**Heuristiken von Nielsen\* -**

1. **Visibility of system status**
   1. **Unsorted List**
      1. **Problem:** Order and additional information seem arbitrary
      2. **Occurrence:** For most list items
      3. **Frequency:** often
      4. **Effect:** Confusing to the user
      5. **Grading: 1**
      6. **Possible Solution:** Make sorting explicit, make additional information consistent
   2. **Sorted List**
      1. **Problem:** Order is implicit only
      2. **Occurrence:** List item page
      3. **Frequency:** Always
      4. **Effect:** Benefit of sorting only when reading the list in detail, thus greater mental workload
      5. **Grading: 1,2**
      6. **Possible Solution:** Make sorting and categories explicit
2. **Match between system and the real world**
   1. **Unsorted and sorted Simple List**
      1. **Problem:** categories are not explained to the user
      2. **Occurrence:**  on the goodbye screen the user gets information about the number of categories
      3. **Frequency:**  at the end of each shopping
      4. **Effect:**  the user is confused
      5. **Grading: 1**
      6. **Possible Solution:** delete the term from the goodbye screen
   2. **Sorted simple list, sorted grouped list** 
      1. **Problem:** User is not informed about the sorting criteria
      2. **Occurrence:** on list screen
      3. **Frequency:** often
      4. **Effect:** user can be confused if the sorting does not seem intuitive to him
      5. **Grading: 1,2**
      6. **Possible Solution:** Add information about sorting criteria
   3. **Grouped simple list**
      1. **Problem:** User is not informed about the meaning of different colors
      2. **Occurrence:** on list screen
      3. **Frequency:** often
      4. **Effect:** user can be confused if he does not recognize the different categories
      5. **Grading: 1**
      6. **Possible Solution:** Add heading for different categories
   4. **All Prototypes**
      1. **Problem:** Items are greyed out upon checking
      2. **Occurrence:** When checking an item
      3. **Frequency:** Always
      4. **Effect:** Real world shopping lists do not behave this way. Coupled with low contrast between greyed out and original state, makes detection of checked items challenging
      5. **Grading: 3**
      6. **Possible Solution:** Strikeout of checked items
   5. **All categorized variants**
      1. **Problem:** Inserted items are not appended at the end of the total list
      2. **Occurrence:** When adding an items
      3. **Frequency:** Often
      4. **Effect:** Loss of orientation
      5. **Grading: 4**
      6. **Possible Solution:** Animate the new item or the viewport
3. **User control and freedom**
   1. **All prototypes**
      1. **Problem:** Undo is not supported for checking items.
      2. **Occurrence:**  On the list screen
      3. **Frequency:** To check items is the main function.
      4. **Effect:** Users cannot un-check list entries they checked by mistake
      5. **Grading: 4**
      6. **Possible Solution:** Add undo button next to checked items
   2. **All prototypes**
      1. **Problem:** There is no return possibility from the goodbye screen to the list screen.
      2. **Occurrence:**  On the goodbye screen
      3. **Frequency:** seldom
      4. **Effect:** Users cannot un-check list entries they checked by mistake
      5. **Grading: 2**
      6. **Possible Solution:** Add return button to goodbye screen
4. **Consistency and standards**
   1. **All categorized variants**
      1. **Problem:** Shopping Cart Item might not be the optimal choice
      2. **Occurrence:** On the exit/finish button
      3. **Frequency:** Always
      4. **Effect:** Raise expectation of online shopping functionality
      5. **Grading: 1**
      6. **Possible Solution:** Use different icon
5. **Error prevention**
   1. **All prototypes**
      1. **Problem:** List items can be checked by mistake
      2. **Occurrence:**  Checking list items on list screen
      3. **Frequency:**  seldom
      4. **Effect:**  The user may not buy the mistakenly checked item
      5. **Grading: 3**
      6. **Possible Solution:** 
         1. Add confirmation dialog
         2. Increase padding between items
         3. Add undo function, so the mistake is reversible
6. **Recognition rather than recall**
   1. **All prototypes**
      1. **Problem:** The user is not instructed that items can be checked and how to do so
      2. **Occurrence:**  on list screen
      3. **Frequency:** often
      4. **Effect:**  user can easily forget an item
      5. **Grading: 1**
      6. **Possible Solution:** Add instructions to the welcome screen
   2. **All prototypes except grouped list**
      1. **Problem:** There is no hint that items might be hidden at the bottom and that the list can be scrolled vertically
      2. **Occurrence:**  on list screen
      3. **Frequency:** often
      4. **Effect:**  user can easily forget an item
      5. **Grading: 4**
      6. **Possible Solution:** Add hint that there are more items below the bottom
7. **Flexibility and efficiency of use**
   1. **All prototypes except unsorted simple list**
      1. **Problem:** User cannot change the sorting
      2. **Occurrence:** on list screen
      3. **Frequency:** often
      4. **Effect:** user can be annoyed if the sorting is wrong. Inadequacy for the users’ needs
      5. **Grading: 3, 3**
      6. **Possible Solution:** 
         1. Add reordering functionality e.g. via drag and drop
         2. Add menu to select from different sorting
      7. **Note:** The sorting in the prototypes is created with Wizard of Oz functions and is meant to be in perfect alignment with the sorting in the supermarket.
   2. **All prototypes**
      1. **Problem:** No expert-user interactions available
      2. **Occurrence:** N/A
      3. **Frequency:** Always
      4. **Effect:** No performance improvement
      5. **Grading: 1**
      6. **Possible Solution:** possibilities: Checking of multiple items by swiping over their checkboxes
8. **Aesthetic and minimalist design**
   1. **All prototypes**
      1. **Problem:** Welcome screen is not minimalistic
      2. **Occurrence:** Welcome screen
      3. **Frequency:** every time the screen is shown
      4. **Effect:**  user is disturbed by unnecessary information
      5. **Grading: 2**
      6. **Possible Solution:** remove unnecessary information
   2. **All prototypes**
      1. **Problem:** Goodbye screen is not minimalistic
      2. **Occurrence:**  Goodbye screen
      3. **Frequency:** every time the screen is shown
      4. **Effect:**  user is disturbed by unnecessary information
      5. **Grading: 2**
      6. **Possible Solution:** remove unnecessary information
9. **Help users recognize, diagnose, and recover from errors**
10. **Help and documentation**
    1. **All prototypes**
       1. **Problem:**  There is no help offer
       2. **Occurrence:** every screen
       3. **Frequency:** every time
       4. **Effect:** A confused user can get no help and a new user gets no instructions
       5. **Grading: 4 , 4**
       6. **Possible Solution:**  Add help button with instructions to each page

\* <http://www.nngroup.com/articles/ten-usability-heuristics/>

1. **All prototypes**
   * 1. **Problem:**
     2. **Occurrence:**
     3. **Frequency**
     4. **Effect:**
     5. **Grading:**
     6. **Possible Solution:**