface should offer simple, constructive, and specific instructions for recovery. For example, users should not have to retype an entire name-address form if they enter an invalid zip code but rather should be guided to repair only the faulty part. Erroneous actions should leave the interface state unchanged, or the interface should give instructions about restoring the state.

6. Permit easy reversal of actions.

As much as possible, actions should be reversible. This feature relieves anxiety, since users know that errors can be undone, and encourages exploration of unfamiliar options. The units of reversibility may be a single action, a data-entry task, or a complete group of actions, such as entry of a name-address block.

7. Keep users in control.

Experienced users strongly desire the sense that they are in charge of the interface and that the interface responds to their actions. They don't want surprises or changes in familiar behaviour, and they are annoyed by tedious data-entry sequences, difficulty in obtaining necessary information, and inability to produce their desired result.

8. Reduce short-term memory load.

Humans' limited capacity for information processing in short-term memory (the rule of thumb is that people can remember "seven plus or minus two chunks" of information) requires that designers avoid interfaces in which users must remember information from one display and then use that information on another display. It means that mobiles should not require re-entry of phone numbers, website locations should remain visible, and lengthy forms should be compacted to fit a single display.

Jakob Nielsen's 10 Usability heuristics - https://www.nngroup.com/articles/ten-usability-heuristics/

1: Visibility of system status

The system should always keep users informed about what is going on, through appropriate feedback within reasonable time.

2: Match between system and the real world

The system should speak the users' language, with words, phrases and concepts familiar to the user, rather than system-oriented terms. Follow real-world conventions, making information appear in a natural and logical order.

3: User control and freedom

Users often choose system functions by mistake and will need a clearly marked "emergency exit" to leave the unwanted state without having to go through an extended dialogue. Support undo and redo.

4: Consistency and standards

Users should not have to wonder whether different words, situations, or actions mean the same thing. Follow platform conventions.

5: Error prevention

Even better than good error messages is a careful design which prevents a problem from occurring in the first place. Either eliminate error-prone conditions or check for them and present users with a confirmation option before they commit to the action.

6: Recognition rather than recall

Minimize the user's memory load by making objects, actions, and options visible. The user should not have to remember information from one part of the dialogue to another. Instructions for use of the system should be visible or easily retrievable whenever appropriate.

7: Flexibility and efficiency of use

Accelerators — unseen by the novice user — may often speed up the interaction for the expert user such that the system can cater to both inexperienced and experienced users. Allow users to tailor frequent actions.

8: Aesthetic and minimalist design

Dialogues should not contain information which is irrelevant or rarely needed. Every extra unit of information in a dialogue competes with the relevant units of information and diminishes their relative visibility.

9: Help users recognize, diagnose, and recover from errors

Error messages should be expressed in plain language (no codes), precisely indicate the problem, and constructively suggest a solution.

10: Help and documentation

Even though it is better if the system can be used without documentation, it may be necessary to provide help and documentation. Any such information should be easy to search, focused on the user's task, list concrete steps to be carried out, and not be too large.