CMPT 363 Assignment 5: Final Prototypes and Evaluation

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Section 1: Overview of Final Design

Trip16 is a trip planning mobile application for those who enjoy travelling and learning about new places. The final design of this application is a medium-fidelity prototype created by Axure. The prototype contains the main structure of the application such as login, profile and plan system. It also includes the major learning feature and social component in detail. The major learning feature is discovering activities which generate list of activities about the destination and users can choose their interested activities by simple action which is swiping left or right. The social component is sharing itineraries features which allow user to share their travel plan and help other users make a new plan quickly.

Section 2: Result of Analytical Evaluation

Heuristic Evaluation

Four heuristics evaluations were done by members of the team. The evaluations were based on Nielsen's 10 key heuristics:

1. Visibility of system status
2. Match between system and the real world
3. User control and freedom
4. Consistency and standards
5. Error prevention
6. Recognition rather than recall
7. Flexibility and efficiency of use
8. Aesthetic and minimalist design
9. Help users recognize, diagnose, and recover from errors
10. Help and documentation

Each evaluation was performed by exploring the medium fidelity prototype while seeking to identify potential issues related to the 10 key heuristics. When an area of improvement is identified, a severity rating is assigned to it using a 0 to 4 scale as follows:

0 - don't agree that this is a usability problem
1 - cosmetic problem
2 - minor usability problem
3 - major usability problem; important to fix
4 - usability catastrophe; imperative to fix

If a potential solution to an issue is presented, the new severity rating after the fix is implemented is also included. The main findings will be summarized by category.

Visibility of system status

In the Discover feature of the application, the effect of swiping activities left and right had two issues. The swiping itself did not provide the user any feedback as to what their gesture input would do. This could be solved by adding an animation to show the effect of the user's input as they are performing the gesture.

After the fix this would go down to a rating of 0. Another issue with the Discover feature was poor feedback of whether the event was added or skipped. The feedback was given in a small text box on the next page displayed, but this would be confusing for first time users. A potential fix would be to show a brief screen or animation of the event being added or skipped.

Match between system and the real world

This heuristic was satisfied.

User control and freedom

One evaluator stated that the discover feature should allow users to undo event additions and skips. This is in line with giving users more control over their experience as, for example, they may want to add an event they accidently skipped.

Consistency and standards

In the ratings system, check marks are used to show how highly an itinerary or activity is rated when it is more common for stars to be used. This is a minor issue that does not have a large impact on the application overall.

Error prevention

In order to prevent errors in the various forms of the application, it would be beneficial to change certain input fields to allow only specific types of input either through visual feedback or constraining the input. For example, number-only inputs could have their text fields changed to a numpad only input field.

Recognition rather than recall

This heuristic was satisfied.

Flexibility and efficiency of use

This heuristic was satisfied.

Aesthetic and minimalist design

In the discover feature, having the rating of activities on top of their picture makes it difficult to see the rating depending on the colours of the picture. Making the rating more distinct from the pictures is necessary. Also, the text in many parts of the application are too small for mobile use and should be increased in size.

Help users recognize, diagnose, and recover from errors

There are error messages missing for many invalid inputs and actions. When an error occurs, there is no sense that the problem recognizes the error. This is a severe issue and error messages and better error prevention must be implemented.

Help and documentation

Outside of the instructions provided for the Discover feature, there is no help documentation currently implemented. A solution would be to implement contextual help within the application along with a full tutorial and help documentation.

Cognitive Walkthrough

The Task

The task used in cognitive walkthrough is making a 3-day trip plan to Tokyo using discovery feature. The user plan to stay in Tokyo from March 10th to March 12. He do not have time to do research and have no experience travelling in Tokyo. He wants to visit 6 places that he likes in these days and make a reasonable schedule quickly.

The following actions is needed:

1. From the Home page, press the “Plan” button at the bottom of the screen.
2. To make new plan, press the “+” button at the top right corner.
3. Press “Make Plan”.
4. Type “Tokyo” in place to travel.
5. Type March 10 for “Start date” and March 12 for “End date”.
6. Type “6” to the number of activities you will to visit.
7. Press “Go” at the top right corner to proceed.
8. Swipe to the right to continue from the instruction page.
9. Swipe right (Tokyo Tower)
10. Swipe right (Ueno Park)
11. Swipe left (Sensoji Temple)
12. Swipe left (Tokyo Disneyland)
13. Swipe right (Nakamise Street)
14. Swipe left (Mount Takao)
15. Swipe right (Skytree)

16. Swipe right (Akihabara)
17. Swipe right (Tokyo National Museum)

(For the mobile action ”Swipe”: click, hold, and swipe across the app screen using your mouse or touchpad.)

List of Problems and Suggestions

[CW - 1] [Rating Stars]

The rating stars do not fit well with the image. The rating stars will be difficult to see if the image has the same color as the stars. Also, the system does not specify what is the maximum rating of rating stars, it is hard for user to consider the quality and standard of activities. The possible suggestion will be seperate the rating star and image by moving the rating stars to the bottom of the image.

[CW - 1] [Progress of Discovery Feature]

The interface does not emphasize the progress status of the discovery activities. The user is difficult to find out how many activities have been chosen. The possible suggestion will be making a percentage of the progress or creating a progress bar to represent the number of chosen activities out of total number of activities that users want to visit.

[CW - 2][Start plan]
On the “start plan” page, the sentence: “You can make your plan with two great options:”does not make sense because there is only one option “Make plan” to choose. It is confused. The solution will be change the sentence “You can make your plan by click this:”.

[CW - 2] [Transition of Discovery Feature]
The “Activity added” and “Activity skipped” are not obvious. The interface uses swipe left/right to choose the place to go or skip the place but it does not provide clear feedback whether the activity is chosen or skipped. It difficult for user to ensure whether the activity that he like has been chosen. The possible solution will be fill the panel of the pop-ups window with sage-green.

Summary

Two cognitive walkthrough evaluation were done by members of the team. Both evaluation were successfully finished by team members without training for given task. The evaluation prototypes is a medium-fidelity Axure prototype of Trip16. The task is making a 3-days trip to Tokyo using discovery activities feature. The evaluation uses the task description to complete the task using prototypes step by step. For each step, we evaluate the visibility and clarity of features, the correctness of words and how quickly a users can learn and successfully use this interface.

Some problem makes the interface and features confused. The major problem found in this evaluation is the interface does not provide clear feedbacks for the progress when user discover the activities. The suggested solution will be adding progress bar or percentage to represent the number of chosen activities out of total number of activities, and provide clear view transition between two activities. In addition, some color and layout problem occurs in our prototype such as the overlapping rating stars and activities image. The possible solution will be moving the rating star to the bottom of the image.

Section 3: Rationale for Design Changes

To make the app become more user-friendly and perform with more robustness, there are minor improvements to the major tasks and functions. For each major tasks of our app, the improved version contains the following ability listed in point forms.

Plan on your own

- User can now share his/her completed schedule to the app platform using the share "button" from a plan list page. The instructions are in the README file.
- A warning pop up is implemented to destination and place setting page to notify users whether there is anything wrong with his/her inputs.
- Icon pictures of the events and places are embedded along with their schedule are added to polish the branding of the places appeared from the app.
- The buttons from the places/events selection setting are reformatted. Previously, one of the "cancel" button implemented to allow user to delete a chosen place. The new version added a "delete" button to achieve this ability. The "cancel" button is redirected such that the user is returned to his/her original schedule.
- The colour of the date bar, originally green, is changed to black and white to maintain consistency with the app's interface colours.

Make a plan from another user's

- The circle add button on the bottom right side of the plans and placed description is changed so that it consistently follows along with other add buttons appeared in the "Plan on your own" function.
- The star and plus symbol from the list of places in the search page are removed. Feedbacks from the last assignment suggested that trivial features and options can be omitted and turn the focus to the functions related to the main tasks.

Bugs and Errors Fix

- An error with the calendar pop up from place selection is fixed. Previously, the calendar button shows the calendar behind the buttons below, such that a portion of the dates are covered by the buttons and cannot be clicked.
- Various bugs from Gaby Sanchez and East Pearl Tower's Page is fixed. Previously, The comment bar at the bottom of the screen do not disappeared when the user switched away from the comment section.
- The thumbs up/down options in the comment section are shrunken in size, so that the user can focus on the feedbacks made by other users.

Section 4: Appendices

Heuristics Evaluation of Trip16

By Daniel Peng **Date** April 10, 2018

1. Visibility of system status

Always keep users informed about what is going on.

Provide appropriate feedback within reasonable time.

Evaluation

The overall visibility of the system status is good. The application provides a good notification of the current page that the user stays in or the function the user using by presenting the status on the top bar. And the top bar stick at top.
Status like event added, plan added, will show up and give feedback to the user after the operation. It also has a waiting page that told the user the application generating the trip plan. On the discovery page should inform the user how many page option is left.
Severity level-2

The swipe function on the discovery part is not that ideal, the feedback of the selection is not obvious.
Severity level-2

2. Match between system and the real world

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.

Evaluation

No problem founded, all terminology is design in user's language, and the language is for user perspective. All information is display on an appropriate place and follow logical order.

3. User control and freedom

Users often choose system functions by mistake.

Provide a clearly marked "out" to leave an unwanted state without having to go through an extended dialogue.

Support undo and redo.

Evaluation

The application provides a good control structure for the user, all page has a back-ward or redo button to return to the previous page, or user can navigate the page by bottom's menu bar.

4. Consistency and standards

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

Follow platform conventions.

Evaluation

Yes, all the operation step and terminology are consistent. Can't find any ambiguous thing that miss guide the user.

5. Error prevention

Even better than good error messages is a careful design which prevents a problem from occurring in the first place.

Evaluation

When user enter the invalid date during the trip plant and editing plan, the application can still go through and no warning or notification will appear.
Severity level-2.

6. Recognition rather than recall

Make objects, actions, and options visible.

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.

Evaluation

The overall interface is simple and straight forward. All function is visible and easy to recognize instead of recall. Most of the function like add and edit are representing by appropriate icon. For the function like discovery, there is a full instruction to inform the user how to operate the function of the application.

7. Flexibility and efficiency of use

Accelerators -- unseen by the novice user -- may often speed up the interaction for the expert user so that the system can cater to both inexperienced and experienced users.

Allow users to tailor frequent actions.

Evaluation

The plan page displays all trip plan of the user like completed plan, draft plan, ongoing plan, and future plan. There is also shortcut for user to view the plan and edit the plan.

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.

Evaluation

The overall graphic design is simple, and the color choice is appropriate. Most of the element of the application are grouped in separate page by its functionality and its property.
Some part of the home page is duplicate to the plan page that they both have the current plan section. Which can be eliminate.
Severity level-2.
The star rating on the discovery part might be hard to see if the picture have similar color.

Severity level-2

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

Expressed in plain language (no codes)

Precisely indicate the problem

Constructively suggest a solution.

Evaluation

No error message is provided, for the application malfunction.
Add some error message like application crash, internet problem, or invalid input, might help to user to recover from the error.
Severity level-4

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.

Help information should be easy to search, focused on the user's task, list concrete steps to be carried out, and not be too large.

Evaluation

Most of the function have help provided.
But no specific documentation for the overall application which guide the user to operate the application.

Heuristics Evaluation of Trip16

By [Zhengjun Huang] **Date** [April 10]

1. Visibility of system status

- **Always keep users informed about what is going on.**

- **Provide appropriate feedback within reasonable time.**

Evaluation

not satisfied
The “GO” button on the destination page is not obvious, would be better to have the button at the bottom. This does not fit with user’s mental model.
severity rating: 2

2. Match between system and the real world

- **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.**

Evaluation

satisfied (the schedule system is similar to the schedule in real world)

3. User control and freedom

- **Users often choose system functions by mistake.**

- **Provide a clearly marked "out" to leave an unwanted state without having to go through an extended dialogue.**

- **Support undo and redo.**

Evaluation

satisfied (undo support)

4. Consistency and standards

- **Users should not have to wonder whether different words, situations, or actions mean the same thing.**

- **Follow platform conventions.**

Evaluation

Satisfied (label, button, font, color and wording is consistent)

5. Error prevention

- **Even better than good error messages is a careful design which prevents a problem from occurring in the first place.**

Evaluation

not satisfied
Should disable the “Go” button if not all required input is entered.
severity rating: 3

6. Recognition rather than recall

- **Make objects, actions, and options visible.**

- **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.**

Evaluation

satisfied (recent search, favorite itinerary)

7. Flexibility and efficiency of use

- **Accelerators -- unseen by the novice user -- may often speed up the interaction for the expert user so that the system can cater to both inexperienced and experienced users.**

- **Allow users to tailor frequent actions.**

Evaluation

Satisfied (user can go around different modules quickly with the navigation bar at the bottom of almost every page)

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.**

Evaluation

Satisfied (overall, the prototype looks good, because only a few fonts and colors are used)

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

- **Expressed in plain language (no codes)**
- **Precisely indicate the problem**
- **Constructively suggest a solution.**

Evaluation

not satisfied
User can type characters in a time field.
Start date later than end date is not rejected.
severity rating: 3

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.**
- **Help information should be easy to search, focused on the user's task, list concrete steps to be carried out, and not be too large.**

Evaluation

not satisfied
There is no documentation about the system.
severity rating: 2

Heuristics Evaluation of Trip16

By Jason Xu **Date** April 7th, 2018

1. Visibility of system status

Always keep users informed about what is going on.

Provide appropriate feedback within reasonable time.

Evaluation

[1-visibility][severity 3][fix 0]
The interface does uses swipe left/right to choose the place to go in discover mode, but it does not provide clear view transition between two places. It hard to informed user whether the place has been swiped to left or right.

2. Match between system and the real world

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.

Evaluation

The interface uses language from users' perspective and does not contain system-oriented languages.

3. User control and freedom

Users often choose system functions by mistake.

Provide a clearly marked "out" to leave an unwanted state without having to go through an extended dialogue.

Support undo and redo.

Evaluation

The application allows to edit the trip plan which includes changing activities, dates on schedule.

4. Consistency and standards

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

Follow platform conventions.

Evaluation

The application uses same words to represent the same concept such as “plan”, “Activities” etc.

5. Error prevention

Even better than good error messages is a careful design which prevents a problem from occurring in the first place.

Evaluation

[5- error prevention][severity 3][fix 0]

The interface does not provide the confirmation message after the activities is added. People may add some activities to plan by mistakes. The suggestion would be showing a pop up window to make user confirm to add the activities to plan.

6. Recognition rather than recall

Make objects, actions, and options visible.

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.

Evaluation

The interface choose the date by applying the calendar rather than typing the date. It help user to recognize the date rather than recall.

7. Flexibility and efficiency of use

Accelerators -- unseen by the novice user -- may often speed up the interaction for the expert user so that the system can cater to both inexperienced and experienced users.

Allow users to tailor frequent actions.

Evaluation

The interface uses simple actions to handle frequent actions in discovery feature, which add the activities to plan or skip the activities by swiping right or left.

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.

Evaluation

[8 – Aesthetic and minimalist design][severity 3][fix 0]
The rating star and image of the activities card overlaps. The color of rating stars might have the similar color with activity image, which makes difficult to see the rating of the activities. It is better to separate the rating stars and image rather than overlapping together.

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

Expressed in plain language (no codes)

Precisely indicate the problem

Constructively suggest a solution.

Evaluation

The application does not design the help system.

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.

Help information should be easy to search, focused on the user's task, list concrete steps to be carried out, and not be too large.

Evaluation

[10-help][severity 2][fix 0]
The text-based instruction of discovering place does not highlight the key points of the instruction such as the word “Swipe left”, “Swipe right”. It is better to apply bold font for key words in instruction and users can understand the feature quickly.

Heuristics Evaluation of Trip16

By Hans Kim **Date** April 9, 2018

1. Visibility of system status

Always keep users informed about what is going on.

Provide appropriate feedback within reasonable time.

Evaluation

[1-visibility][severity 2][fix 0]
In the discover feature, the user cannot see how many activities they have approved so far. There could be a way of summarizing activities added during the process.

[1-visibility][severity 3][fix 0]
In the discover feature, it is hard to see whether an activity was added or not upon swiping. Perhaps there could be a better visual indication of this.

2. Match between system and the real world

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.

Evaluation

[1-match system and real world][severity 1][fix 0]

Ratings for itineraries and activities should use stars instead of checkmarks to show how highly people rate the itinerary or activity.

3. User control and freedom

Users often choose system functions by mistake.

Provide a clearly marked "out" to leave an unwanted state without having to go through an extended dialogue.

Support undo and redo.

Evaluation

[1-user control][severity 2][fix 0]Should allow users to undo actions in the Discover feature if they accidently add or skip an activity incorrectly.

4. Consistency and standards

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

Follow platform conventions.

Evaluation
[1-consistency][severity 2][fix 0]
Editing “Drafts” on the Plan page should use the same edit icon as the “Soon” trips.

5. Error prevention

Even better than good error messages is a careful design which prevents a problem from occurring in the first place.

Evaluation
[1-error prevention][severity 2][fix 0]
Some input fields in forms should be constrained to number only inputs like a dropdown menu of possible values or text-only numpad input option.

6. Recognition rather than recall

Make objects, actions, and options visible.

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.

Evaluation
[1-recognition rather than recall] [severity 2][fix 0]
Users should be reminded what the different swipe gestures do in the Discover feature either by providing visual feedback when they perform the action or by giving reminders during use.

7. Flexibility and efficiency of use

Accelerators -- unseen by the novice user -- may often speed up the interaction for the expert user so that the system can cater to both inexperienced and experienced users.

Allow users to tailor frequent actions.

Evaluation
Heuristic satisfied

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.

Evaluation

[1-aesthetic][severity 3][fix 0]
Most of the text in the application are too small for mobile use. Making the text larger overall will improve legibility on devices with smaller screens.

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

Expressed in plain language (no codes)

Precisely indicate the problem

Constructively suggest a solution.

Evaluation

[1-error help][severity 4][fix 0]
Missing error messages from several forms in the application. Must provide more checks and feedback for incorrectly filled out forms.

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.

Help information should be easy to search, focused on the user's task, list concrete steps to be carried out, and not be too large.

Evaluation

[1-help and documentation][severity 4][fix 0]
No help documentation other than a short text tutorial on how to use the Discover feature. Can provide contextual help or more extensive help documentation to combat users running into issues.