Final Report

Group members

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Website Name: LastMinute is a travel website where customers may reserve rooms and flights.

Website URL: https://www.lastminute.com/

Website Prototype URL: https://yssdnf.axshare.com/

Summary

During the course of our inquiry, we completely redesigned LastMinute, a travel website designed to make it easier for consumers to book hotels and flights together. Using a within-subjects research design, we gave each of the 12 participants particular assignments to complete in order to assess the website's usability and user interface. Remarkably, each participant completed their duties on their own without consulting one another or talking about the website.

We collected data on four important metrics: (1) Searching a flight, (2) Selecting Flights, (3) Currency conversion, and (4) New Passenger addition. Participants were also asked about interactions pertaining to the activity at hand as well as their general experience.

After analyzing the collected measurements, a significant pattern became apparent. While browsing the prototype website, participants showed competency, they had difficulty completing tasks on the real website. The prototype worked better than the original website, with far less clicks, greater success rates, and a reduced rate of mistakes, according to a comparative analysis. In conclusion, compared to its predecessor, the prototype website performed better.

Method

Who we tested

We evaluated our website with 12 users, 6 users on the original website and 6 users on our redesigned website.

Demographics

1. **Age**

20-30	12
30-45	0
45-60	0
Above 60	0

2. **Gender**

Male	7
Female	5

3. **Participants with prior experience**

Prior experience with flight booking website	8
Prior experience without flight booking website	4

4. **Education**

Education in Technology	8
Education in Business	1
Education in Mechanical	2
Education in Construction Management	1

5. **Work Experience**

<1 year	4
1-5 years	8

5-10 years	0
> 10 years	0

6. **HCI Knowledge**

Took HCI course	2
Don’t know anything about HCI	10

What participants did

Each participant dedicated a minimum of 10 minutes to actively engage in the study to facilitate their completion of the seven listed tasks with instructions on how to do each task. If any participant encountered difficulties, they were encouraged to proceed to the next task. Following the task completion, we held discussions to gather insights into the participants' overall experiences.

Task 1: Searching a flight

After a lengthy semester, you are eagerly looking forward to a much-needed break. In the desire for a vacation, you discovered London, where the current prices seemed reasonably budget friendly. Filled with enthusiasm, you promptly positioned yourself in front of the laptop, initiated a flight search from Phoenix to London for the period between December 12th and January 5th, and eagerly clicked the search button, anticipating a fantastic deal.

Task 2: Selecting Flights

After examining the available flight options, memories of unsatisfactory experiences with specific airlines prompted you to recall the positive encounters you've had with jetBlue. Given its reputation for comfortable seating and punctuality, you specifically sought out jetBlue flights. Fortunately, you found a suitable choice, departing from Phoenix at 14:22 and arriving in London at 20:45. The return journey was scheduled to start at 8:25 in London, with a return to Phoenix at 21:29. These timings align seamlessly with your preferences, prompting you to click the submit button.

Task 3: Currency conversion

Upon revisiting the secure page, it became evident that the flight tickets were listed in Euros. Unfortunately, neither of them had a card or account configured for automatic currency conversion from USD to Euros. With a preference for making the payment in USD, the pair actively sought a solution to proceed with the transaction in their familiar currency. Once the currency conversion obstacle was

resolved, they repeated the process of selecting the flights outlined in Task-2 and smoothly advanced to the next page to complete the booking process.

Task 4: New Passenger addition

As you advanced to the next page to finalize the flight booking, your roommate unexpectedly appeared and caught sight of the enticing flight tickets. Filled with excitement about the affordability, your roommate expressed a keen interest in joining the trip and booking the same flights. Embracing the roommate's enthusiasm, you went back to the page where additional users could be added and included your roommate in the travel plans.

Task 5: Class selection

Once the flight details were finalized, you and your roommate were redirected to the "Travel more flexibly" page, where you had to select the type of seats for your journey. Upon reviewing the available options—classic, flexible, and business class—you were pleasantly surprised to find that business class tickets were surprisingly within your budget. Opting for the enhanced comfort and amenities, both of you chose the business class option and proceeded to the next page.

Task 6: Seat Selecting

You and your friend have chosen to sit side-by-side. On the next page, select seat numbers A1 and B1, then confirm the seats. After confirming, click on "Proceed to Payment" to continue with the booking process.

Task 7: User Details

Having completed the selection of flights and seats, it's time to enter our personal information to move forward to the payment page.

Website Task Times

Tasks/Participants	**Participant1**	**Participant2**	**Participant3**	**Participant4**	**Participant5**	**Participant6**
T1 ST	00:00:05	00:00:00	00:00:00	00:00:06	00:00:08	00:00:06
T1 ET	00:01:43	00:01:34	00:02:02	00:02:11	00:02:28	00:00:53
T1 TT	**00:01:38**	**00:01:34**	**00:02:02**	**00:02:05**	**00:02:20**	**00:00:47**

T2 ST	00:01:44	00:01:35	00:02:03	00:02:12	00:02:29	00:00:54
T2 ET	00:03:52	00:03:15	00:03:54	00:04:22	00:03:51	00:01:54
T2 TT	**00:02:08**	**00:01:40**	**00:01:51**	**00:02:10**	**00:01:22**	**00:01:00**
T3 ST	00:03:53	00:03:16	00:03:55	00:04:23	00:03:52	00:01:55
T3 ET	00:04:26	00:05:21	00:04:19	00:05:40	00:05:02	00:03:48
T3 TT	**00:00:33**	**00:02:05**	**00:00:24**	**00:01:17**	**00:01:10**	**00:01:53**
T4 ST	00:04:27	00:05:22	00:04:20	00:05:41	00:05:03	00:03:49
T4 ET	00:07:09	00:09:17	00:07:16	00:07:16	00:07:21	00:05:30
T4 TT	**00:02:42**	**00:03:55**	**00:02:56**	**00:01:35**	**00:02:18**	**00:01:41**
T5 ST	00:07:10	00:09:18	00:07:17	00:07:17	00:07:22	00:05:31
T5 ET	00:10:42	00:16:09	00:10:35	00:08:21	00:07:44	00:08:06
T5 TT	**00:03:32**	**00:06:51**	**00:03:18**	**00:01:04**	**00:00:22**	**00:02:35**
T6 ST	00:10:43	00:16:10	00:10:36	00:08:22	00:07:45	00:08:07
T6 ET	00:11:40	00:17:57	00:11:45	00:09:04	00:08:50	00:08:51
T6 TT	**00:00:57**	**00:01:47**	**00:01:09**	**00:00:42**	**00:01:05**	**00:00:44**
T7 ST	00:11:41	00:17:58	00:11:46	00:09:05	00:08:51	00:08:52
T7 ET	00:14:24	00:22:41	00:14:36	00:12:19	00:11:31	00:11:51
T7 TT	**00:02:43**	**00:03:43**	**00:02:50**	**00:03:14**	**00:02:40**	**00:02:59**
Total time	**00:14:24**	**00:22:41**	**00:14:36**	**00:12:19**	**00:11:32**	**00:11:51**

Table 1: Task times of Original Website

Tasks/Participants	**Participant1**	**Participant2**	**Participant3**	**Participant4**	**Participant5**	**Participant6**
T1 ST	00:00:00	00:00:00	00:00:00	00:00:00	00:00:00	00:00:00
T1 ET	00:00:50	00:00:30	00:00:29	00:01:02	00:00:56	00:00:30

T1 TT	**00:00:50**	**00:00:30**	**00:00:29**	**00:01:02**	**00:00:56**	**00:00:36**
T2 ST	00:00:50	00:00:30	00.00:29	00:01:02	00:00:56	00:00:30
T2 ET	00:01:23	00:01:02	00:00:56	00:01:30	00:01:28	00:00:53
T2 TT	**00:00:30**	**00:00:32**	**00:00:27**	**00:00:28**	**00:00:34**	**00:00:23**
T3 ST	00:01:23	00:01:02	00:00:56	00:01:30	00:01:28	00:00:53
T3 ET	00:02:02	00:01:35	00:01:28	00:01:40	00:02:19	00:01:23
T3 TT	**00:00:40**	**00:0033**	**00:0034**	**00:00:10**	**00:00:49**	**00:00:30**
T4 ST	00:02:02	00:01:35	00:01:28	00:01:40	00:02:19	00:01:23
T4 ET	00:02:32	00:02:00	00:02:01	00:02:08	00:02:55	00:01:54
T4 TT	**00:00:30**	**00:00:25**	**00:00:33**	**00:00:28**	**00:00:31**	**00:00:31**
T5 ST	00:02:32	00:02:00	00:02:01	00:02:08	00:02:55	00:01:54
T5 ET	00:03:05	00:02:10	00:02:15	00:02:31	00:03:12	00:02:08
T5 TT	**00:00;33**	**00:00:10**	**00:00:14**	**00:00:23**	**00:00:17**	**00:00:14**
T6 ST	00:03:05	00:02:10	00:02:15	00:02:31	00:03:12	00:02:08
T6 ET	00:03:40	00:02:30	00:02:31	00:02:49	00:03:34	00:02:32
T6 TT	**00:00:35**	**00:00:20**	**00:00:16**	**00:00:18**	**00:00:26**	**00:00:24**
T7 ST	00:03:40	00:02:30	00:02:31	00:02:29	00:03:34	00:02:32
T7 ET	00:06:57	00:05:19	00:05:24	00:05:39	00:07:52	00:05:57
T7 TT	**00:03:17**	**00:02:49**	**00:02:53**	**00:02:50**	**00:04:18**	**00:03:25**
Total time	**00:06:57**	**00:05:19**	**00:05:24**	**00:05:39**	**00:07:52**	**00:05:57**

Table 2: Redesigned Websites Taks times

Metrics Collected

To commence, it's crucial to highlight that the experiment unfolded in a serene setting. We deliberately selected individuals who were not acquainted with each other, and we refrained from intervening while the experiment was in progress.

Task Success

Rather than solely focusing on whether the task was executed to satisfaction, we considered additional outcomes. This included assessing if the individual could perform the activity unaided (scoring 3), if minimal assistance was required (score 2), if partial completion was achieved (score 1), or if the task couldn't be accomplished (score 0). Distinct scores were assigned for each scenario, and the cumulative total was calculated.

Actual Website			New Website		
User No.	**Task No.**	**Success Rate**	**User No.**	**Task No.**	**Success Rate**
1	1	1	**1**	1	3
	2	1		2	2
	3	0		3	3
	4	1		4	3
	5	1		5	3
	6	0		6	3
	7	3		7	3
2	1	1	**2**	1	3
	2	1		2	2
	3	0		3	3
	4	1		4	3
	5	1		5	3
	6	0		6	3
	7	3		7	3
3	1	1	**3**	1	3
	2	1		2	2
	3	0		3	3
	4	0		4	3
	5	1		5	3
	6	0		6	3
	7	3		7	3
4	1	1	**4**	1	3
	2	1		2	2
	3	0		3	3
	4	1		4	3
	5	1		5	3
	6	0		6	3
	7	3		7	3
5	1	1	**5**	1	3
	2	1		2	2
	3	0		3	3

	4	0		4	3
	5	1		5	3
	6	0		6	3
	7	3		7	3
6	1	1	**6**	1	3
	2	1		2	2
	3	0		3	3
	4	0		4	3
	5	1		5	3
	6	0		6	3
	7	3		7	3

Task Time

Prior to the participant commencing the activity, comprehensive instructions were provided. The timer commenced once the participant grasped the task and ceased upon completion. Below table has the comparative data in terms of time for each task across original and redesigned website.

Actual Website			**New Website**		
User No.	**Task No.**	**Time Taken**	**User No.**	**Task No.**	**Time Taken**
1	1	01:38	**1**	1	00:50
	2	02:08		2	00:30
	3	00:33		3	00:40
	4	02:42		4	00:30
	5	03:32		5	00:33
	6	00:57		6	00:35
	7	02:43		7	03:17
2	1	01:34	**2**	1	00:30
	2	01:40		2	00:32
	3	02:05		3	00:33
	4	03:55		4	00:25
	5	06:51		5	00:10
	6	01:47		6	00:20
	7	03:43		7	02:49
3	1	02:02	**3**	1	00:29
	2	01:51		2	00:27
	3	00:24		3	00:34
	4	02:56		4	00:33
	5	03:18		5	00:14
	6	01:09		6	00:16
	7	02:50		7	02:53
4	1	02:05	**4**	1	01:02
	2	02:10		2	00:28
	3	01:17		3	00:10
	4	01:35		4	00:28

	5	01:04		5	00:23
	6	00:42		6	00:18
	7	03:14		7	02:50
5	1	02:20	**5**	1	00:56
	2	01:22		2	00:34
	3	01:10		3	00:49
	4	02:18		4	00:31
	5	00:22		5	00:17
	6	01:05		6	00:26
	7	02:40		7	04:18
6	1	00:47	**6**	1	00:36
	2	01:00		2	00:23
	3	01:53		3	00:30
	4	01:41		4	00:31
	5	02:35		5	00:14
	6	00:44		6	00:24
	7	02:59		7	03:25

Number of Clicks per Task

During the task execution, participants were instructed to tally the number of clicks necessary for successful task completion. Please note that a single scroll is also considered as a click.

Actual Website			**New Website**		
User No.	**Task No.**	**Clicks count**	**User No.**	**Task No.**	**Clicks count**
1	1	24	**1**	1	11
	2	48		2	12
	3	11		3	3
	4	42		4	4
	5	54		5	1
	6	30		6	4
	7	28		7	28
2	1	26	**2**	1	12
	2	44		2	18
	3	15		3	4
	4	42		4	8
	5	59		5	1
	6	30		6	4
	7	28		7	28
3	1	24	**3**	1	13
	2	42		2	14
	3	13		3	3
	4	38		4	4
	5	60		5	1
	6	30		6	9
	7	28		7	28

4	1	24	**4**	1	16
	2	52		2	11
	3	20		3	6
	4	42		4	4
	5	54		5	2
	6	31		6	8
	7	30		7	28
5	1	26	**5**	1	11
	2	58		2	12
	3	16		3	7
	4	46		4	8
	5	54		5	2
	6	30		6	4
	7	28		7	28
6	1	22	**6**	1	12
	2	41		2	14
	3	11		3	3
	4	38		4	5
	5	50		5	1
	6	30		6	7
	7	28		7	28

Actual Website		**New Website**	
Task Number	**Clicks count (mean)**	**Task Number**	**Clicks count (mean)**
1	24	**1**	11
2	48	**2**	12
3	11	**3**	3
4	42	**4**	4
5	54	**5**	1
6	30	**6**	4
7	28	**7**	28

Number of Errors

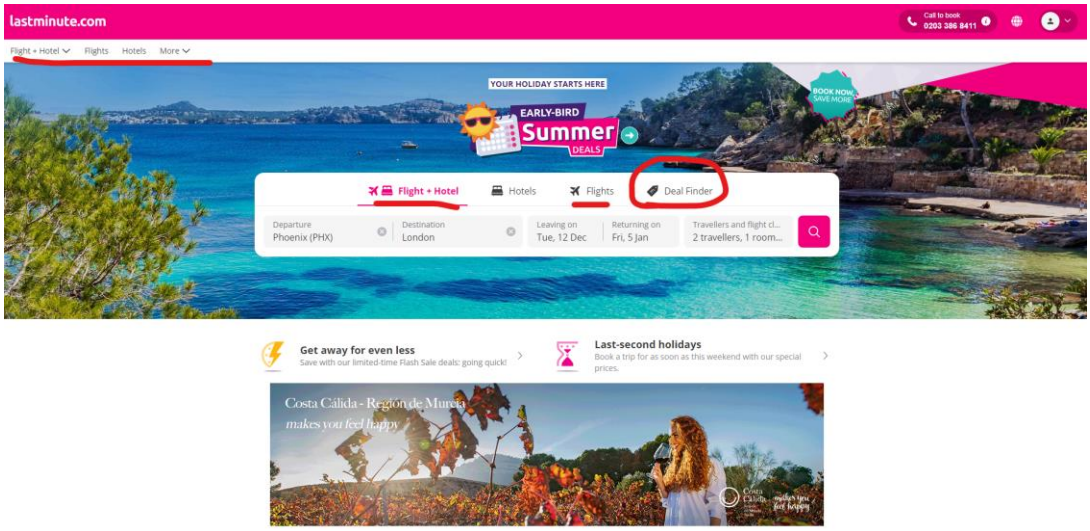
For this metric we have calculated the number of times users had made mistakes or were not able to complete the given task. Numbers here indicate the number of clicks users have wasted without doing the original task or in figuring out the original task. Counts for few tasks in original website are high because users were not able to finish the task or took time in figuring out the original ask.

Actual Website			New Website		
User No.	**Task No.**	**Errors count**	**User No.**	**Task No.**	**Errors count**
1	1	11	**1**	1	0
	2	0		2	0
	3	11		3	0
	4	25		4	1
	5	34		5	0
	6	30		6	0
	7	0		7	0
2	1	12	**2**	1	0
	2	0		2	0
	3	15		3	0
	4	21		4	1
	5	30		5	0
	6	30		6	0
	7	0		7	0
3	1	11	**3**	1	0
	2	0		2	0
	3	11		3	0
	4	25		4	1
	5	28		5	1
	6	30		6	0
	7	0		7	0
4	1	13	**4**	1	0
	2	0		2	0
	3	19		3	1
	4	29		4	1
	5	34		5	0
	6	30		6	0
	7	0		7	0
5	1	11	**5**	1	1
	2	0		2	0
	3	13		3	1
	4	25		4	1
	5	31		5	0
	6	30		6	0
	7	0		7	0
6	1	11	**6**	1	1
	2	0		2	0
	3	18		3	0
	4	27		4	1
	5	34		5	0
	6	30		6	0
	7	0		7	0

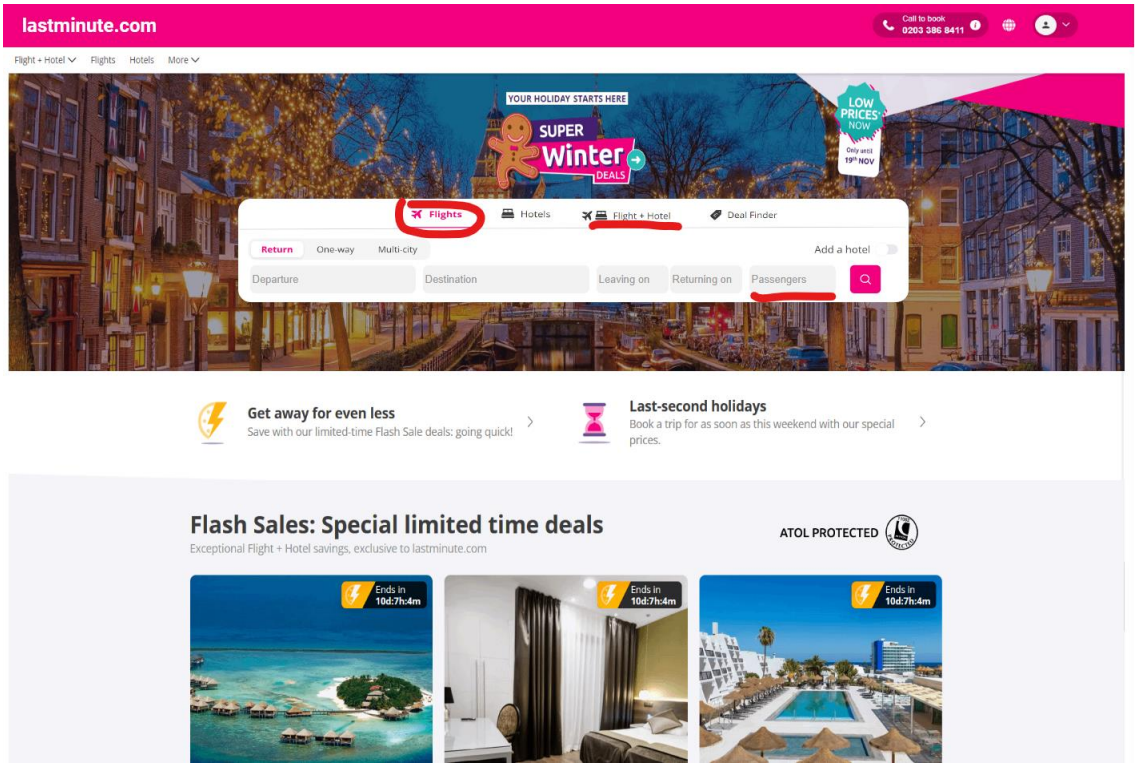
Improvements have been made to improve the website's user experience

Clear and Distinctive Homepage:

- Paying close attention to the homepage. The redundant existence of two navigation bars with the same icons that, when tapped, lead to similar locations has been resolved, which is noteworthy. By following the design philosophy of maximizing the "Signal-to-Noise Ratio," this change guarantees customers a more distinct and easily comprehensible visual hierarchy. Screenshots of these enhancements are included below for your reference.

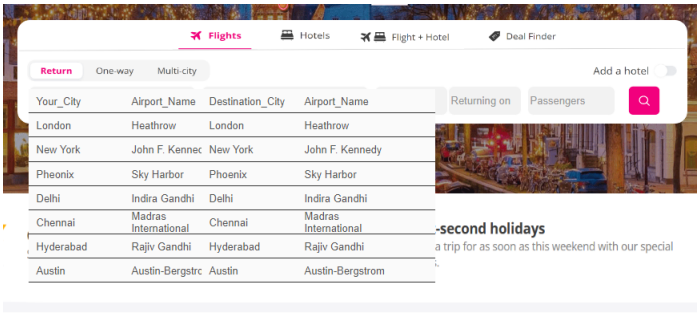


- Examining the system closely reveals that the two duplicate symbols point to the same input screens for flight information.
- In addition to providing no new information, this repetition may cause confusion for consumers exploring the platform. By removing unnecessary buttons and improving the contrast between the two pages, the redesigned website seeks to create a more user-friendly and unique home page. The enhanced user experience is reflected in the revised interface, which is seen in the screenshots that go with it.



Prototyped suggestions for destination fields:

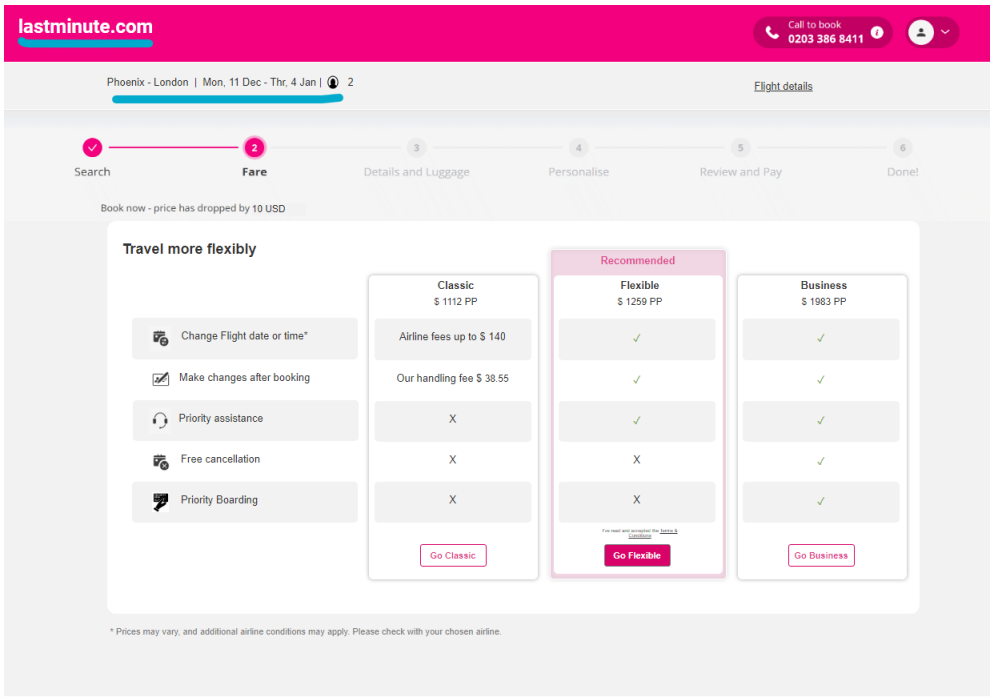
- The user experience on the original website is less straightforward because it does not presently have the convenience of recommending popular locations in its "From" and "To" sections. In response, we have updated our website to include a more user-friendly feature that suggests places based on popularity. The prototype tries to demonstrate an enhanced design that increases user engagement, even if it might not be dependent on any particular standards. The updated website can be seen in the screenshots below, which show how popular destinations have been carefully included to help customers make better decisions and enhance their entire experience.



- Our updated website addresses this usability issue by including destination options in the "From" and "To" sections, which further improves the user experience. By giving customers a selection of well-liked locations, the creative method expedites the decision-making process. These recommendations might not be based on criteria in the prototype, but they nonetheless provide a visual depiction of how the website could have a better, more user-friendly layout. The screenshot that go with the article offer an overview of the updated website and demonstrate how this feature was added to improve the platform's usability and intuitiveness.

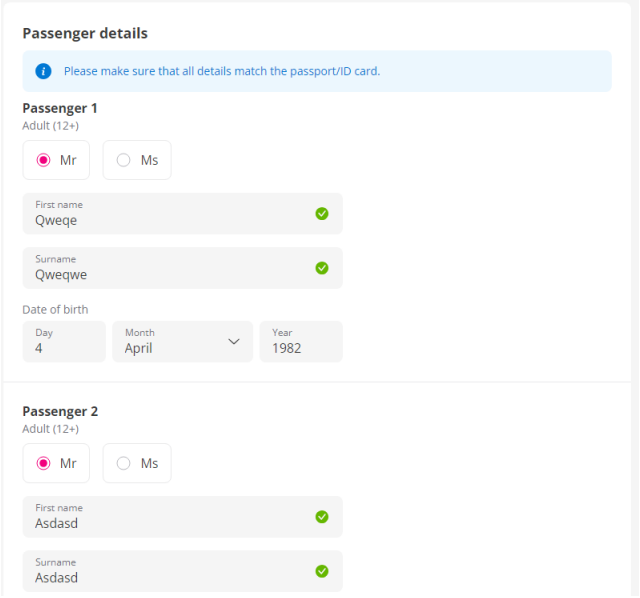
Proper navigation pane that eases control flow:

- One issue with the booking interface is that the main page does not have a useful navigation window. It is difficult to move back and forth between pages, and the "Back" button is just text with no interactive features. Though it is there, the navigation panel is mostly used for illustration. On the left, it provides a picture of the current page and stages that have been completed; on the right, it lists upcoming pages. It is essentially a static notification instead of an interactive way to navigate pages.
- Users are restricted to utilizing only the back button, situated alongside the text fields in the navigation bar. This button operates by loading the previous page in the browser. Consequently, immediate access to the user's own page is not permitted.
- The revamped website aims to streamline the flight and hotel booking process by minimizing the required time and clicks. To facilitate seamless navigation, a dedicated navigation pane with enhanced control flow will be introduced. When the navigation bar becomes visible, users can click on the text fields to load specific pages. Notably, entries in these text fields, representing page names in the booking process, will be highlighted with clear and aesthetically pleasing text formatting, distinguishing them from regular information on the navigation bar.

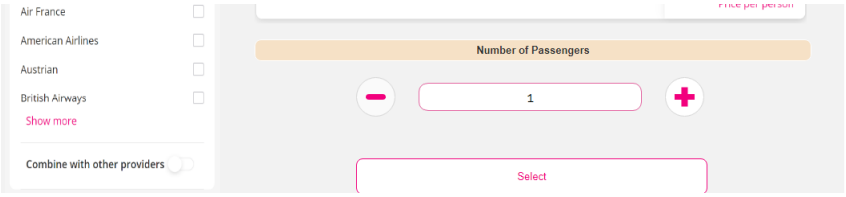


Enable options for user to add/delete passengers:

- A vital component that protects consumers from mistakes and lessens their effects is absent from the present last-minute bargain's platform. While users are asked to enter the number of passengers at the beginning of the process, there is a noticeable lack of functionality that permits them to modify this number at a later stage. In the event that a user accidentally forgets to add a passenger at the beginning, fixing this error requires stopping the booking process and starting over. Since moving on to the payment step takes a good five to ten minutes, having to go through this process again because of a small mistake is not only annoying, but it also makes for a less-than-ideal user experience. The accompanying figure illustrates how there is no way to change passenger information while the booking process is still in progress. contravening the essential "Forgiveness" usability principle. As seen in the screenshot below there is no option to add a new passenger when adding passenger details which violates the **Forgiveness** usability principle

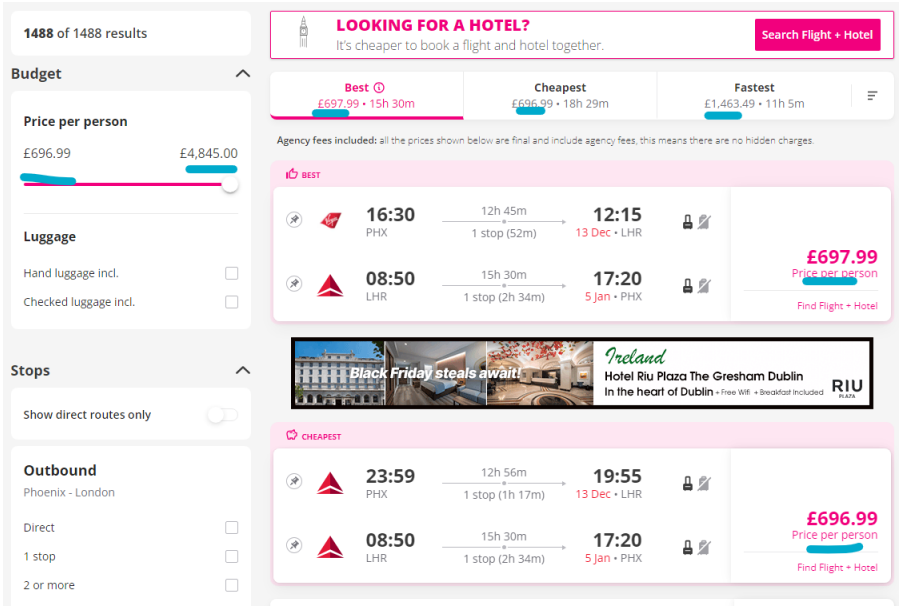


- We want to account for user mistakes on our rebuilt website by giving users the ability to add or remove passengers at any point throughout the booking process. This is present at the same page where users select their flights and its easily visible so that users can have a mental note that they can add or remove users here because they saw something big and new before going to the next page.

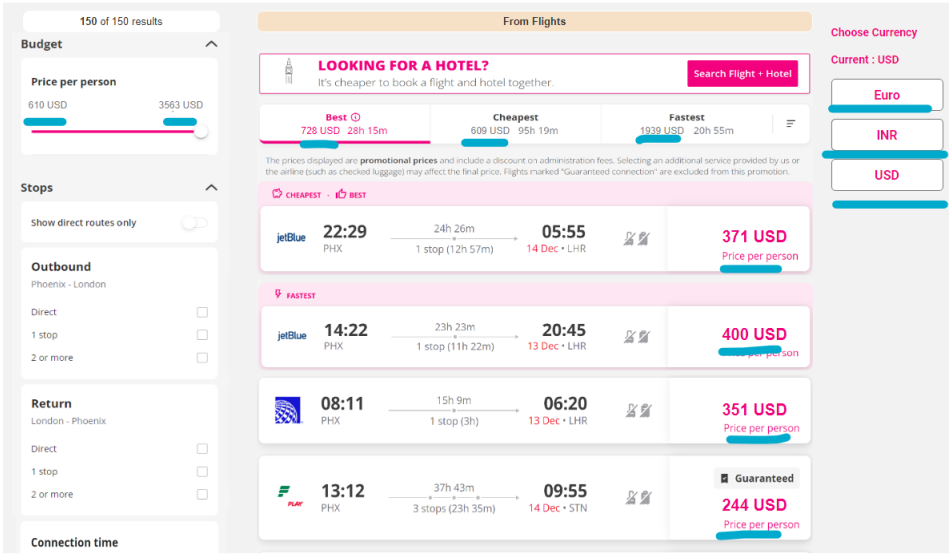


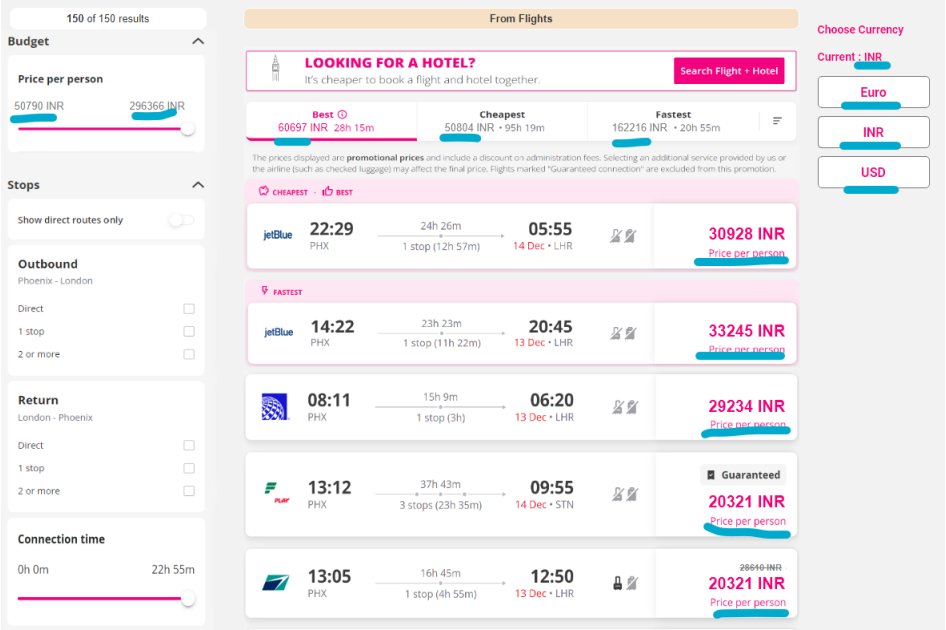
Incorporated currency conversion feature

- Improving the user experience is the main goal, with the intention of simplifying the procedure and relieving the user of effort. As a result, we've included a function to our updated website that gives customers the freedom to select the currency they want to use for purchases.



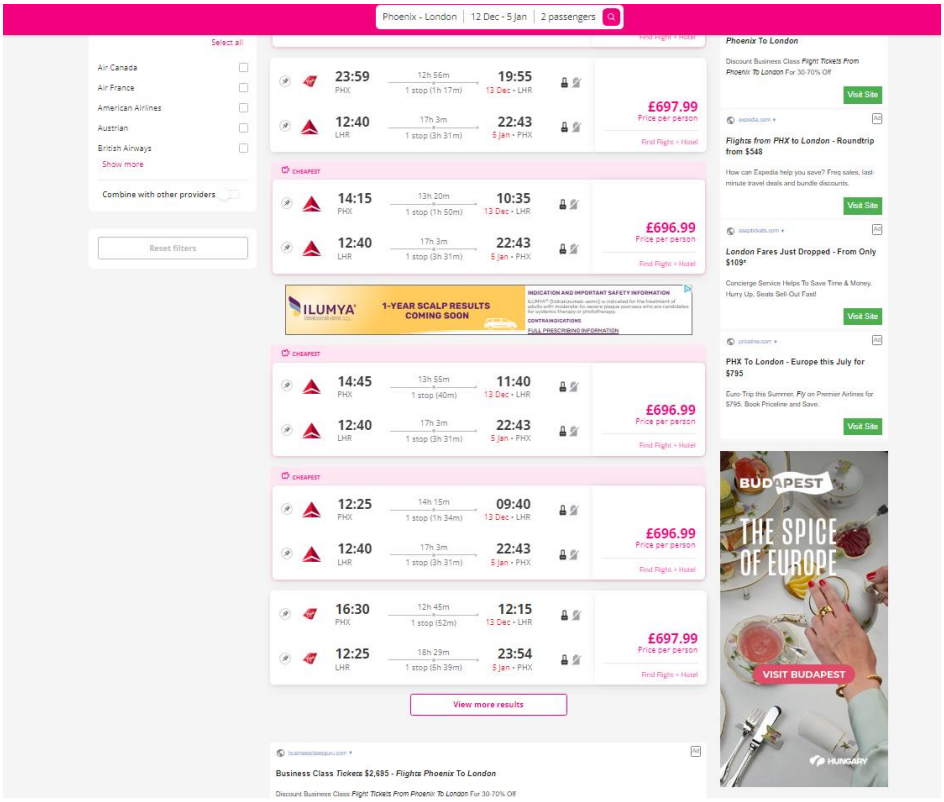
- As we can see above we only have an option to buy the ticket in euros and no other currency is acceptable by the website at any point of time
- In contrast to the previous version, which only showed costs in euros, our redesigned interface asks users to choose their preferred currency for a more tailored and practical pricing display. This tactical enhancement supports our dedication to streamlining the user experience by enabling a more seamless and user-focused engagement with our flight selection and booking procedure.





Redesigned flights list to follow Miller's law

- When customers enter the information of their flight, the first website bombards them with possibilities, ignoring Miller's law, which states that humans can only comprehend five to nine items at a time.
- Our redesigned website complies with Miller's legislation by offering a condensed list of 8 flight options, making the page easy to navigate without being overly complicated.
- The accompanying pictures, which show the original and updated interfaces side by side, demonstrate our dedication to minimizing user cognitive burden and improving overall usability.


Phoenix - London | 12 Dec - 5 Jan | 2 passengers
Select all
Air Canada
Air France
American Airlines
Austrian
British Airways
Show more
Combine with other providers
Reset filters
23:59 PHX 12h 56m 1 stop (1h 17m) 19:55 13 Dec • LHR
12:40 LHR 17h 3m 1 stop (3h 31m) 22:43 5 Jan • PHX
£697.99
Price per person
Find Flight + Hotel
CHEAPEST
14:15 PHX 13h 20m 1 stop (1h 50m) 10:35 13 Dec • LHR
12:40 LHR 17h 3m 1 stop (3h 31m) 22:43 5 Jan • PHX
£696.99
Price per person
Find Flight + Hotel
ILUMYA
1-YEAR SCALP RESULTS COMING SOON
INDICATION AND IMPORTANT SAFETY INFORMATION
CONTRAINDICATIONS
FULL PRESCRIBING INFORMATION
CHEAPEST
14:45 PHX 13h 55m 1 stop (40m) 11:40 13 Dec • LHR
12:40 LHR 17h 3m 1 stop (3h 31m) 22:43 5 Jan • PHX
£696.99
Price per person
Find Flight + Hotel
CHEAPEST
12:25 PHX 14h 15m 1 stop (1h 34m) 09:40 13 Dec • LHR
12:40 LHR 17h 3m 1 stop (3h 31m) 22:43 5 Jan • PHX
£696.99
Price per person
Find Flight + Hotel
16:30 PHX 12h 45m 1 stop (52m) 12:15 13 Dec • LHR
12:25 LHR 18h 29m 1 stop (5h 39m) 23:54 5 Jan • PHX
£697.99
Price per person
Find Flight + Hotel
View more results
Business Class Tickets $2,695 - Flights Phoenix To London
Discount Business Class Flight Tickets From Phoenix To London For 30-70% Off
Phoenix To London
Discount Business Class Flight Tickets From Phoenix To London For 30-70% Off
Visit Site
Flights from PHX to London - Roundtrip from $548
How can Expedia help you save? Free sales, last-minute travel deals and bundle discounts.
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London Fares Just Dropped - From Only $109*
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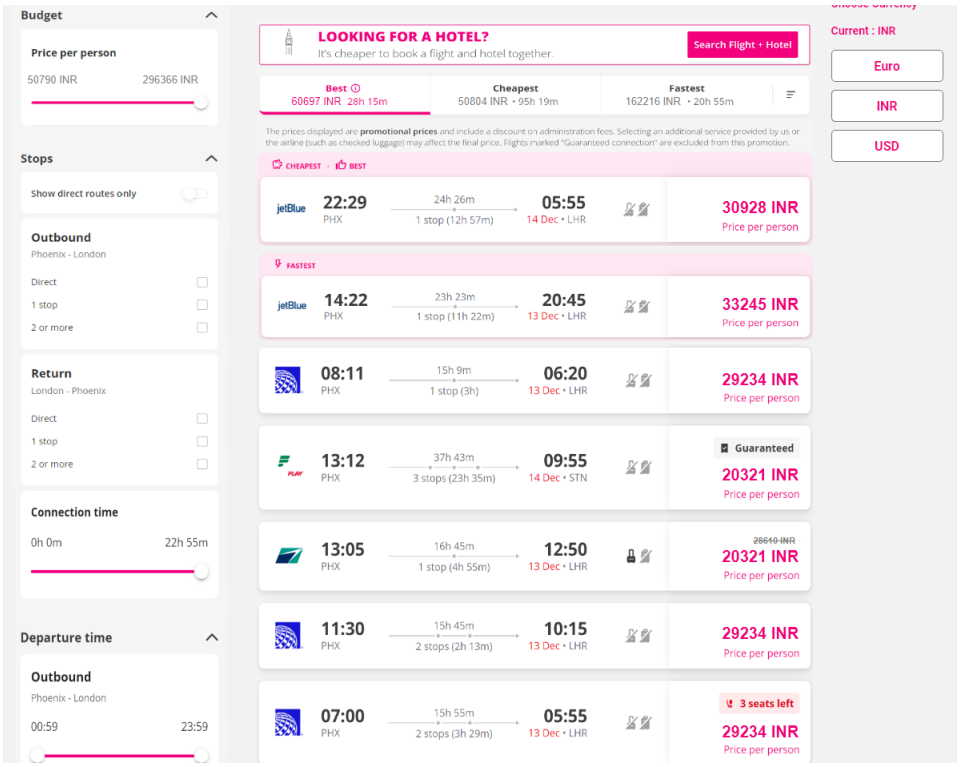
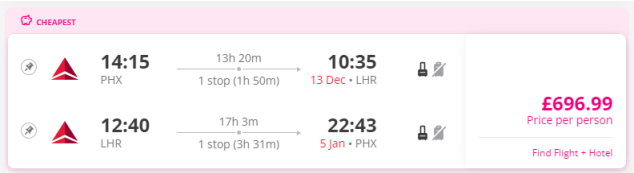
HUNGARY

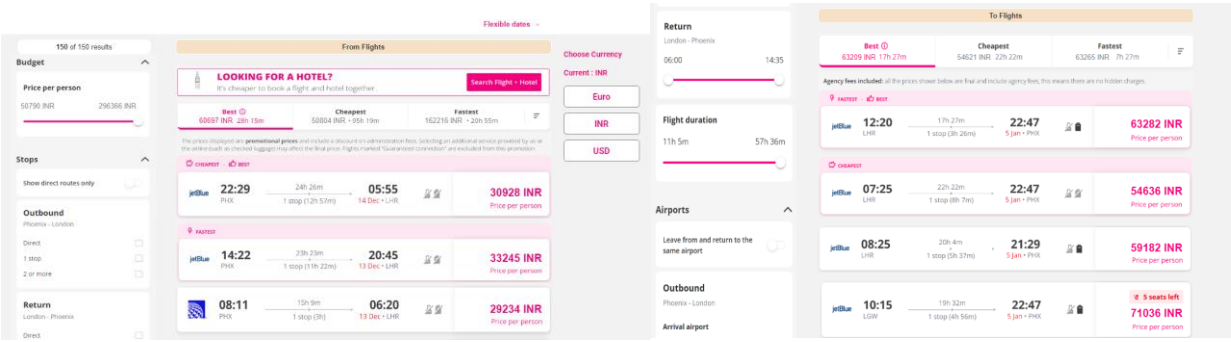

Budget
Price per person
50790 INR
296366 INR
Stops
Show direct routes only
Outbound
Phoenix - London
Direct
1 stop
2 or more
Return
London - Phoenix
Direct
1 stop
2 or more
Connection time
0h 0m
22h 55m
Departure time
Outbound
Phoenix - London
00:59
23:59
LOOKING FOR A HOTEL?
It's cheaper to book a flight and hotel together.
Search Flight + Hotel
Best
60697 INR 28h 15m
Cheapest
50804 INR • 95h 19m
Fastest
162216 INR • 20h 55m
The prices displayed are promotional prices and include a discount on administration fees. Selecting an additional service provided by us or the airline (such as checked luggage) may affect the final price. Flights marked "Guaranteed connection" are excluded from this promotion.
CHEAPEST · BEST
jetBlue 22:29 PHX 24h 26m 1 stop (12h 57m) 05:55 14 Dec • LHR
30928 INR
Price per person
FASTEST
jetBlue 14:22 PHX 23h 23m 1 stop (11h 22m) 20:45 13 Dec • LHR
33245 INR
Price per person
08:11 PHX 15h 9m 1 stop (3h) 06:20 13 Dec • LHR
29234 INR
Price per person
13:12 PHX 37h 43m 3 stops (23h 35m) 09:55 14 Dec • STN
Guaranteed
20321 INR
Price per person
13:05 PHX 16h 45m 1 stop (4h 55m) 12:50 13 Dec • LHR
28610 INR
20321 INR
Price per person
11:30 PHX 15h 45m 2 stops (2h 13m) 10:15 13 Dec • LHR
29234 INR
Price per person
07:00 PHX 15h 55m 2 stops (3h 29m) 05:55 13 Dec • LHR
3 seats left
29234 INR
Price per person
Current : INR
Euro
INR
USD

Bundling up the flights

- In the original website when we try to book both to and from flights at once, the original website bundles them up and shows different permutations of the flights, this causes the list to be super long and in turn takes lot of time for users to search their flights.

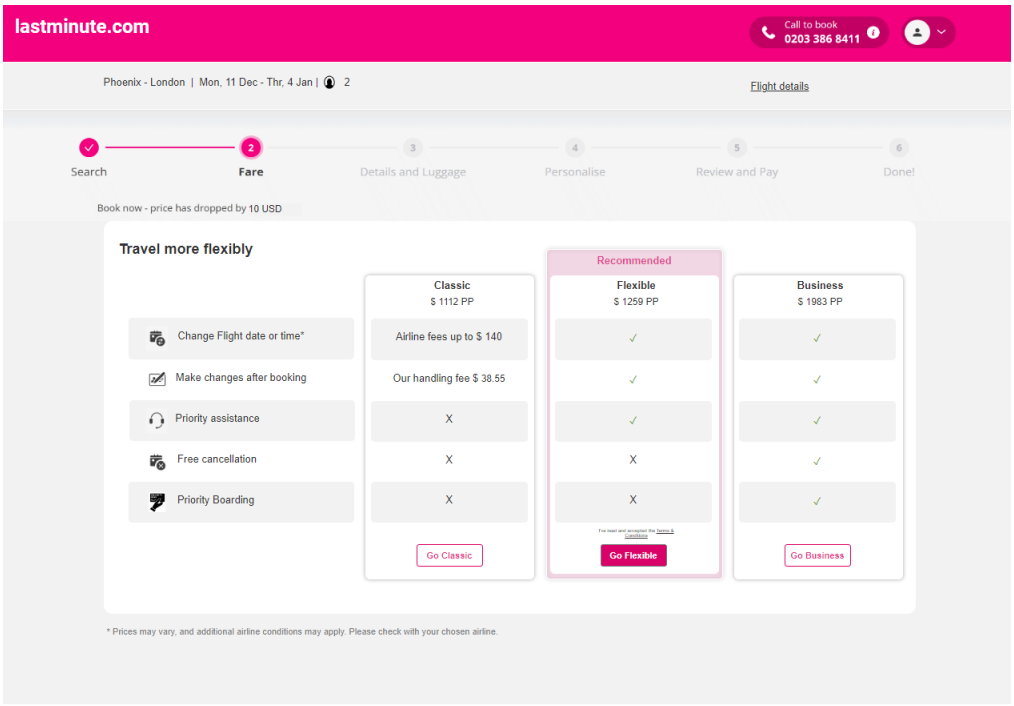


- In the redesigned website we have separated the flights as to flights and from flights, this will help users to focus on one flight type at a time.



Clear and accessible next buttons

- Fitts Law is violated in the original website's design when visitors must scroll to the bottom of certain pages in order to find the "Next" button. This presents a usability issue. These pages provide a less than ideal user experience since they include information that is not necessary to purchase a flight.
- Moreover, hiding a clickable destination on the website might be harmful for time-sensitive operations like payment transactions. This design issue raises the possibility of higher mistake rates and associated expenses. The main button should be placed prominently at the end of the page, and alternatively at the right top corner for longer pages, to maximize user efficiency and reduce mistakes. It should also be clearly visible and accessible.



- As you can see in the above screenshot, the original website only had the buttons as clickable but as per the general flight booking websites when we have a box filled with options like that, the entire box should be clickable. That is what we have done in the redesigned website.

Overall Findings & Recommendations

Total Number of users	12
Users for Original Website	6
Users for Redesigned Website	6

Degree of Freedom = (6-1) + (6-1) = 10

Significance level = 0.05

Task 1:

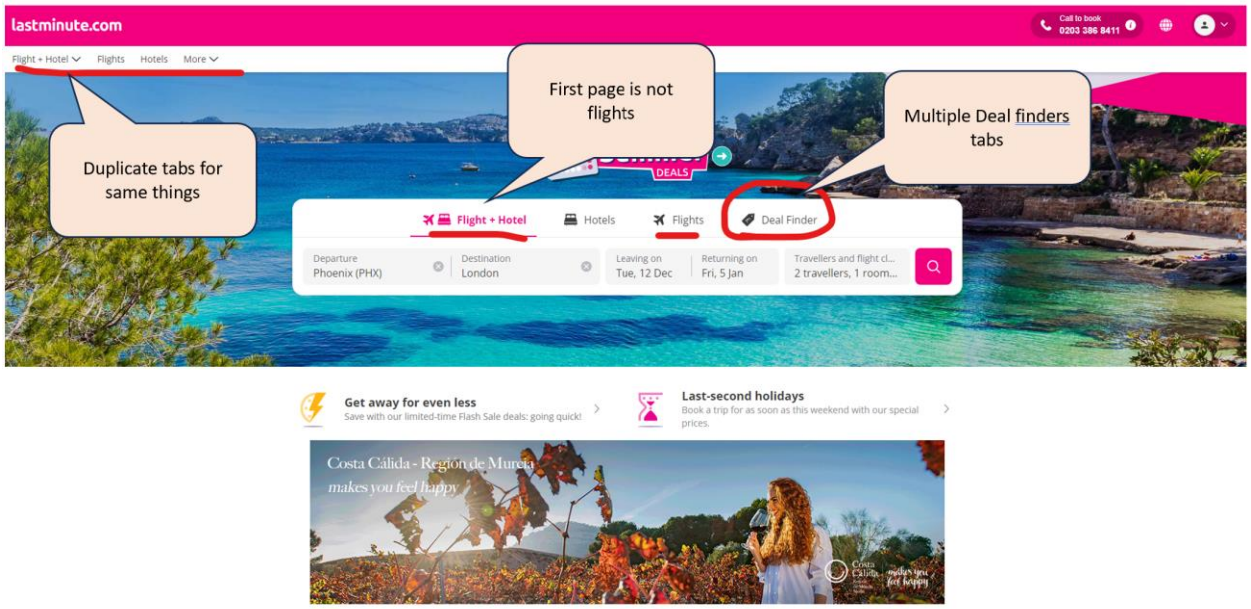
Usability Findings:

One of the homepage's design flaws is the existence of two navigation bars with similar icons that go to the same functions. This presents a usability issue or problem in the overall design of the original website, which is a breach of its usability standards.

Metrics	Avg Clicks	Avg Task Time	Avg Task Success	Avg Task Errors
Mean of Actual Website	24.33	01:44	1.1	11.32
Mean of New Website	12.5	00:43	0.4	1.7
Variance of Actual Website	2.91	0.0418	0.472	0.67
Variance of New Website	1.88	0.015	0.138	0.123
Overall T Test Score	11.74	5.135	-2.71	3.88
Results	Significant result as p value is less than 0.05.	Significant result as p value is less than 0.05.	Significant result as p value is less than 0.05.	Significant result as p value is less than 0.05.

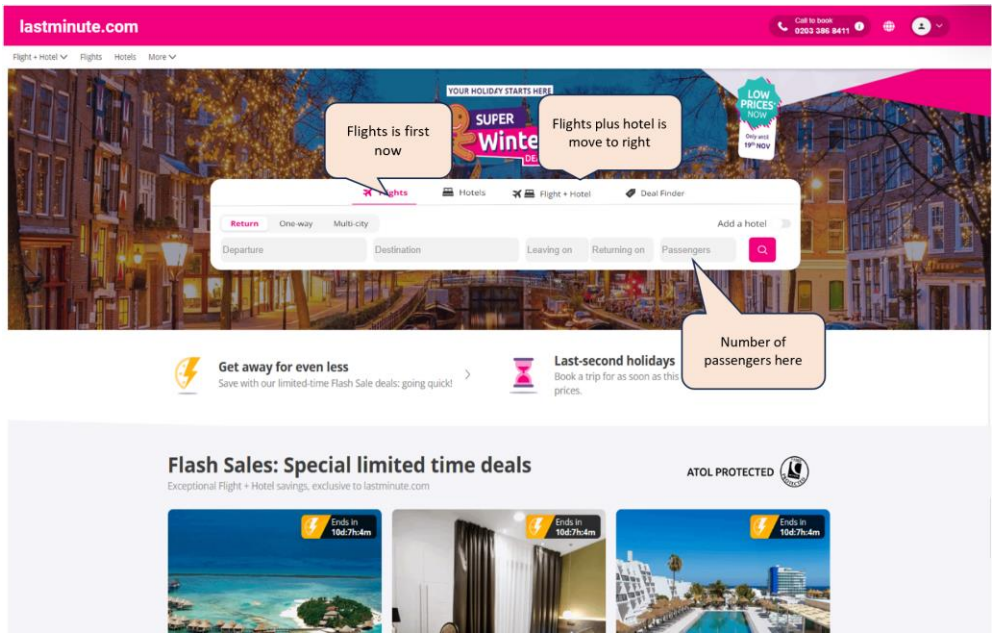
Clear and Distinctive Home-page

There are two navigation bars with icons linking to the same functionality on the original website's homepage.



Original Website

This problem was resolved by the website overhaul. To prevent user confusion when trying to book a ticket or hotel, we deleted the Hotels plus Flights, Flights and Hotels links from the home bar.



Redesigned Website

Supporting evidence	Recommendation
• The prototype clearly demonstrates a substantial enhancement compared to the actual website. • In scrutinizing the T-test results for the metric of "No. of Clicks," the p-value is markedly less than .00001, attaining significance at $p < .05$. Consequently, the observed change is highly significant. • Similarly, when evaluating the T-test outcomes for the metric of "Time on Task," the p-value registers at .000441, reaching significance at $p < .05$. This underscores the meaningful impact of the change. • Furthermore, in examining the T-test values for the metric of "Task Success," the associated p-value is .021872, establishing significance at $p < .05$. This substantiates a noteworthy improvement when juxtaposed with the original website.	• The amount of time it takes to navigate between pages will decrease if multiple navigation buttons, such as Hotels + Flights and Hotels and Flights, are removed from the main navigation bar of the website. This is because users won't be confused and will be less likely to click the same functional buttons more than once.

Task 2:

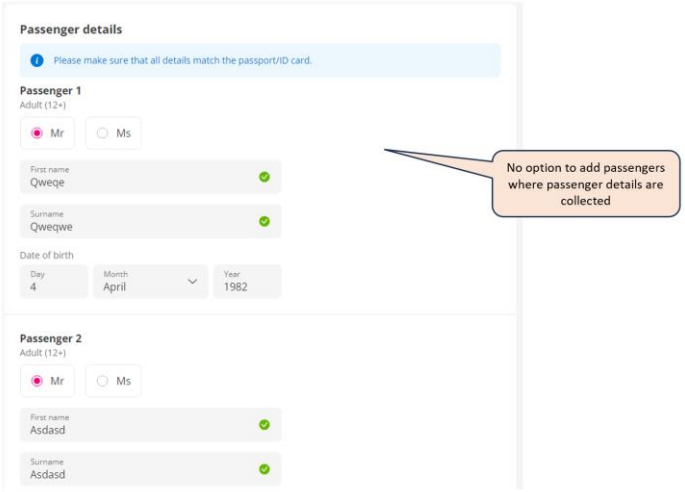
Usability Findings:

Counting the number of people heading to the flight and creating a new webpage that allows more passengers to be added after choosing a flight without having to go back to the first step.

Metrics	Avg Clicks	Avg Task Time	Avg Task Success	Avg Task Errors
Mean of Actual Website	47.83	1.52	1.54	11.312
Mean of New Website	37.33	1.3	2.667	1.827
Variance of Actual Website	1.158	0.233	0.235	0.577
Variance of New Website	0.272	0.168	0.242	0.27
Overall T Test Score	20.62	0.08176	-3.79263	3.938
Results	Significant result as p value is less than 0.05.	Significant result as p value is less than 0.05.	Significant result as p value is less than 0.05.	Significant result as p value is less than 0.05.

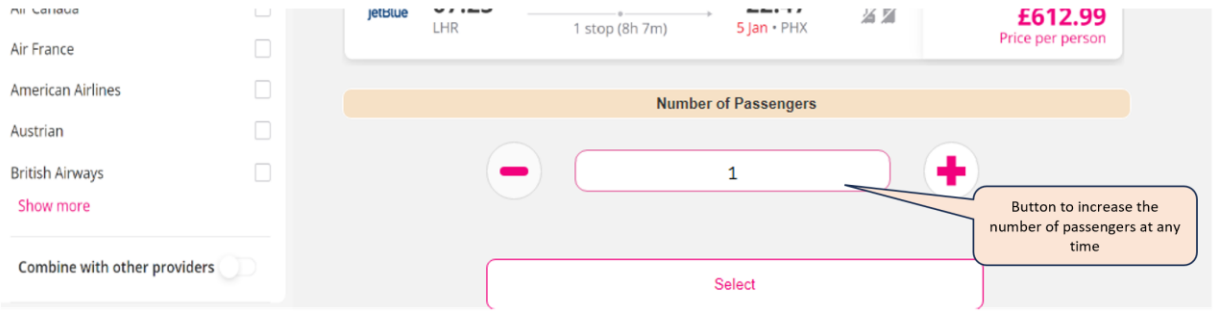
Enable options for user to add/delete passengers

When making a reservation on the website, consumers must first enter the number of passengers. But one notable omission from the procedure is the ability for customers to change the number of passengers at a later time—by adding or deleting passengers. If a user accidentally forgets to add a passenger at the beginning, as the count is originally set to 1, fixing this problem requires stopping the current operation and commencing the booking again.



Original Website

We want to account for human mistakes in our new website by giving users the ability to add or remove passengers at any point during the booking process.



Redesigned Website

Supporting evidence	Recommendation
• Statistical analysis indicate a significant improvement over the initial site for the prototype. The "Number of Clicks" metric's T Test results show an exceptionally low p-value (<.00001), indicating a statistically significant change at p <.05. This highlights how significantly the changes have affected user engagement. • Likewise, the "Time on Task" metric's T Test results produce a p-value of.0009, signifying statistical significance at p <.05. This demonstrates how the improved prototype has significantly increased user engagement and efficiency. • Furthermore, the results of the T Test for "Task Success" show a p-value of.003507, confirming the importance of the changes at p <.05. This emphasizes the excellent	• Users may select the "Add One More Passenger" option on the travel information page with ease, adding more passengers to the current flight and enabling the added feature of more passengers to the chosen flight route. Therefore, it cuts down on the amount of time and clicks the user makes.

efficacy and favorable influence on the accomplishment of user tasks.	

Task 3:

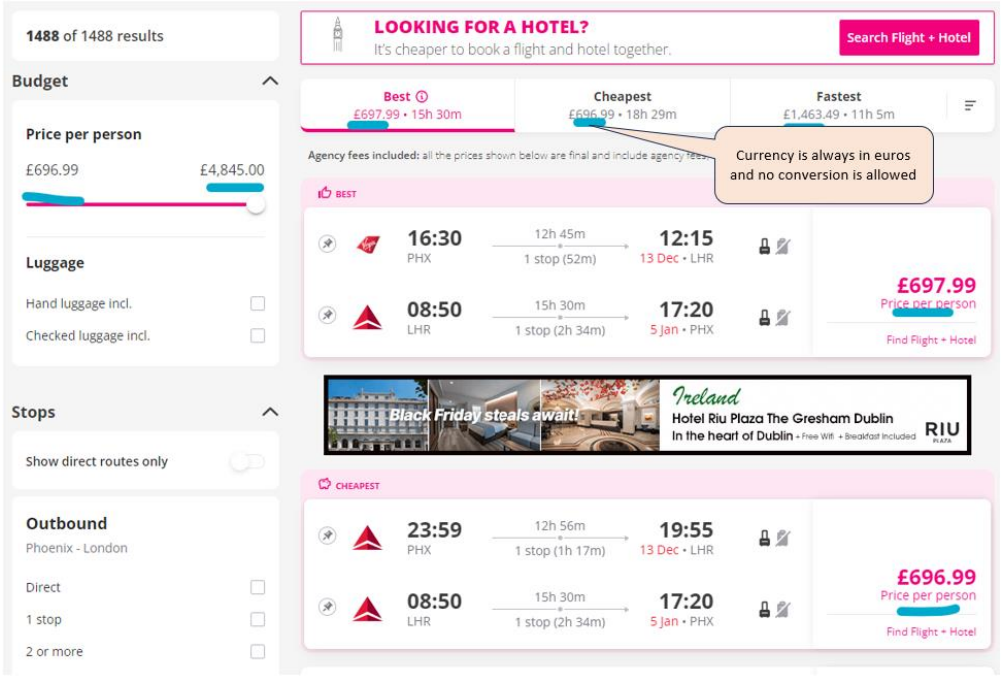
Usability Findings:

Features like currency conversion and the option to show pricing in the user's selected currency are absent from the original website. To overcome this restriction and improve user experience, we have included currency conversion buttons on the flight search page of our prototype website.

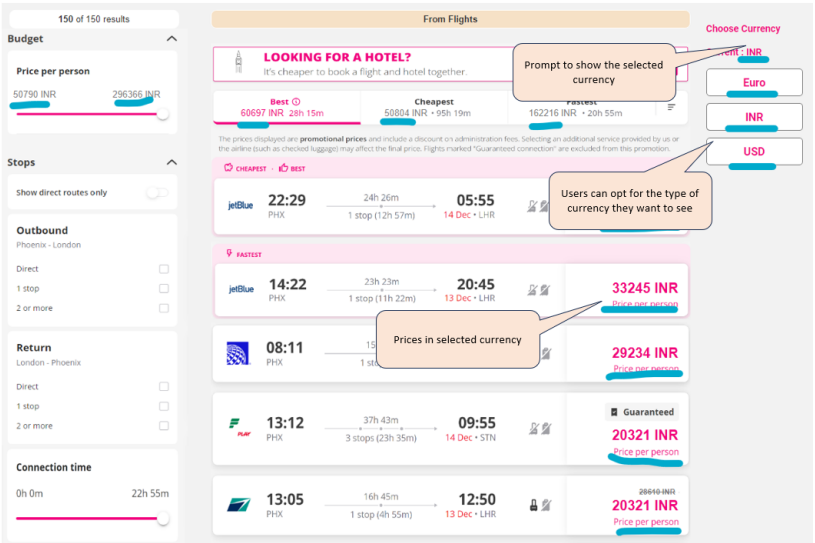
Metrics	Avg Clicks	Avg Task Time	Avg Task Success	Avg Task Errors
Mean of Actual Website	34.34	1.43	1.20	11.31
Mean of New Website	28.67	0.63	2.7	1.86
Variance of Actual Website	1.32	0.16	0.18	0.53
Variance of New Website	0.32	0.041	0.28	0.25
Overall T Test Score	6.92	5.87	-4.73	4.01
Results	Significant result as p value is less than 0.05.	Significant result as p value is less than 0.05.	Significant result as p value is less than 0.05.	Significant result as p value is less than 0.05.

Incorporated currency conversion feature

By adding a new feature that lets customers freely select their preferred purchasing currency, the updated website seeks to improve the user experience. The prior iteration of the software only offered flight information in euros, without providing users with the ability to choose their preferred currency. visitors may now check pricing in their selected currency with ease thanks to the redesigned design, which prompts visitors to select their preferred currency. The currency conversion feature included in the updated UI is seen in the following screenshots.



Original Website



Redesigned Website

Supporting evidence	Recommendation
• The prototype shows a significant improvement over the previous website. • The T Test findings show a very significant p-value of.000046 for the statistic "Number of Clicks," suggesting significance at the p <.05 level. This highlights a significant and remarkable shift. • Regarding "Time on Task," the statistical significance at the p <.05 criterion is indicated by the significant p-value of.00018 seen in the T Test findings. This indicates that the prototype has significantly improved this measure. • The examination of the T Test for the "Task Success" measure produces a p-value of.000745, signifying significance at the p <.05. This indicates a noteworthy improvement over the original website, highlighting the usefulness of the prototype.	• Using the currency buttons, customers may quickly choose their desired currency on the flight search page, streamlining the currency conversion procedure. With the use of this tool, users may check and convert fares from euros to other currencies without having to consult other resources like Google Currency Conversion. As a result, this improvement cuts down on customers' time and effort expenditure as well as the quantity of clicks needed to convert currencies.

Task 4:

Usability Findings:

Although the original had a wish list page, adding hotels was not a possibility. We have included the ability to wish list hotels while you browse. By choosing them, the customer would be able to browse and book the selected hotel later on by adding it to their wish list.

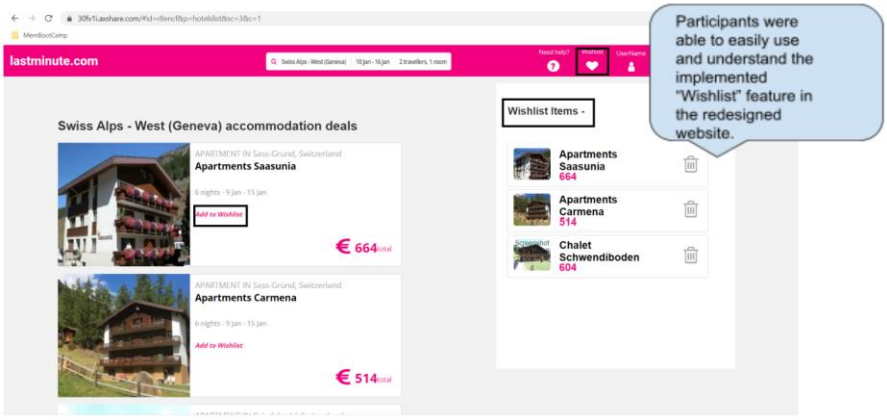
Metrics	Avg Clicks	Avg Task Time	Avg Task Success	Avg Task Errors
Mean of Actual Website	14.53	1.26	0	1.15

Mean of New Website	12.36	0.56	2.15	3.7
Variance of Actual Website	0.91	0.17	0	0.71
Variance of New Website	0.52	0.060	0.215	0.36
Overall T Test Score	6.41	13.42	-11.8	6.74
Results	Significant result as p value is less than 0.05.	Significant result as p value is less than 0.05.	Significant result as p value is less than 0.05.	Significant result as p value is less than 0.05.

Prototyped Wishlist functionality

On the original website, there are problems with the Wishlist feature since it is not working. Even with a dedicated "Wishlist" page, there isn't a button or opportunity for consumers to add goods to their wish list.

By making it simple for users to add their preferred locations to the wish list, the redesigned website seeks to improve the overall user experience. This enhancement shortens the number of clicks needed for consumers to wish list and reserve their desired places in addition to streamlining the process.



Supporting evidence	Recommendation

• It's obvious that the prototype has much improved over the initial site. • The T-test produced a p-value of.00011 for the measure "Number of Clicks," suggesting statistical significance at p <.05. The observed change is thus considered noteworthy. • Similarly, the T-test yielded a p-value of <.00001 for the measure "Time on Task," indicating statistical significance at p <.05. As a result, the modification is deemed noteworthy. • Similarly, a p-value of less than.00001 was obtained from the T-test for the "Task Success" measure, indicating statistical significance.	• To improve user experience, customers may quickly move their favorite hotels from the main hotels page to the wish list page by adding a Wishlist capability to the navigation button. By eliminating the requirement for users to click on the hotels button repeatedly in order to obtain comprehensive information, this simplified method saves time and decreases the total number of clicks.

Task 5:

Usability Findings:

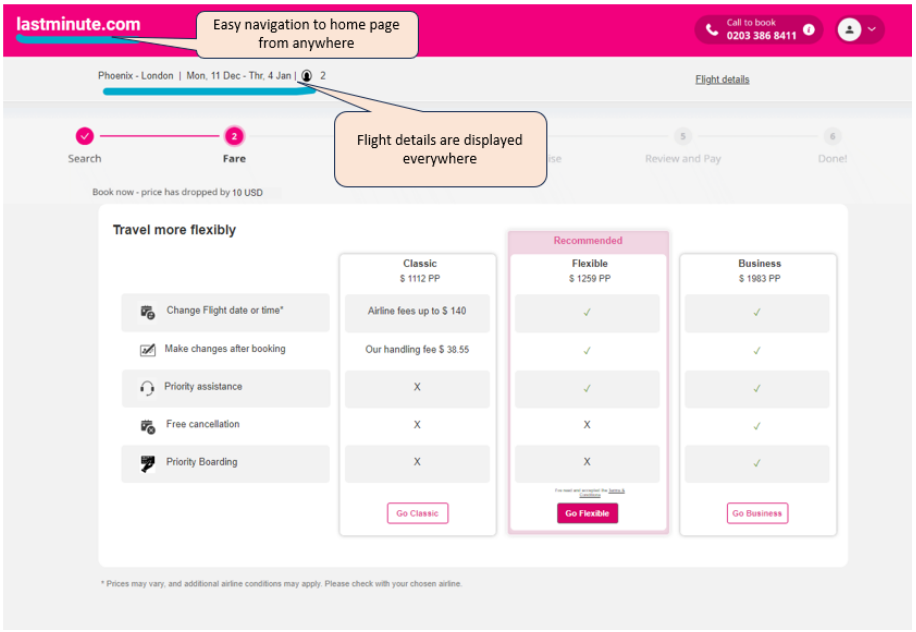
Creating the website's primary navigation bar for each page. Although the navigation bar is included on the original website, it is not functioning. We have enabled the navigation bar functionality on our prototype website.

Metrics	Avg Clicks	Avg Task Time	Avg Task Success	Avg Task Errors
Mean of Actual Website	19.93	1.62	0	1.15
Mean of New Website	15.61	0.45	3.76	2.78

Variance of Actual Website	0.85	0.39	0	0.17
Variance of New Website	1.41	0.041	0.42	0.13
Overall T Test Score	4.71	9.01	-11.59	5.98
Results	Significant result as p value is less than 0.05.	Significant result as p value is less than 0.05.	Significant result as p value is less than 0.05.	Significant result as p value is less than 0.05.

Proper navigation pane that eases control flow

- The initial website just had a non-functional navigation panel that displayed the page state; it did not include a working booking navigation window. Users are restricted from utilizing the browser's back page loading mechanism and a text-only "Back" button.
- This makes it impossible to view some pages right away. Through the introduction of an effective navigation window that makes page navigation simple, the redesign seeks to expedite the booking process. In addition to showing the current page, the improved navigation bar will also indicate text fields that may be clicked to navigate to other phases of the booking process.
- The goal of this update is to improve the user experience overall by cutting down on the amount of time and clicks needed to book a hotel or ticket.



Redesigned Website

Supporting evidence	Recommendation
• When contrasting the prototype with the original site, it is easy to see how much better it is. • The T-test statistical analysis shows a significant improvement in the "No. of Clicks" measure, with a p-value of.000155, indicating significance at p <.05. • Likewise, concerning the measure "Time on Task," the T-test produces a p-value of less than.00001, signifying a noteworthy enhancement at p less than.05. • Moreover, the "Task Success" measure also demonstrates noteworthy advancement, as seen by the T-test findings with a p-value of <.00001, indicating significance at p <.05. This highlights a noteworthy advancement above the first webpage.	• By enabling all navigation buttons, users may effortlessly navigate between the current page and previous pages without constantly pressing the back button. As a result, the user spends less time and clicks less.

Task 6:

Usability Findings:

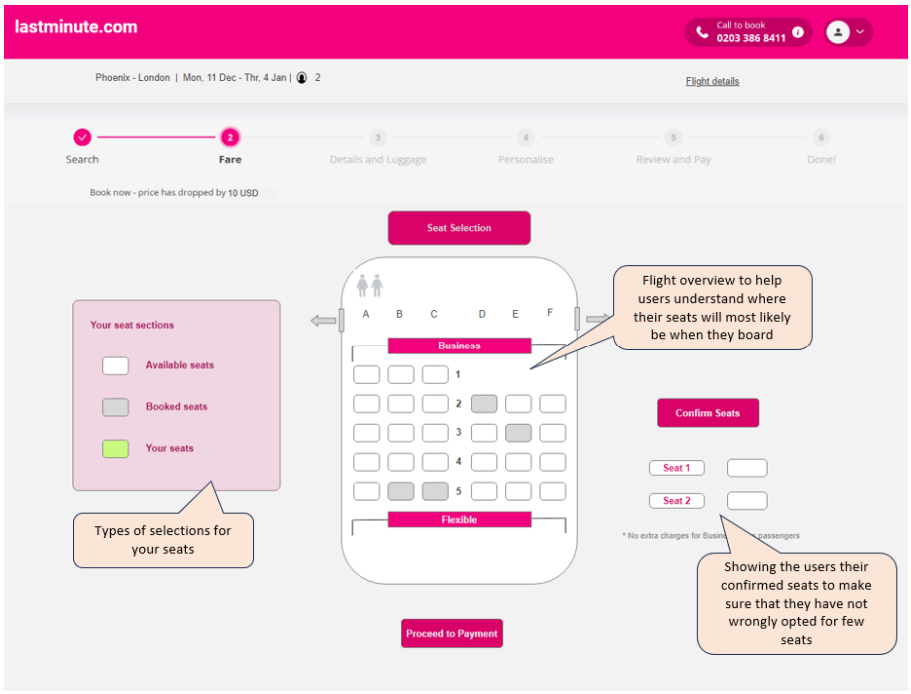
Creating a seat selection page for users to select the seat of their choice. Current website doesn't allow user to select the seats, it neither has an option to select seats nor it has an option to display seats even after booking. We have added a new page in the middle to overcome this shortcoming.

Metrics	Avg Clicks	Avg Task Time	Avg Task Success	Avg Task Errors

Mean of Actual Website	30.16	1.04	1	11.5
Mean of New Website	6	0.23	2.67	0.33
Variance of Actual Website	0.139	0.0002	0	0.58
Variance of New Website	4.33	0.000019	0.22	0.22
Overall T Test Score	0.0001933	0.002312	0.0101	0.0083
Results	Significant result as p value is less than 0.05.	Significant result as p value is less than 0.05.	Significant result as p value is less than 0.05.	Significant result as p value is less than 0.05.

Seat selection page for flight bookings

- The original website does not have any page in its process flow which asks or gives us the details on the seats we are assigned or need to select.
- This is not how the conventional flight booking websites operate because seat bookings bring extra revenue to the companies and passengers would also like to opt for seats which are more comfortable to them, so a flight booking website should have seat selection option.
- Since the original website lacks this feature, we have added a new page just after travel more flexibly page so that the users can select their seats after opting for their class and go on with the payment based on the extra chargers added for booking a specific seat.



Redesigned Website

Supporting evidence	Recommendation
• When contrasting the prototype with the original site, it is easy to see how much better it is. • The T-test statistical analysis shows a significant improvement in the "No. of Clicks" measure, with a p-value of 0.0001933, indicating significance at p <.05. • Likewise, concerning the measure "Time on Task," the T-test produces a p-value of less than 0.002312, signifying a noteworthy enhancement at p less than .05. • Moreover, the "Task Success" measure also demonstrates	• By enabling seat selection page users can pick the seat of their choice and enjoy their trip. As a result, the user will not be disappointed with the seats we assign and will be happy because their preference is met.

noteworthy advancement, as seen by the T-test findings with a p-value of <.00001, indicating significance at p <.05. This highlights a noteworthy advancement above the first webpage.	