

Human-Computer Interaction

CAA1:

Research: exploring the scenario.

UOC

Universitat Oberta
de Catalunya

Daniel Jesús del Río Cerpa
Bachelor's degree in Techniques for Software
Application Development



Index

Introduction	Page 3
1. User profile	Page 4
2. Research into competition	Page 6
3. Basic Aspects of Human-Computer Interaction	Page 9

Introduction

In this paper we are going to present the research phase of the scenario for the creation of our future interface. Therefore, it is focused on understanding who are the users who are going to use our service, analysing the tools that are currently being used and understanding how the basic aspects of human-computer interaction are being used. Therefore, the work is divided into three sections: delimiting user profiles, benchmarking, and identification of basic aspects of Human-Computer Interaction.

With the user profiles described, we are going to develop our interface in future challenges. Then we are going to do an analysis of the competition through benchmarking method and observing the positive and negative insights. And finally, we are going to see the basic characteristics of the interfaces of other competing portals.

1.User profile

For this task, I have chosen two user profiles with different characteristics, considering different age groups, income and without losing the gender perspective. Similarly, they have different demographics and behaviors. And all this information is reflected through a scheme divided into: Name and image, list of behaviour, Demographics and Needs and Goals.

Proto-persona 1

“Sabina”



Behaviors

- Never organize anything on the fly
- She only likes to travel in the summer months
- Does not control information technology very well
- Doesn't use social media a lot.

Demographics

- 22 years old
- Single
- Studies Bachelor's degree of education
- lives alones in an apartment owned by the family
- Apartment located in Madrid.
- She does not work and his parents give her a salary of 2000 euros per month.

Needs and Goals

- She would like to compare airlines
- She would like to buy the seats in the flight ticket application
- She likes original trips

Proto-persona 2

“Nicolás Montaña”



Behaviors

- He is very active on social media.
- He travels with his family whenever he can.
- He goes for a run 3 times per week
- always drink vermouth before eating
- Control information and communication technologies

Demographics

- 35 years old
- Married. 1 son (11 years old)
- Works in CaixaBank
- Lives in Palma de Mallorca.
- Earns 28 000 euros per year

Needs and Goals

- He would like to have the option of change and call off the flight
- He would like to select the seats

2. Research into competition

In this section we are going to analyse the competition, specifically the Google Flights, Edreams and Skyscanner pages. First, I will use the benchmarking method, which consists of defining a series of criteria to analyse the interfaces of our competitors. And then, I am going to detect positive and negative insights that I will consider in the future to design my interface.

Benchmarking

	Skyscanner	Edreams	Google flights
MULTIPLE DESTINATIONS			
Allow searching flights with multiple destinations.	✓	✓	✓
PRICE			
Allow to watch price of round-trip flight.	✓	✓	✓
FLIGHT SERVICES			
Show the type of food served in the flight.	✗	✗	✗
Show the purchase of services in the flight.	✗	✗	○
FLIGHT CONDITIONS			
Allow to select the seat	✗	✓	○
Allow to call off the flight	✗	○	✗
Show flights with hand baggage included	✗	✓	✓
Allow to change the flight	✗	✓	✗
Allow to choose priority boarding ticket.	✓	✓	✓
FLIGHT ROUTE			

The site shows flights with stopovers	✓	✓	✓
Allow to watch the airlines available for the route and select it	✓	✓	✓
Allow to select the class	✓	✓	✓
Allow to see arrival and departure time	✓	✓	✓
ANOTHER ACTIONS			
Allow to turn on an alert due to price drop.	✓	✓	✓
Allow to compare routes from different airlines.	✓	✓	✓
Allow to watch the requirements for entering to the destination	✗	✗	✗

Insights

Insights of Edreams

Positive insights	Negative insights
When you book a flight, you can select the seat where you want to sit on the plane.	You can not search a general destination. You must choose city where you will travel, so it's not possible to write exclusively Vietnam.
The web allows to change and call off a flight.	Web doesn't allow to see the requirements for getting in the destination.
You can buy the flights in the same page, so you do not need to go to another web sites.	You can not see what services are offered in the flight

Insights of Skyscanner

Positive insights	Negative insights
You can search exclusively the country where you want to go.	In the web there is not information about hand baggage and checked baggage. So, probably you must go to another web for seeing the true price.
You can choose flights with multiple destinations.	You can not buy the flight in the web, but the page sends you to another places (another webs)
Allow to compare routes from different airlines.	There is no information about services in the flight

Insights of Google flights

Positive insights	Negative insights
You can compare routes from different airlines	You cannot select the seat.
Show the stopovers	You can not watch requirements for getting in the destination
Allow to see arrival and departure time	There is no information about services in the flight.

3. Basic Aspects of Human-Computer Interaction

Next, I am going to identify the 6 aspects of Human-Computer Interaction in the selected apps: Google flights, Edreams and Skyscanner. However, first I will briefly explain what the following aspects consist of: metaphor, affordance, visibility, feedback, constraint, and mental model.

- **Metaphor:** Consists in the use of an analogy for representing a concept that is not explained literally, but it is represented in a figurative sense.
- **Affordance:** The capability of the object for suggesting its own use. In this case, It is related to how the elements of the interface are shown to the User for easing the use of the application.
- **Visibility:** It is related to the characteristics that objects have for being perceived by users.
- **Feedback:** It is the answer of the objects due to our interaction with them. Then, this aspect gives us the current state of the product.
- **Constraint:** It is referred to the limitation that we have in a program.
- **Mental model:** It consists of the use of mental representations to interact with the information we receive from the outside.

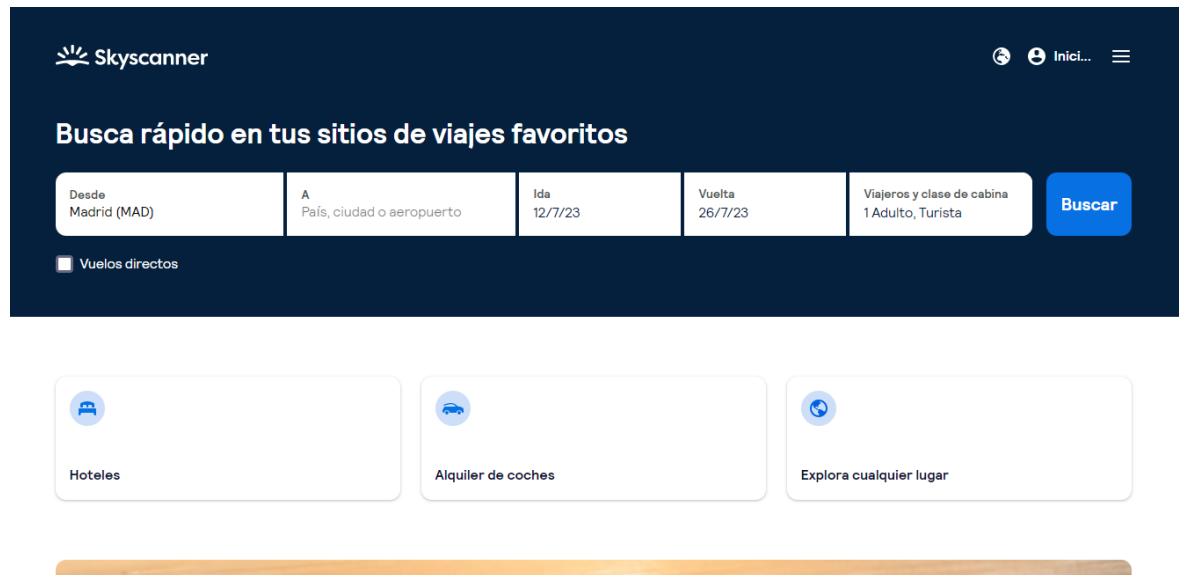
Nevertheless, these principles are not exclusive, but some of them share elements shown in the interfaces since some of them can not been understood without another.

Skyscanner



Metaphor

In this case, we can find a metaphor under the search engine of the page. We find a metaphor of a bed to indicate that in this option we can search for hotels.



Skyscanner

Busca rápido en tus sitios de viajes favoritos

Desde Madrid (MAD) A País, ciudad o aeropuerto Ida 12/7/23 Vuelta 26/7/23 Viajeros y clase de cabina 1 Adulto, Turista **Buscar**

☐ Vuelos directos

Hoteles Alquiler de coches Explora cualquier lugar

Affordance

In this case, we find a perceptible affordance, and that is also explicit since it communicates to us the action that we must take. We can see it with the "Search" button, which is located to the right of the search bar.



Desde Madrid (MAD) A País, ciudad o aeropuerto Ida Añadir fecha Vuelta Añadir fecha Viajeros y clase de cabina 1 Adulto, Turista **Buscar**

Visibility

On Skyscanner, the principle of visibility is observed with the progress indicator bar, which appears once we look up the dates and destination of our flight.



Pueden aplicarse cargos adicionales por equipaje

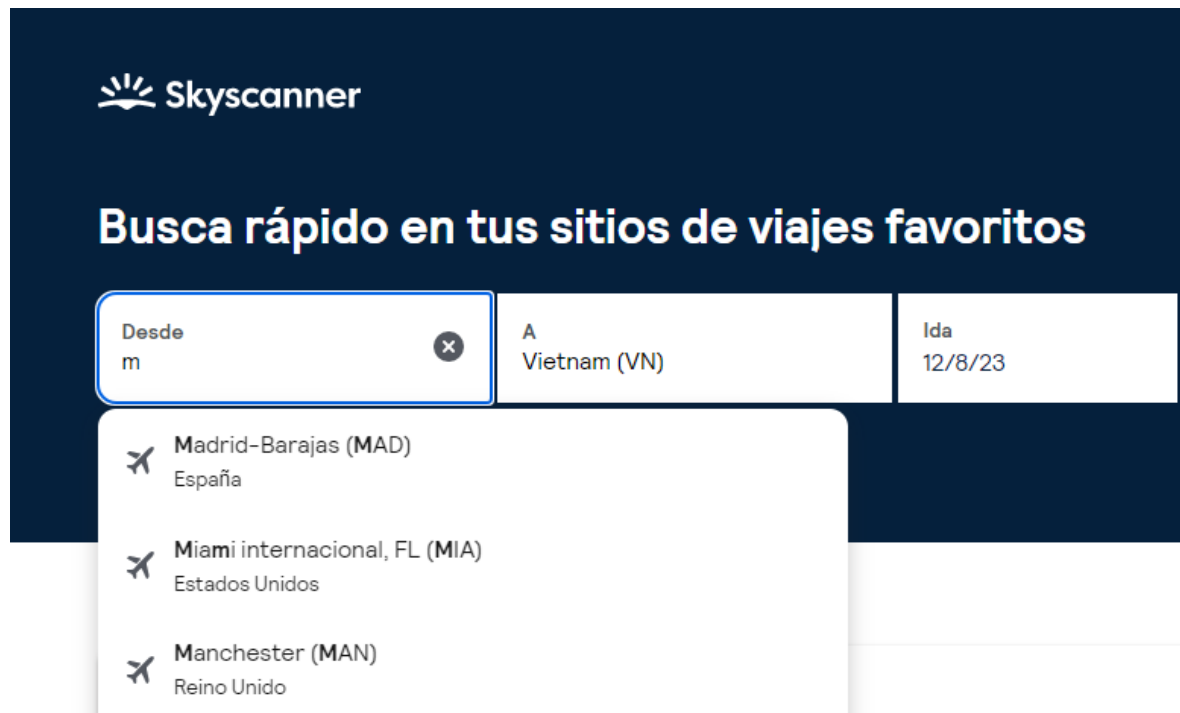
(19 de 29 proveedores)

Ordenar por Mejor opción

Mejor opción	Opción más barata	Opción más rápida
\$1.558 ⓘ	\$1.303	\$1.558
17 h 20 min (media)	21 h 33 min (media)	17 h 20 min (media)

Feedback

On Skyscanner you can see that, as you complete the search box, the web gives you options to complete the content according to the letters you have already written. For example, if an "M" is written, the page generates a window below with destinations that start with that letter.



The screenshot shows the Skyscanner website interface. At the top, the Skyscanner logo is visible. Below it, the heading "Busca rápido en tus sitios de viajes favoritos" is displayed. The search form consists of three main fields: "Desde", "A", and "Ida". The "Desde" field contains the letter "m" and has a dropdown menu open below it. The dropdown menu lists three destinations: "Madrid-Barajas (MAD) España", "Miami internacional, FL (MIA) Estados Unidos", and "Manchester (MAN) Reino Unido". The "A" field contains "Vietnam (VN)" and the "Ida" field contains "12/8/23".

Constraint

In Skyscanner, there is an example of Constraint when choosing the number of passengers, since it does not allow less than one adult for the search, even if there is a child, it does not allow selecting it since it considers the age restrictions of the airlines.

Vuelta
26/8/23

Viajeros y clase de cabina
1 Adulto, Turista

Buscar

Clase de cabina
Solo podemos mostrar precios en clase turista para esta búsqueda.

Para ver las opciones de clase business y primera clase, especifica las fechas de viaje o el destino.

Adultos
Mayor de 16 años

- 1 +

Niños
De 0 a 15 años

- 0 +

En el momento del viaje, tu edad debe ser válida para la categoría de edad en la que has hecho la reserva.
Las aerolíneas tienen restricciones para los menores de 18 años que viajan solos.

Mental Model

At the bottom of the page, Skyscanner uses the principles of similarity and proximity. In the section of the most popular destinations, elements are very close to each other, in order that these objects are understood as a whole. In the same way, they share the same characteristics (font and box style) because perceptively people tend to group these elements.

Popular ahora

A otros viajeros les encantan estos destinos. Busca vuelos, hoteles y coches de alquiler y únete a la aventura.



Las Vegas

[Vuelos](#) • [Hoteles](#) • [Alquiler de coches](#)



Miami internacional

[Vuelos](#) • [Hoteles](#) • [Alquiler de coches](#)



Nueva York

[Vuelos](#) • [Hoteles](#) • [Alquiler de coches](#)



Los Ángeles

[Vuelos](#) • [Hoteles](#) • [Alquiler de coches](#)



Chicago

[Vuelos](#) • [Hoteles](#) • [Alquiler de coches](#)



Denver

[Vuelos](#) • [Hoteles](#) • [Alquiler de coches](#)



Oriundo Florida

[Vuelos](#) • [Hoteles](#) • [Alquiler de coches](#)



Washington D. C.

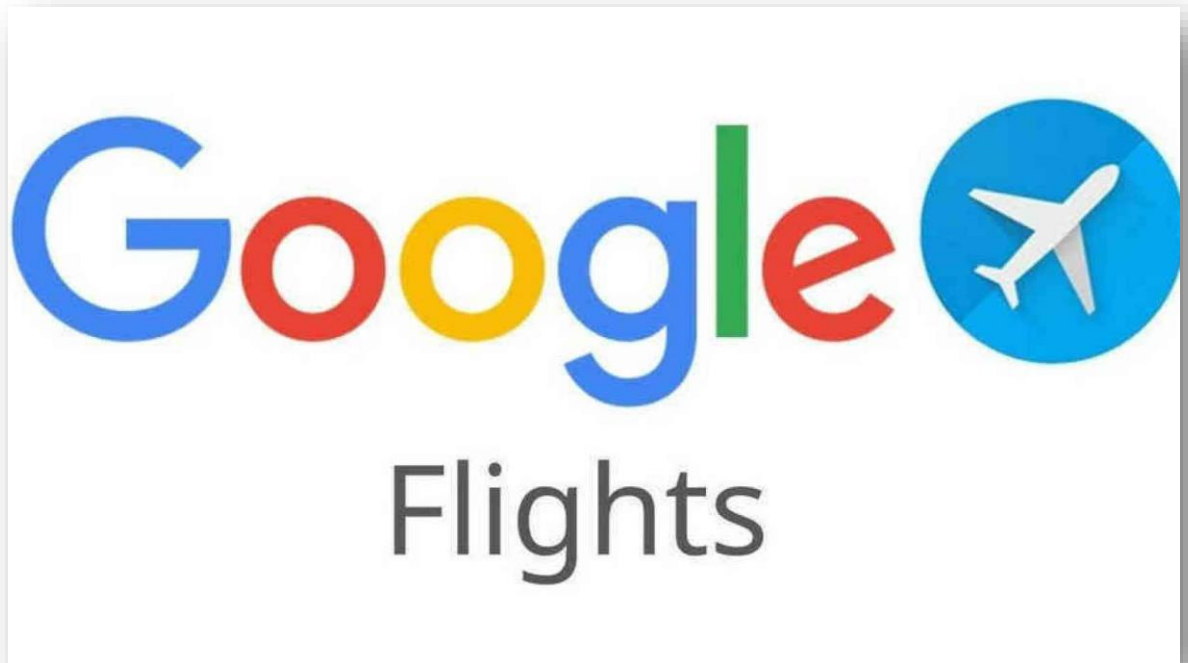
[Vuelos](#) • [Hoteles](#) • [Alquiler de coches](#)



Atlanta

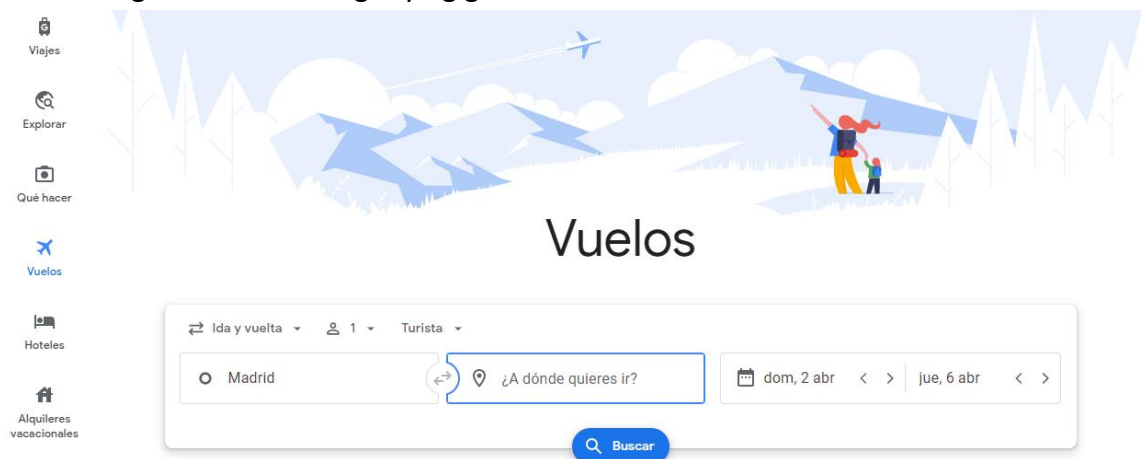
[Vuelos](#) • [Hoteles](#) • [Alquiler de coches](#)

Google Flights



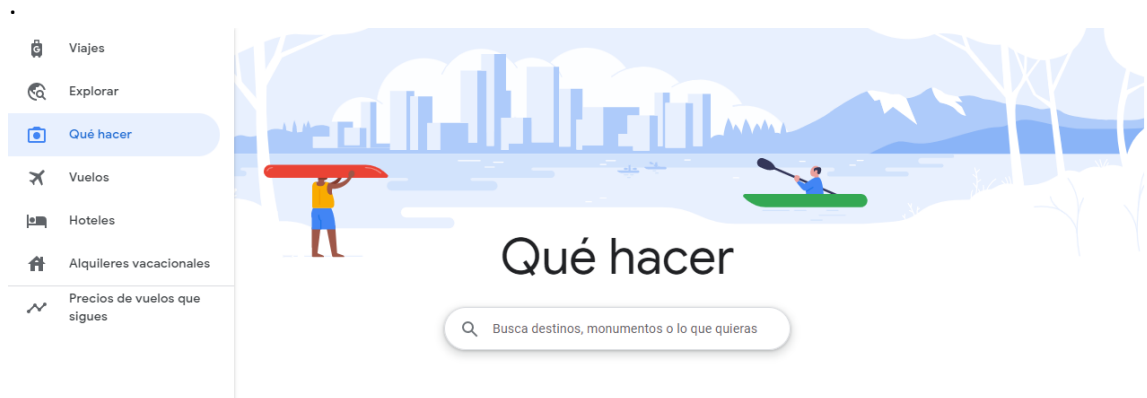
Metaphor

On Google Flights we find many metaphors. For example, in the sidebar we find a camera to search for plans, and a house to search for housing rentals. On the other hand, in the search engine we see a magnifying glass at the bottom.



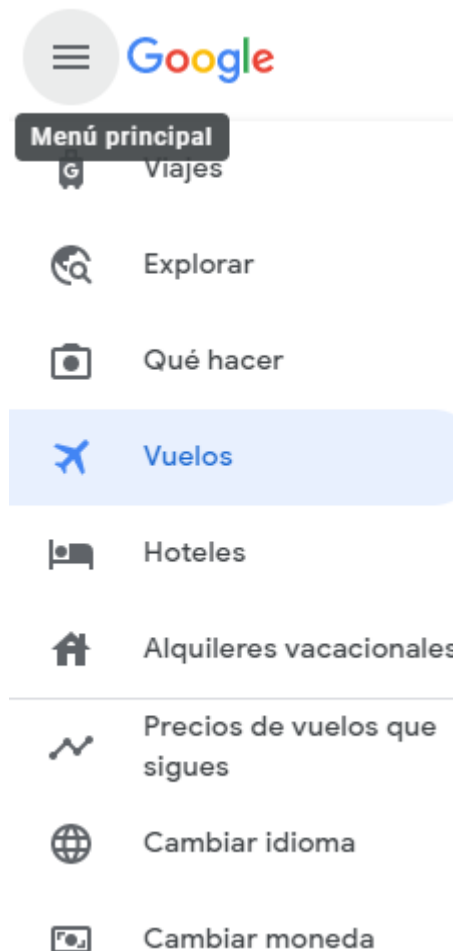
Affordance

In the case of Google, there are several metaphorical affordances in the sidebar. But as an example, it is possible to take the camera in the sidebar.



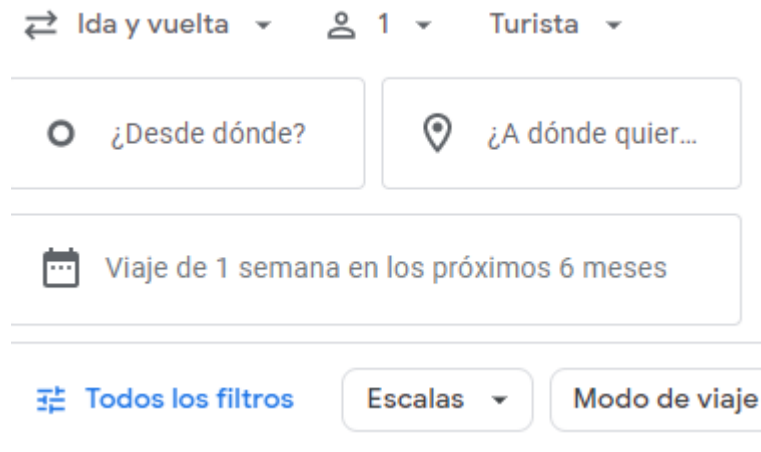
Visibility

In the case of Google Flights, an example of visibility could be the hamburger menu that is in the upper left corner of the screen, which displays multiple options beyond the main interface.



Feedback

When a search is made in Google Flights, a window with a loading circle appears below the search engine, indicating that the search engine is processing, to then give us the search result.

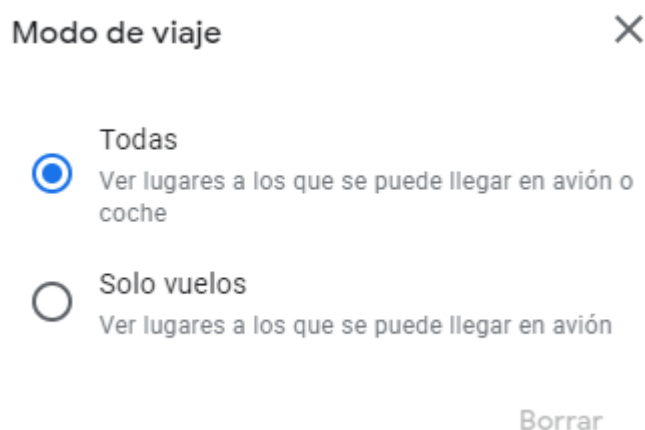


The image shows the Google Flights search interface. At the top, there are three dropdown menus: 'Ida y vuelta' (round trip), '1' (number of passengers), and 'Turista' (tourist). Below these are two input fields: '¿Desde dónde?' (From where?) and '¿A dónde quier...' (Where to?). Underneath is a date selector showing 'Viaje de 1 semana en los próximos 6 meses' (Trip of 1 week in the next 6 months). At the bottom, there are three buttons: 'Todos los filtros' (All filters), 'Escala' (Stopover), and 'Modo de viaje' (Travel mode).



Constraint

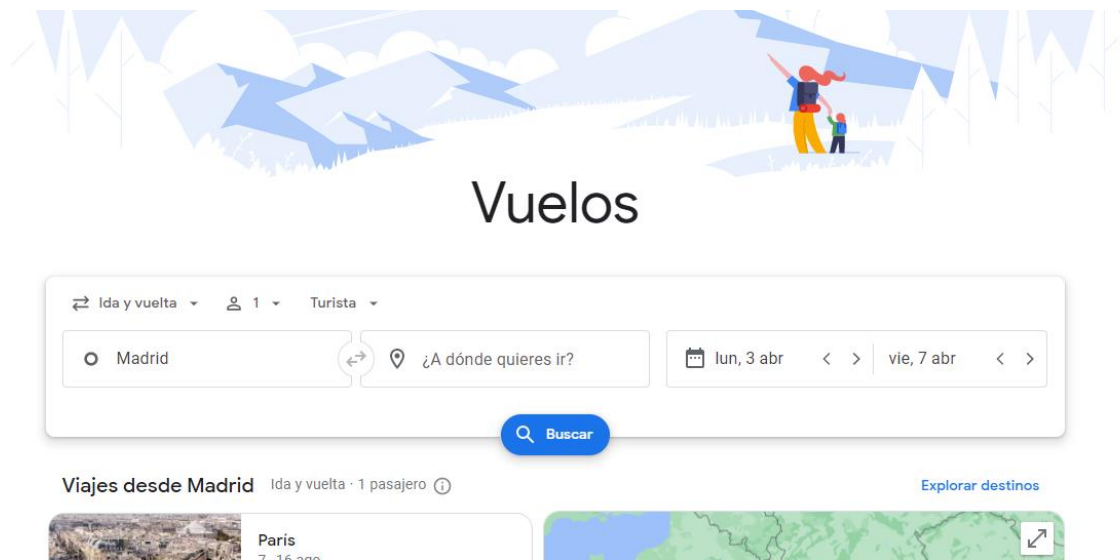
When travel modes are chosen in Google flights, web disables the delete button when the "all" option is chosen. In this way, the interface saves the logical sense of the search since it can only be deleted when there is a specific selection.



The image shows the 'Modo de viaje' (Travel mode) selection interface. It has a title 'Modo de viaje' and a close button 'X'. There are two radio button options: 'Todas' (All) and 'Solo vuelos' (Only flights). The 'Todas' option is selected, and its description is 'Ver lugares a los que se puede llegar en avión o coche' (See places that can be reached by plane or car). The 'Solo vuelos' option is unselected, and its description is 'Ver lugares a los que se puede llegar en avión' (See places that can be reached by plane). At the bottom, there is a 'Borrar' (Delete) button.

Mental Model

On Google Flights there is an example of the Common Region principle. The search engine area is delimited by a closed area, this wants to create the perception that the interior elements are together.

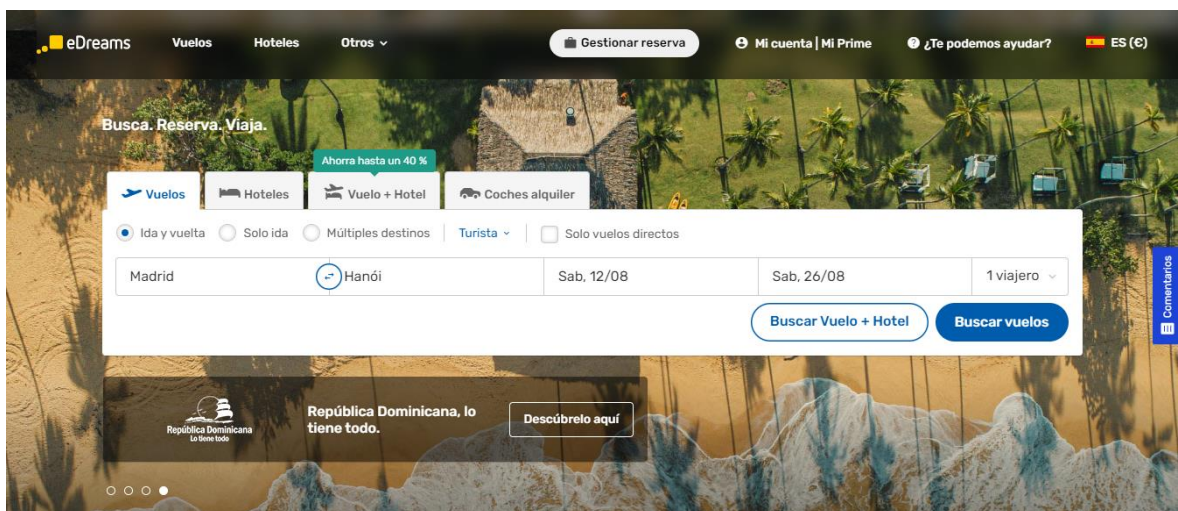


Edreams



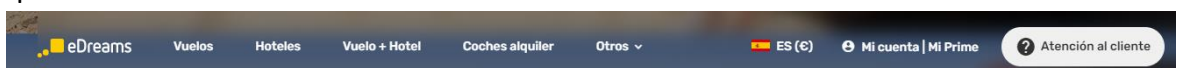
Metaphor

On Edreams we find several metaphors when entering the page. If we look above the search engine, we find several tabs where there is a plane to search for flights, a car to search for rental cars and a bed and a plane to search for flights and hotels.



Affordance

In this case, there is an element that has a metaphorical and explicit design, such as the "customer service" button (suggesting the action it performs) that is accompanied by a question mark.



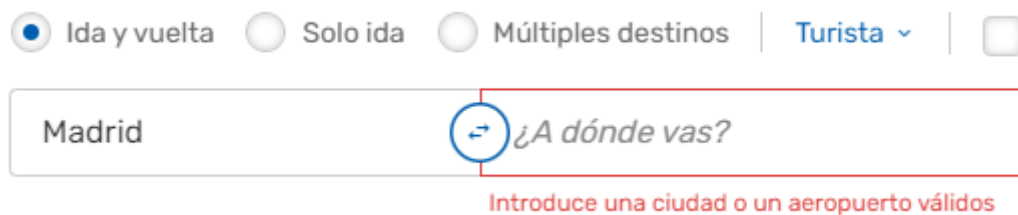
Visibility

An example of the principle of visibility can be found in Edreams with a tab bar at the top of the search engine, where the elements of most interest to the user are found.



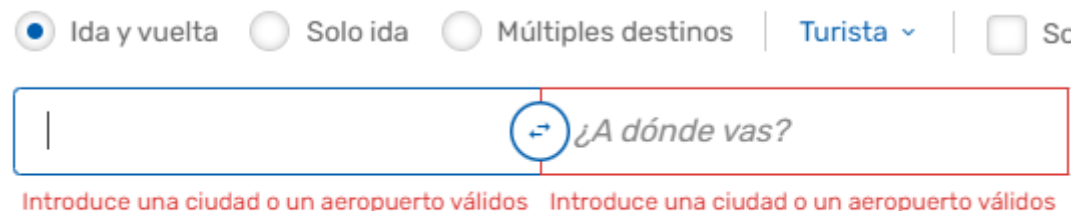
Feedback

On Edreams there is a visual answer in the search box. If the destination data is placed correctly, the box remains in its base state. But if something is missing or the information is not correct, it appears red.



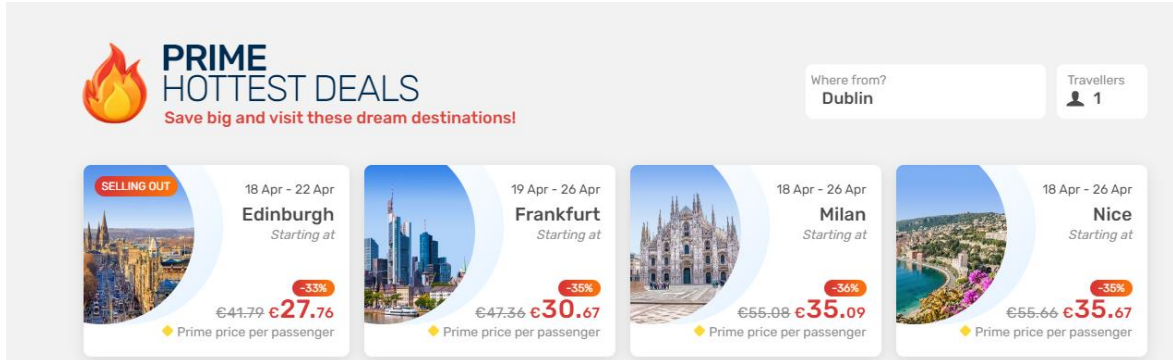
Constraint

On Edreams, we can take the previous example of feedback to give an example of the constraint, so when we do not write the destination data in the search engine, the box automatically turns red and a message appears under the search boxes indicating that it is not a valid criterion has been written



Mental model

On Edreams we can find the law of simplicity with the symbol of the flame to warn that there are offers. They use a symbol that people normally assimilate as an alert or warning so that this opportunity does not go unnoticed.



The screenshot shows a promotional banner for "PRIME HOTTEST DEALS" on the Edreams website. The banner features a flame icon and the text "Save big and visit these dream destinations!". It includes search filters for "Where from? Dublin" and "Travellers 1". Below the banner are four destination cards, each with a circular image, travel dates, destination name, starting price, discount percentage, and prime price per passenger.

Destination	Dates	Starting at	Discount	Prime price per passenger
Edinburgh	18 Apr - 22 Apr	€41.79	-33%	€27.76
Frankfurt	19 Apr - 26 Apr	€47.36	-35%	€30.67
Milan	18 Apr - 26 Apr	€55.08	-36%	€35.09
Nice	18 Apr - 26 Apr	€55.66	-35%	€35.67