INFORMATICS 131

HOMEWORK 2: COGNITIVE WALKTHROUGH

Group 18: Ankit Jain, Minjae Shim, Trinity Joyce Blackmon

Informatics 131 – Homework 2

Introduction

For the Cognitive Walkthrough assignment, our group chose to evaluate the travel booking website – Expedia. Expedia is a travel booking website which offers its users several options of booking hotels, flights, car or a bundle through the ease of their homes. The purpose of this cognitive walkthrough is to analyze the Expedia website as a product for the user and mainly in terms of usability.

A typical cognitive walkthrough is constituted with the following steps:

Step 1: Define the inputs to the walkthrough
Step 2: Convene the analysis team
Step 3: Walk through the action sequences for each task
Step 4: Record critical information
Step 5: Revise the interface to fix the problems

Input Definitions
User Definition

- User is a student at the University of California, Irvine
- User has lived in state of California since birth
- User is visiting family in New York during Independence Day weekend
- User visits family in different states of the country every year for Independence Day weekend
- User travels to various countries every summer
- User is familiar with Expedia and other travel booking websites
- User's work associated with academics and otherwise is mostly based on computers and the internet

User Task Definition

User aims to make a booking with the following features:

- Hotel Room for two individuals
- Check in Date: July 3rd, 2019
- Check out Date: July 5th, 2019
- Location: Manhattan, New York City
- Special Request: Accessible and Wheelchair Friendly

Action Sequence

Note: Appendix includes explanation of every individual step with related screenshots

1. Click 'hotels'
2. Type 'Manhattan'
3. Select Manhattan, New York, New York from the drop-down menu suggestions
4. Click arrow to reach month of July 2019
5. Put in check in date as July 3th, 2019
6. Change defaulted check out date to July 5th, 2019
7. Click Search
8. Scroll and click "Hotel" as property type
9. Scroll and click "in room accessibility", "accessible bathroom" and "roll in shower"
10. Select desired hotel
11. Scroll down, select room type and click reserve
12. Click pay at property as payment option
13. Enter name and phone number
14. Click special requests for accessibility
15. Enter Special requests
16. Enter card information and billing address
17. Enter email address and Expedia account details if applicable
18. Select Complete Booking

Assumptions

- User is adequately experienced with travel booking websites and computers
- User doesn't have a fixed budget and is open to all price ranges
- Other than the filters specified in the user task definition, there are no other requirements required by the user

Assignment Process

For this assignment, our team met twice, once during discussion and once outside discussion where typically sat down and two of us (Mijae and Trinity) went through the website as typical users and answered questions asked by the facilitator (Ankit), who took down notes during the process. During this process, as a group we collectively thought of what could be improved for the website in terms of usability and noted them down. After that we ranked the problems in terms of usability and difficulty of use and finalized on our top 5 findings, which we give our insights on in the Findings section.

Findings

1. **Specifying "special/accessibility requests" again in the "Payment" page**
   a. **Problem Description**
      i. Although users specifically searched for hotels that are accessible using the filter in the previous page, users have to request for certain accessibility, such as roll-in shower and in-room accessibility, yet again. Expedia treats these accessibility requests as optional even though the user specifically searched for accessible hotels. This can be a problem for users if they miss this small optional section.
   b. **Assumptions**
      i. It is assumed that some of the users can be fairly new to Expedia and that users have basic knowledge and experience with computers.
   c. **Why is it a problem?**
      i. Users are not in control of the interface. Even though users filtered out hotels without accessibility options, they still have to specify again in the payment page. Users can be surprised to find out that the room they booked do not come with expected accessibility even after they used the filter in their search.
      ii. Having "special/accessibility requests" as a small minimized optional section is not suitable for universal usability. Elderly users or users who are not familiar with the website can easily miss this subsection.
   d. **Who are affected?**
      i. Potentially all users who are requesting special/accessibility accommodation are affected by this problem.
   e. **Magnitude of the impact**
      i. This problem can potentially be disastrous for certain users, especially for users in wheelchairs. Some users could just be annoyed that they must specify accessibility again. However, users who accidentally skip this subsection could realize on the day of their check-in that the room they booked does not have specifications they wanted.
   f. **Solution**
      i. When users click on a hotel after they specified accessibility filter in the search page, Expedia should only display rooms that actually match user's accessibility requirements without making accessibility requests optional. This guarantees that users are booking the correct room without any uncertainty.

2. **No Easy Reversal of Actions, If the user clicks on a room and decides to go back a page, they are forced to re-type everything**
   a. **Problem Description**

       i.   When the user clicks a hotel choice to view the details of a hotel and then hits the back button to go back to the list, their previous selections for narrowing the search have to be re-entered.

b. Assumptions

       i.   We are assuming that most people would have to look at the details for more than one hotel before making a final decision.

c. Why is it a problem?

       i.   This does not allow for easy reversal of actions. Accidentally clicking into a hotel's details would probably be frustrating for the user since they would have to re-type and re-enter all of their preferences, rather than having them already saved. This also makes the memory load higher on the user, because every time they re-enter the preferences they would have to remember everything they entered the previous time.

d. Who are affected?

       i.   A vast majority of users would be affected, since most people would need to look at multiple options before making a final booking decision.

e. Magnitude of the impact

       i.   This could not only be incredibly frustrating for the user, but has the potential to greatly slow down the search process, depending on how many extra filters they used in their search.

f. Solution

       i.   When a user makes a hotel search, the interface should save these preferences until they are cleared, or the tab is closed. If the user is logged into an account these should be saved with the account.

3. **Initial search option tab on the homepage is defaulted to previous search**

   a. Problem Description

       i.   The search menu in the homepage is defaulted to the user's previous search. For example, if the user searched for flights last time, the search option will be defaulted to flights. If the user is not new to the website, it defaults to "Bundle and Save".

   b. Why is it a problem?

       i.   Users should have the control to choose the search option in the homepage. For example, this can easily cause frustration or confusion for users when they realize later in the payment process that they searched for flights and hotel room instead of just hotel room. Users might buy something they did not intend to.

   c. Who are affected?

       i.   All users who use Expedia will be affected by this default search option. However, it will tend to have greater effect on novice users than expert users.

   d. Magnitude of the impact

i.   This problem will most likely be a moderate annoyance for most users. Most users will easily figure out early in the searching stage that their searching option is incorrect. Frequent users of the website should figure out that the search option defaults to their previous search option.

ii.   For users who are not familiar with booking websites, this can cause a bigger problem as this can confuse users as to what they are actually buying. Confusion can intimidate new or novice users and discourage them from the website. In the worst case, users might accidentally purchase an additional unwanted item.

e. **Solution**

i.   Instead of having a default search option, Expedia can allow users to specify the search option themselves. This way, users are in control to search for their desired result.

4. **Problem Four: Result shows apartments, hostels, etc. as opposed to just hotels**
   a. **Problem Description**

   i.   When the user makes a search for hotels, many housing types that do not classify as hotels are shown. This includes hostels, lodges and apartments.

   b. **Why is it a problem?**

   i.   The option "Hotels" is misleading. The user may log on to Expedia and think that they can only book a hotel through it and not a hostel. On the other hand, users who only want to consider booking a hotel are inconvenienced with irrelevant search results that can only be taken away by further filtering the search.

   c. **Who are affected?**

   i.   Most users who are using the site to book lodging will be affected. Specifically, those booking in areas that have a wide variety of lodging available. Novice users might accidentally book a place which isn't really a hotel.

   d. **Magnitude of the impact**

   i.   This is most likely only a minor inconvenience for most users, as generally there will be more hotels in the search than other lodging. However, this could deter people who want to book apartments or guesthouses because they wont even know that they have the ability to do so through Expedia.

   e. **Solution**

   i.   The label for this signifier could be changed to something more broad such as "Lodging" so that users don't think that only hotels are available.

5. **Repetition of 'Reserve' Button on Hotel Page**
   a. **Problem Description**

   i.   There is 'Reserve' button on top of the page next to the hotel details, and there are multiple buttons next to each type of room offered by the hotel.

b. Why is it a problem?

    i.   This is a problem because the first button isn't doing what it is supposed, i.e. reserve a room in hotel and is misleading to what it signifies, when it simply scrolls you down to the different type of rooms upon selecting it.

c. Who are affected?

    i.   All Expedia users, but specifically novice users might be confused and misled due to the repetition of this button, whereas more experienced users might directly scroll to the actual reserve buttons which carry out the actual reservation action.

d. Magnitude of the impact

    i.   The impact of this issue is minor mainly because the initial button simply leads you to the next set of buttons, but a novice user may believe that their reservation is complete and may be confused as to why the reservation is still incomplete.

e. Solution

    i.   A solution to this would be to simply change the text on the initial Reserve button to 'Select Room Type'. This way the affordance is properly signified by the button and the design is more consistent.

Appendix

Action Sequence Depiction
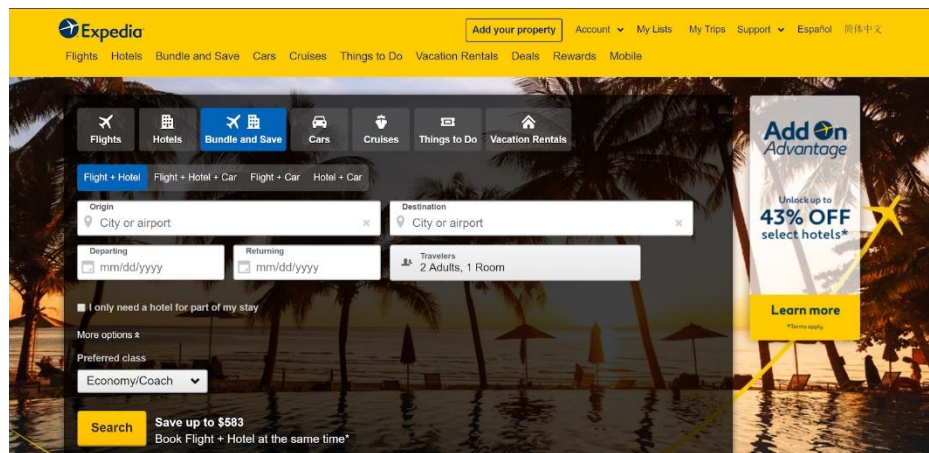
1. **Click "hotels"**

   a. The user's goal is to specify that he/she wants to book a hotel, not a flight along with a hotel.

   b. Yes, there is a tab that specifies 'hotel' which is to be selected in order to move forward

   c. Yes, it has a visual of a hotel on the tab. This follows one of the ten usability heuristics, matching between the system and the real world.

   d. When the user clicks on the hotels tab, the website provides appropriate feedback by highlighting the tab in with blue so there is good feedback given through the blue color serving as a signifier show visibility of system status. They have the option of redoing/undoing the option by simply selecting the other tabs.
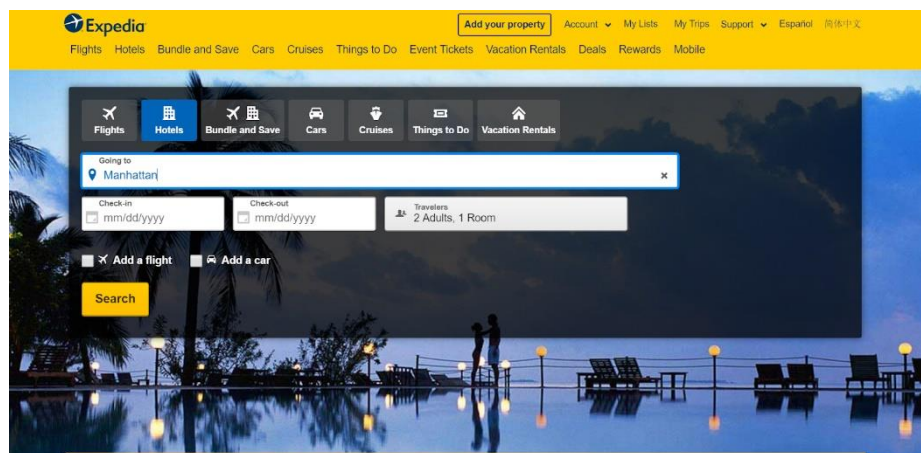
2. **Type Manhattan**

a. The user's goal in this action sequence is to specify the desired location of the hotel, in this case Manhattan.

b. The user can easily specify his or her search by using the search bar.

c. Users can easily recognize that they can use the search bar to narrow down their search. The search bar has a number of signifiers as it has the icon or logo for location and it also has titles such as "Going to", "Destination", and "Hotel name".

d. The interface gives users great feedback when the user clicks on the search bar as it is outlined and highlighted with blue with the cursor blinking, indicating that the user can type.
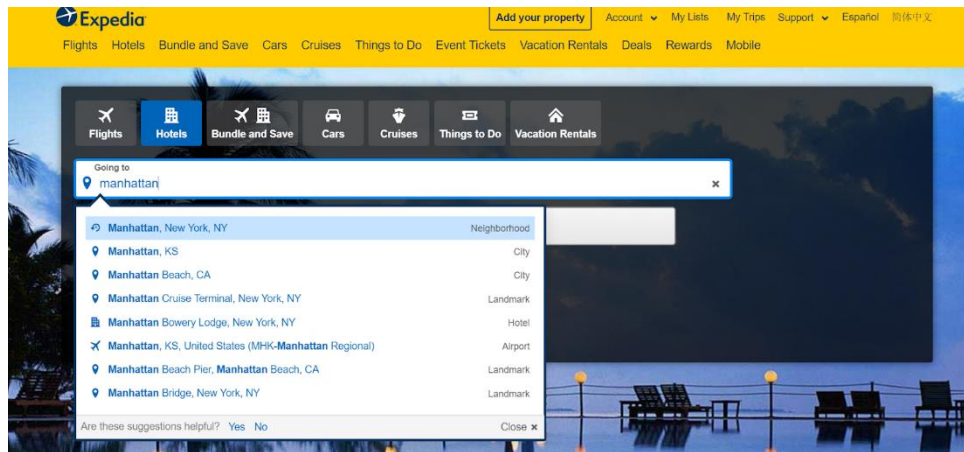
3. **Select Manhattan, New York, New York from the drop-down menu suggestions**

a. The user's goal is to specify the desired location as Manhattan, New York, New York, not just Manhattan.

b. As the user types, the interface shows recommendations from the user's search as it tries to predict the location that the user is trying to type.

c. Once the user sees the recommendations, he or she will read and recognize that the interface is making it easier for the user. The recommendations are in a drop down menu fashion so they will recognize that they have to look for their desired location and click on it once they find it.

d. When the user hovers over the suggestion "Manhattan, New York, NY", it is highlighted with blue, signifying that the user should click on it. Once they click on it, the search bar now includes the "Manhattan, New York, NY".
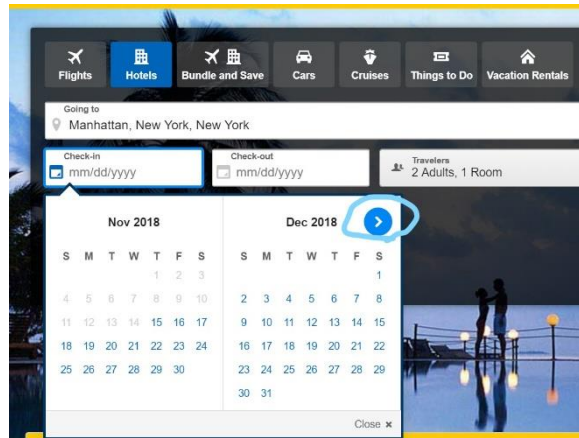
4. **Click arrow to reach month of July 2019**

   a. The user's goal is to find the correct month of the future check-in in Manhattan. Since the calendar is set to default at current month, the user needs to click through the calendar to reach July 2019.

   b. There are arrows on the calendar that users can use to navigate through the calendar

   c. The arrows match the natural mapping of human's cognition as the right arrow suggests that the calendar will show the next month while the left arrow will show the previous month.

   d. When users hover their mouse cursor over the arrows, the arrows respond by becoming lighter in color. Also once users click the arrows, the calendars switch.
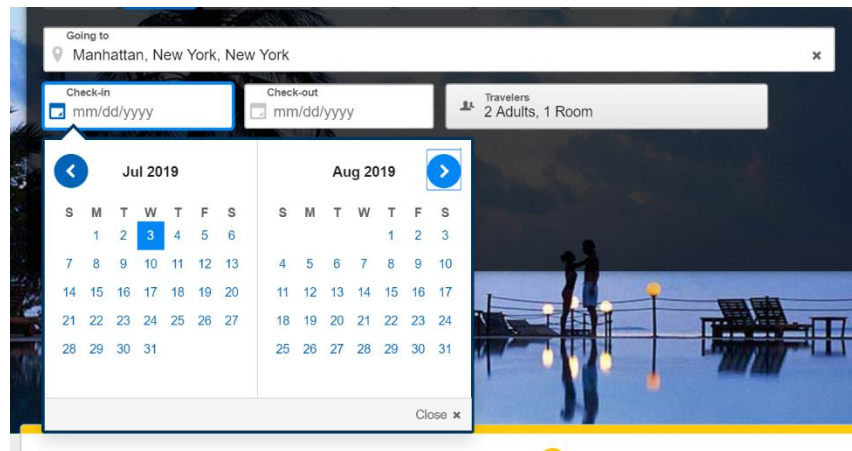
5. **Put in check in date as July 3th, 2019**

   a. The user's goal is to set the check-in date as July 3th, 2019. This is when the user will be checking in the hotel.

   b. The fill in form for the check-in date is provided in a similar fashion as the search bar. When the user clicks on the check-in box, a set of calendars are provided for users to click on.

c. Once the users see the check-in box, they will know that they must provide a check-in date to search for hotels that are available. It is clearly labeled as "check-in". Once they click on it, they can either type it in the dates like the example provided in the box, or they can simply click on the date on the calendar.

d. When the user hovers over the dates on the calendar, the interface highlights the date with a bright blue box, indicating that the user can click on it. Also, the text cursor blinks, telling the users that they can also type in the dates similar to the format given.
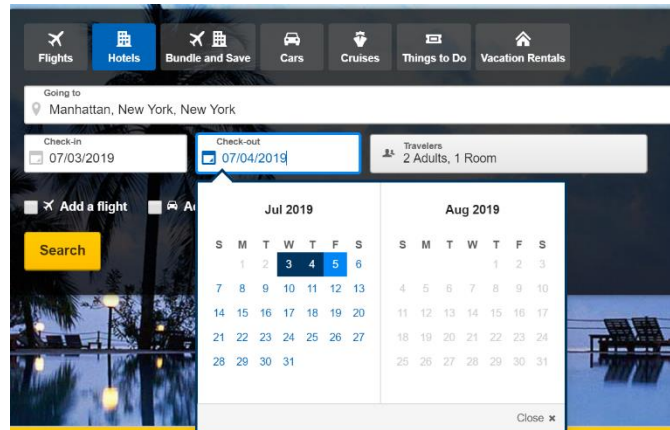
6. **Change defaulted check out date to July 5th, 2019**

a. The user's goal here is to specify a date where he or she will be checking out from the hotel. In our case the user will be checking out on July 5th, 2019.

b. The fill in form for the check-out date is provided right next to check-in.

c. Since the checkout date is defaulted to the dates that are after the check-in date, all users have to do is click the check-out date, without having to navigate through the calendar. The box is clearly labeled as "check-out".

d. They blur out the dates that precedes the check-in date when they are choosing check-out date, indicating that those dates are not appropriate for check-out dates. Feedback is similar to that of 5d.
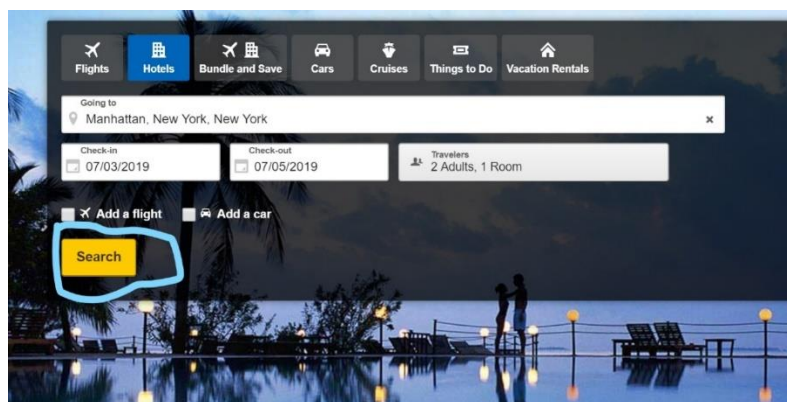
7. **Click search**

   a. The user's goal is to look for available hotels in Manhattan, New York, NY from July 3rd, 2019 to July 5th, 2019.

   b. A single search button is provided for users to click.

   c. The button is clearly labeled "Search" indicating that this button will look for hotels that match specifications provided above.

   d. When users hover their mouse over the search button, the mouse cursor changes to a hand, pointing to the button, indicating that the button is clickable. The color of the box also brightens up a little.
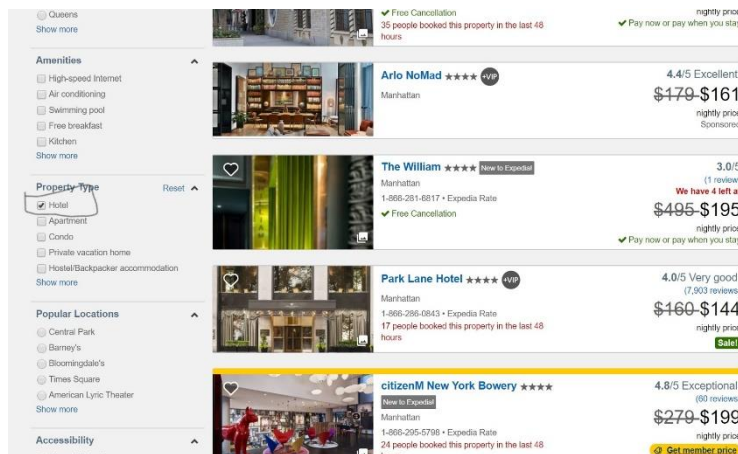
8. **Scroll and click "Hotel" as property type**

   a. The user's goal is to specify that the user specifically wants a hotel, instead of an apartment or a condo.

   b. The option for this "property type" is not clearly visible as the user has to scroll down. The user also has to read details of a number of hotels to realize that some of these rooms are actually an apartment or a condo.

   c. Once the users see this filter for property type, they can specify what they want. If they specifically want to book a hotel, they will click and check "hotel".

   d. The check mark tells users that they can choose multiple options under property type. When the user clicks the check box, a check appears on the box and the website automatically updates the search results and a message appears when it is updating the search results.
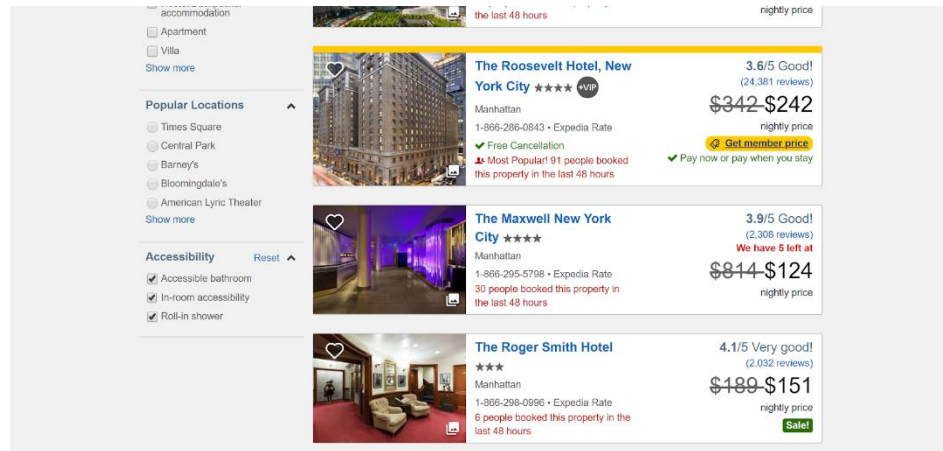
9. **Scroll and click "in room accessibility", "accessible bathroom" and "roll in shower"**

a. The user's goal here is to specify needs for an wheel chair accessible room which includes a roll in shower.

b. The necessary actions are available, but the user needs to scroll down to notice them to be in their direct line of sight.

c. Once the users see this filter for property type, they can specify what they want by simply selecting it and see the check mark next to the same.

d. The check mark tells users that they can choose multiple options for accessibility if applicable. When the user clicks the check box, a check appears on the box and the website automatically updates the search results and a message appears when it is updating the search results.
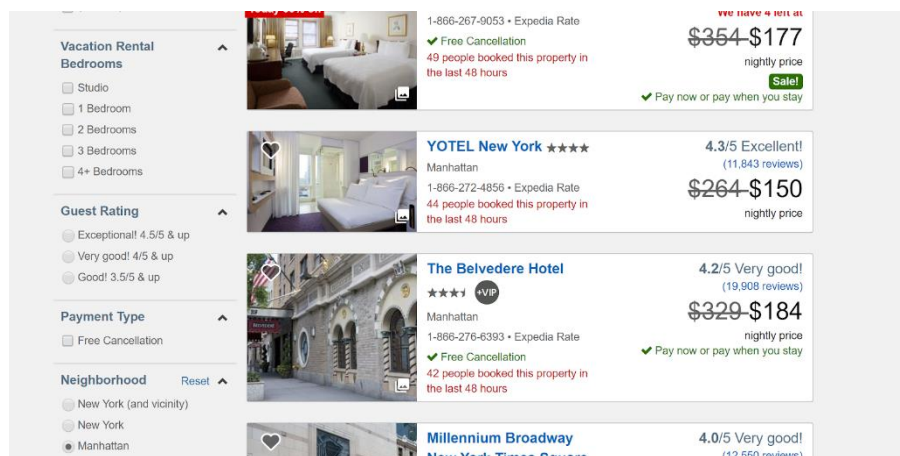
10. **Select desired hotel**

a. The user's goal here is to select the hotel he/she finds after adding the filter of property type and accessibility options.

b. In this case, the necessary options are all available with hotel details and prices having a consistent format throughout, along with hotel number and other details.

c. If the user wishes to select a hotel, he/she can hover over the name of the hotel which is then underlined and clicked to be selected.

d. The name of the hotel is underlined when the cursor is near it, hence serving as signifier for the affordance of the action of selection which can be performed by the user. Feedback typically here is that it takes you the main hotel page itself to view more details about the hotel.

11. **Scroll down, select room type and click reserve**

a. The user's goal here is to select type of room, number of beds and type of beds in room (i.e. king, queen, twin etc) based on the details earlier entered. Note that user is taken to a new page completely now.

b. The necessary actions are available, but one needs to scroll down to have them in their line of sight, the yellow color Reserve button serves as an extremely inviting option whereas the blue serves as a one for immediate confirmation.

c. Yes, the label matches the necessary action of reserving the room as with the resultant new options so shown for reserving.

d. The button serves as a direct manipulation interaction style as it looks as if it has been clicked, i.e. compresses and gives you the resultant page.
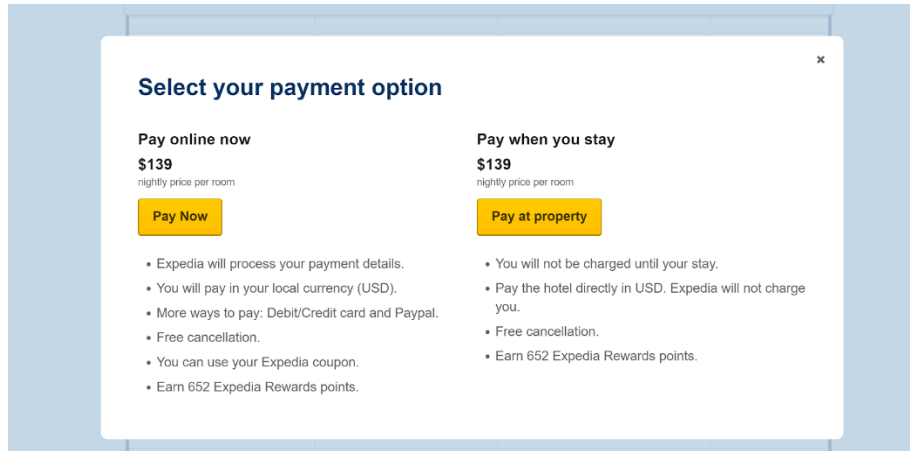
12.   Click pay at property as payment option

a. The user goal is to select pay at property as their payment option to move forward towards finalizing their reservation.

b. The two options are clearly displayed with their details and differences under them.

c. Each affordance is represented with a yellow button which has the title of the payment option on it.

d. The button serves as a direct manipulation interaction style as it looks as if it has been clicked, i.e. compresses and gives you the resultant page.

13.   Enter name and phone number

a. The user goal is to type in their name and phone number in order to continue finalizing their reservation.

b. Yes, the necessary actions are clearly available with a form fill in type interaction style entry request for the same.

c. Yes, the action is labeled 'Contact name' and 'Mobile Phone Number' and includes text boxes where these can be entered.

d. This function only gives feedback when the wrong action is taken (i.e. only typing in a first name, using numbers, etc.). When the correct action is taken there is no feedback given.

14.   **Click special requests for accessibility**

a. The user's goal is to get to the screen where they can enter their accessibility requests.

b. Yes, the necessary actions are clearly available. There is a button for this on the page.

c. Yes, the action is labeled correctly and has a wheelchair symbol next to it as an added visual.

d. The feedback given is a text box showing up on the screen. This should let the user know that they need to type their requests. There are also instructions on what to write.

15.   **Enter special requests**

a. The user's goal is to address all of their specific needs so that the hotel will know.

b. Yes, the necessary actions are available. The text boxes are there for the user to fill in this information as well as the check boxes to enter in for accessibility options.

c. Yes, there is a text box and a set of instructions that specifically tells the user what to type along with a check box type selection.

d. There is no feedback after typing in a special request in the text box, so the user will not have any way of knowing that this was fully registered by the website, but the text entry shows that it has been entered, but the check box signifies that it's been selected.

16.   **Enter card information and billing address**

   a.   The user's goal is to enter all of their card and billing information in order to continue finalizing their reservation.

   b.   Yes, the necessary actions are available. The text boxes are there for the user to fill in this information.

   c.   Yes, as there are text boxes that are labeled with certain billing information that needs to be filled in by the user.

   d.   There is no feedback after typing in the text box, so the user will not have any way of knowing that this was fully registered by the website but the system responds by simply showing the cursor next to the text entry signified that it has been entered.

17.   **Enter email address or Expedia account details if applicable**

   a.   The user's goal is to enter their email address so that they can receive notifications from the hotel booking site.

   b.   Yes, the necessary actions are available. The text boxes are there for the user to fill in this information.

c. Yes, as there is a text box that is labeled email address.

d. There is no feedback after typing in the text box, so the user will not have any way of knowing that this was fully registered by the website, but the text entry with the cursor next to signifies the entry of the text into the system.
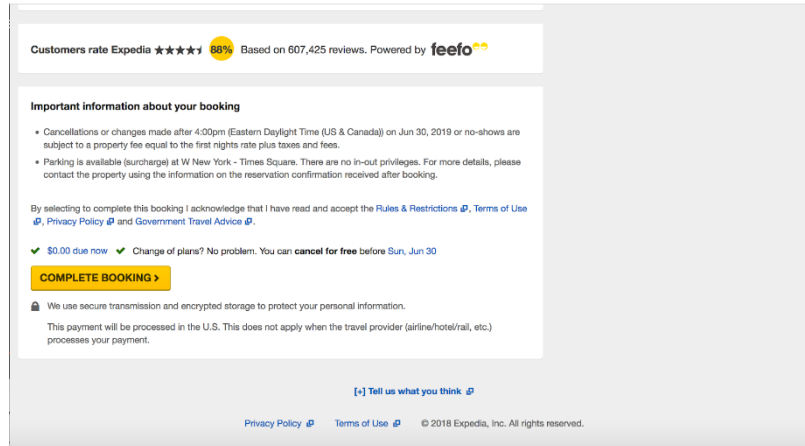
18. **Select Complete Booking**

a. The user's goal is to submit all of the entered information to complete the booking.

b. Yes, the necessary actions are available, mainly with the bright yellow button.

c. Yes, the button is clearly labeled and does exactly what it says.

d. We did not complete the booking in full, but normally you would be taken to a confirmation page with a confirmation code and further instructions. So yes, there would be feedback to let the user know that their action was completed. We predict that the resultant page is typically one which shows whether the booking was confirmed or not and gives us the hotel contact if any issues.