



ON THE IMPACT OF USING DIFFERENT TEMPLATES ON CREATING AND UNDERSTANDING USER STORIES

Catarina Gralha, Rita Pereira, Miguel Goulão, João Araújo
Universidade NOVA de Lisboa, Portugal

24 September, 2021



USER STORIES ARE **SHORT** AND **SIMPLE** DESCRIPTIONS OF A SOFTWARE SYSTEM FEATURE, WRITTEN IN **NATURAL LANGUAGE**

USER STORIES ARE USED TO DOCUMENT FEATURES AND FOR COMMUNICATION WITH DIFFERENT STAKEHOLDERS



A close-up photograph of a person's hand holding a single, blank yellow sticky note. The hand is positioned in the lower-left foreground, with the thumb and index finger gripping the bottom edge of the note. In the background, a wall is covered with numerous other similar yellow sticky notes, creating a grid-like pattern that suggests a collaborative workspace or planning session.

THERE ARE **TEMPLATES** TO FACILITATE THE **UNDERSTANDING** OF
USER STORIES AND **AVOID AMBIGUITY**

USER STORIES: CON TEMPLATE

As a <type of user>, I want <goal>, so that <benefit>

USER STORIES: CON TEMPLATE

As a <type of user>, I want <goal>, so that <benefit>

“As a user, I want to access my account, so that I can manage my money”

USER STORIES: BEN TEMPLATE

In order to <benefit>, as a <type of user>, I want <goal>.

USER STORIES: BEN TEMPLATE

In order to <benefit>, as a <type of user>, I want <goal>.

“In order to manage my money, as a user, I want to access my account”

USER STORIES: PER TEMPLATE

As <persona>, I want to <goal>, so that <benefit>.

USER STORIES: PER TEMPLATE

As <persona>, I want to <goal>, so that <benefit>.

“As Yasmin, I want to access my account, so that I can manage my money”

USER STORIES: PERBEN TEMPLATE

In order to <benefit>, as <persona>, I want <goal>.

USER STORIES: PERBEN TEMPLATE

In order to <benefit>, as <persona>, I want <goal>.

“In order to manage my money, as Yasmin, I want to access my account”



RESEARCH QUESTIONS

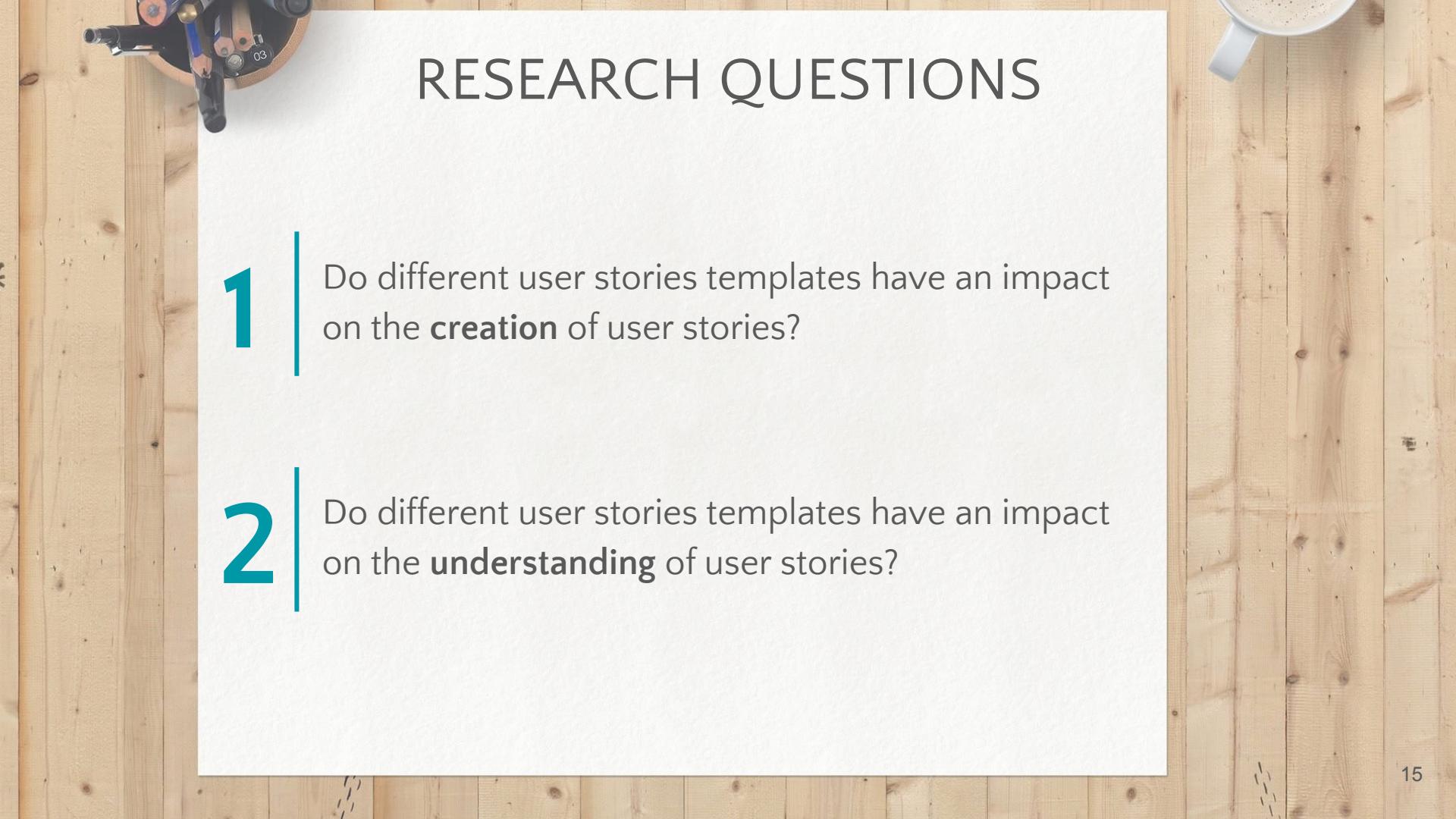




RESEARCH QUESTIONS

1

Do different user stories templates have an impact
on the **creation** of user stories?



RESEARCH QUESTIONS

1

Do different user stories templates have an impact
on the **creation** of user stories?

2

Do different user stories templates have an impact
on the **understanding** of user stories?

QUASI-EXPERIMENT WITH A COMBINATION OF MEASUREMENTS

QUASI-EXPERIMENT WITH A COMBINATION OF MEASUREMENTS



41 participants
10 per template
(*11 with PERBEN)

QUASI-EXPERIMENT WITH A COMBINATION OF MEASUREMENTS



41 participants
10 per template
(*11 with PERBEN)



1 eye-tracker

QUASI-EXPERIMENT WITH A COMBINATION OF MEASUREMENTS



41 participants
10 per template
(*11 with PERBEN)



1 eye-tracker



booking system
for an hotel

QUASI-EXPERIMENT WITH A COMBINATION OF MEASUREMENTS



41 participants
10 per template
(*11 with PERBEN)



1 eye-tracker



booking system
for an hotel



website for
content sharing

CREATION AND UNDERSTANDING TASKS

Please write user stories that describe what Amy wants

PICTURE & NAME	DETAILS	GOAL
 Amy	<ul style="list-style-type: none"> Is 28 years old. Wants to travel the world. Values friends, family and organization. Fears having no plans and no time to travel. 	<ul style="list-style-type: none"> Wants an easy way to book trips and get the best deals. Needs quick access to her reservations.

A website allows its users to book hotels for their trips. People who visit the website can choose the arrival and the departure date of their stay, as well as the number of people traveling and the city they want to visit. Given that not all people will have the same budget, during the search, it's possible to set price limits. The user must be registered so that he can make reservations. The website also offers extra services such as car rental and extra activities. In the customer area, the user can access all bookings made and make changes, if desired. Payments can be made by credit card or PayPal. If the user wants to cancel reservations, he can only do it until 3 days before the arrival date and only 75% of the money will be refunded. Once in a while, the website offers vouchers to some users so they can discounts.

Insert answer here

[Continue >>](#)

Please write the user stories necessary to describe this system

A website allows its users to book hotels for their trips. People who visit the website can choose the arrival and the departure date of their stay, as well as the number of people traveling and the city they want to visit. Given that not all people will have the same budget, during the search, it's possible to set price limits. The user must be registered so that he can make reservations. The website also offers extra services such as car rental and extra activities. In the customer area, the user can access all bookings made and make changes, if desired. Payments can be made by credit card or PayPal. If the user wants to cancel reservations, he can only do it until 3 days before the arrival date and only 75% of the money will be refunded. Once in a while, the website offers vouchers to some users so they can discounts.

Insert answer here

[Continue >>](#)

The user stories below fit Jack's needs more or Olivia's? (Answer out loud)

PICTURE & NAME	DETAILS	GOAL
 Jack	<ul style="list-style-type: none"> Is a 22 years old student. Wants to photograph landscapes, nature and animals. Fears making mistakes. Values acknowledgment. 	<ul style="list-style-type: none"> Needs to share his photos.

PICTURE & NAME	DETAILS	GOAL
 Olivia	<ul style="list-style-type: none"> Is 25 years old. Works at a small production company. 	<ul style="list-style-type: none"> Needs to get high quality photos. Wants to save money on the photos she uses for work.

- As _____, I want to add content to the media gallery, so that I can show my content to other people.
- As _____, I want to add an image to my profile page, so that people can recognize me.
- As _____, I want to use the contact form, so that I can contact the administrator.
- As _____, I want to edit the media in my gallery, so that I can change the description of my content
- As _____, I want to login using my email address and password so that I get access to the user-only features of the website.
- As _____, I want to select an album, so that I can view the media in the album.
- As _____, I want to see who added the content, so that I know more about the contributor of the content.

[Continue >>](#)

Which user stories are related to the media content shared on the website? (Answer out loud)

- In order to view the media in the album, as a visitor, I want to select an album.
- In order to contact the administrator, as a visitor, I want to use the contact form.
- In order to get access to the user-only features of the website, as a user, I want to login using my email address and password.
- In order to be recognized, as a user, I want to be able to add an image to my profile page.
- In order to change the description of my content, as a user, I want to edit the media in my gallery.
- In order to show my content to other people, as a user, I want to add content to the media gallery.
- In order to know more about the contributor of the content, as a visitor, I want to see who added the content.

[Continue >>](#)

CREATION TASKS

Please write user stories that describe what Amy wants

PICTURE & NAME	DETAILS	GOAL
 Amy	<p>Is 28 years old. Wants to travel the world. Values friends, family and organization. Fears having no plans and no time to travel.</p>	<p>Wants an easy way to book trips and get the best deals. Needs quick access to her reservations.</p>

A website allows its users to book hotels for their trips. People who visit the website can choose the arrival and the departure date of their stay, as well as the number of people traveling and the city they want to visit. Given that not all people will have the same budget, during the search, it's possible to set price limits. The user must be registered so that he can make reservations. The website also offers extra services such as car rental and extra activities. In the customer area, the user can access all bookings made and make changes, if desired. Payments can be made by credit card or PayPal. If the user wants to cancel reservations, he can only do it until 3 days before the arrival date and only 75% of the money will be refunded. Once in a while, the website offers vouchers to some users so they can discounts.

Insert answer here

[Continue >>](#)

Please write the user stories necessary to describe this system

A website allows its users to book hotels for their trips. People who visit the website can choose the arrival and the departure date of their stay, as well as the number of people traveling and the city they want to visit. Given that not all people will have the same budget, during the search, it's possible to set price limits. The user must be registered so that he can make reservations. The website also offers extra services such as car rental and extra activities. In the customer area, the user can access all bookings made and make changes, if desired. Payments can be made by credit card or PayPal. If the user wants to cancel reservations, he can only do it until 3 days before the arrival date and only 75% of the money will be refunded. Once in a while, the website offers vouchers to some users so they can discounts.

Insert answer here

[Continue >>](#)

The user stories below fit Jack's needs more or Olivia's? (Answer out loud)

PICTURE & NAME	DETAILS	GOAL
 Jack	<p>Is a 22 years old student. Wants to photograph landscapes, nature and animals. Fears making mistakes. Values acknowledgment.</p>	<p>Needs to share his photos.</p>

PICTURE & NAME	DETAILS	GOAL
 Olivia	<p>Is 25 years old. Works at a small production company.</p>	<p>Needs to get high quality photos. Wants to save money on the photos she uses for work.</p>

1. As _____, I want to add content to the media gallery, so that I can show my content to other people.
2. As _____, I want to add an image to my profile page, so that people can recognize me.
3. As _____, I want to use the contact form, so that I can contact the administrator.
4. As _____, I want to edit the media in my gallery, so that I can change the description of my content
5. As _____, I want to login using my email address and password so that I get access to the user-only features of the website.
6. As _____, I want to select an album, so that I can view the media in the album.
7. As _____, I want to see who added the content, so that I know more about the contributor of the content.

[Continue >>](#)

Which user stories are related to the media content shared on the website? (Answer out loud)

1. In order to view the media in the album, as a visitor, I want to select an album.
2. In order to contact the administrator, as a visitor, I want to use the contact form.
3. In order to get access to the user-only features of the website, as a user, I want to login using my email address and password.
4. In order to be recognized, as a user, I want to be able to add an image to my profile page.
5. In order to change the description of my content, as a user, I want to edit the media in my gallery.
6. In order to show my content to other people, as a user, I want to add content to the media gallery.
7. In order to know more about the contributor of the content, as a visitor, I want to see who added the content.

[Continue >>](#)

UNDERSTANDING TASKS

Please write user stories that describe what Amy wants

PICTURE & NAME	DETAILS	GOAL
 Amy	Is 28 years old. Wants to travel the world. Values friends, family and organization. Fears having no plans and no time to travel.	Wants an easy way to book trips and get the best deals. Needs quick access to her reservations.

A website allows its users to book hotels for their trips. People who visit the website can choose the arrival and the departure date of their stay, as well as the number of people traveling and the city they want to visit. Given that not all people will have the same budget, during the search, it's possible to set price limits. The user must be registered so that he can make reservations. The website also offers extra services such as car rental and extra activities. In the customer area, the user can access all bookings made and make changes, if desired. Payments can be made by credit card or PayPal. If the user wants to cancel reservations, he can only do it until 3 days before the arrival date and only 75% of the money will be refunded. Once in a while, the website offers vouchers to some users so they can discounts.

Insert answer here

[Continue >>](#)

Please write the user stories necessary to describe this system

A website allows its users to book hotels for their trips. People who visit the website can choose the arrival and the departure date of their stay, as well as the number of people traveling and the city they want to visit. Given that not all people will have the same budget, during the search, it's possible to set price limits. The user must be registered so that he can make reservations. The website also offers extra services such as car rental and extra activities. In the customer area, the user can access all bookings made and make changes, if desired. Payments can be made by credit card or PayPal. If the user wants to cancel reservations, he can only do it until 3 days before the arrival date and only 75% of the money will be refunded. Once in a while, the website offers vouchers to some users so they can discounts.

Insert answer here

[Continue >>](#)

The user stories below fit Jack's needs more or Olivia's? (Answer out loud)

PICTURE & NAME	DETAILS	GOAL
 Jack	Is a 22 years old student. Wants to photograph landscapes, nature and animals. Fears making mistakes. Values acknowledgment.	Needs to share his photos.

- As _____, I want to add content to the media gallery, so that I can show my content to other people.
- As _____, I want to add an image to my profile page, so that people can recognize me.
- As _____, I want to use the contact form, so that I can contact the administrator.
- As _____, I want to edit the media in my gallery, so that I can change the description of my content
- As _____, I want to login using my email address and password so that I get access to the user-only features of the website.
- As _____, I want to select an album, so that I can view the media in the album.
- As _____, I want to see who added the content, so that I know more about the contributor of the content.

[Continue >>](#)

Which user stories are related to the media content shared on the website? (Answer out loud)

PICTURE & NAME	DETAILS	GOAL
 Olivia	Is 25 years old. Works at a small production company.	Needs to get high quality photos. Wants to save money on the photos she uses for work.

- In order to view the media in the album, as a visitor, I want to select an album.
- In order to contact the administrator, as a visitor, I want to use the contact form.
- In order to get access to the user-only features of the website, as a user, I want to login using my email address and password.
- In order to be recognized, as a user, I want to be able to add an image to my profile page.
- In order to change the description of my content, as a user, I want to edit the media in my gallery.
- In order to show my content to other people, as a user, I want to add content to the media gallery.
- In order to know more about the contributor of the content, as a visitor, I want to see who added the content.

[Continue >>](#)

TASKS WITH PERSONAS

Please write user stories that describe what Amy wants

PICTURE & NAME	DETAILS	GOAL
 Amy	<p>Is 28 years old. Wants to travel the world. Values friends, family and organization. Fears having no plans and no time to travel.</p>	<p>Wants an easy way to book trips and get the best deals. Needs quick access to her reservations.</p>

A website allows its users to book hotels for their trips. People who visit the website can choose the arrival and the departure date of their stay, as well as the number of people traveling and the city they want to visit. Given that not all people will have the same budget, during the search, it's possible to set price limits. The user must be registered so that he can make reservations. The website also offers extra services such as car rental and extra activities. In the customer area, the user can access all bookings made and make changes, if desired. Payments can be made by credit card or PayPal. If the user wants to cancel reservations, he can only do it until 3 days before the arrival date and only 75% of the money will be refunded. Once in a while, the website offers vouchers to some users so they can discounts.

Insert answer here

[Continue >>](#)

Please write the user stories necessary to describe this system

A website allows its users to book hotels for their trips. People who visit the website can choose the arrival and the departure date of their stay, as well as the number of people traveling and the city they want to visit. Given that not all people will have the same budget, during the search, it's possible to set price limits. The user must be registered so that he can make reservations. The website also offers extra services such as car rental and extra activities. In the customer area, the user can access all bookings made and make changes, if desired. Payments can be made by credit card or PayPal. If the user wants to cancel reservations, he can only do it until 3 days before the arrival date and only 75% of the money will be refunded. Once in a while, the website offers vouchers to some users so they can discounts.

Insert answer here

[Continue >>](#)

The user stories below fit Jack's needs more or Olivia's? (Answer out loud)

PICTURE & NAME	DETAILS	GOAL
 Jack	<p>Is a 22 years old student. Wants to photograph landscapes, nature and animals. Fears making mistakes. Values acknowledgment.</p>	<p>Needs to share his photos.</p>

PICTURE & NAME	DETAILS	GOAL
 Olivia	<p>Is 25 years old. Works at a small production company.</p>	<p>Needs to get high quality photos. Wants to save money on the photos she uses for work.</p>

- As _____, I want to add content to the media gallery, so that I can show my content to other people.
- As _____, I want to add an image to my profile page, so that people can recognize me.
- As _____, I want to use the contact form, so that I can contact the administrator.
- As _____, I want to edit the media in my gallery, so that I can change the description of my content
- As _____, I want to login using my email address and password so that I get access to the user-only features of the website.
- As _____, I want to select an album, so that I can view the media in the album.
- As _____, I want to see who added the content, so that I know more about the contributor of the content.

[Continue >>](#)

Which user stories are related to the media content shared on the website? (Answer out loud)

- In order to view the media in the album, as a visitor, I want to select an album.
- In order to contact the administrator, as a visitor, I want to use the contact form.
- In order to get access to the user-only features of the website, as a user, I want to login using my email address and password.
- In order to be recognized, as a user, I want to be able to add an image to my profile page.
- In order to change the description of my content, as a user, I want to edit the media in my gallery.
- In order to show my content to other people, as a user, I want to add content to the media gallery.
- In order to know more about the contributor of the content, as a visitor, I want to see who added the content.

[Continue >>](#)

TASKS WITHOUT PERSONAS

Please write user stories that describe what Amy wants

PICTURE & NAME	DETAILS	GOAL
 Amy	<p>Is 28 years old. Wants to travel the world. Values friends, family and organization. Fears having no plans and no time to travel.</p>	<p>Wants an easy way to book trips and get the best deals. Needs quick access to her reservations.</p>

A website allows its users to book hotels for their trips. People who visit the website can choose the arrival and the departure date of their stay, as well as the number of people traveling and the city they want to visit. Given that not all people will have the same budget, during the search, it's possible to set price limits. The user must be registered so that he can make reservations. The website also offers extra services such as car rental and extra activities. In the customer area, the user can access all bookings made and make changes, if desired. Payments can be made by credit card or PayPal. If the user wants to cancel reservations, he can only do it until 3 days before the arrival date and only 75% of the money will be refunded. Once in a while, the website offers vouchers to some users so they can discounts.

Insert answer here

[Continue >>](#)

Please write the user stories necessary to describe this system

A website allows its users to book hotels for their trips. People who visit the website can choose the arrival and the departure date of their stay, as well as the number of people traveling and the city they want to visit. Given that not all people will have the same budget, during the search, it's possible to set price limits. The user must be registered so that he can make reservations. The website also offers extra services such as car rental and extra activities. In the customer area, the user can access all bookings made and make changes, if desired. Payments can be made by credit card or PayPal. If the user wants to cancel reservations, he can only do it until 3 days before the arrival date and only 75% of the money will be refunded. Once in a while, the website offers vouchers to some users so they can discounts.

Insert answer here

[Continue >>](#)

The user stories below fit Jack's needs more or Olivia's? (Answer out loud)

PICTURE & NAME	DETAILS	GOAL
 Jack	<p>Is a 22 years old student. Wants to photograph landscapes, nature and animals. Fears making mistakes. Values acknowledgment.</p>	<p>Needs to share his photos.</p>

PICTURE & NAME	DETAILS	GOAL
 Olivia	<p>Is 25 years old. Works at a small production company.</p>	<p>Needs to get high quality photos. Wants to save money on the photos she uses for work.</p>

1. As _____, I want to add content to the media gallery, so that I can show my content to other people.
2. As _____, I want to add an image to my profile page, so that people can recognize me.
3. As _____, I want to use the contact form, so that I can contact the administrator.
4. As _____, I want to edit the media in my gallery, so that I can change the description of my content
5. As _____, I want to login using my email address and password so that I get access to the user-only features of the website.
6. As _____, I want to select an album, so that I can view the media in the album.
7. As _____, I want to see who added the content, so that I know more about the contributor of the content.

[Continue >>](#)

Which user stories are related to the media content shared on the website? (Answer out loud)

1. In order to view the media in the album, as a visitor, I want to select an album.
2. In order to contact the administrator, as a visitor, I want to use the contact form.
3. In order to get access to the user-only features of the website, as a user, I want to login using my email address and password.
4. In order to be recognized, as a user, I want to be able to add an image to my profile page.
5. In order to change the description of my content, as a user, I want to edit the media in my gallery.
6. In order to show my content to other people, as a user, I want to add content to the media gallery.
7. In order to know more about the contributor of the content, as a visitor, I want to see who added the content.

[Continue >>](#)

CREATION TASK WITH PERSONAS

Please write user stories that describe what Amy wants

PICTURE & NAME	DETAILS	GOAL
 Amy	<p>Is 28 years old.</p> <p>Wants to travel the world.</p> <p>Values friends, family and organization.</p> <p>Fears having no plans and no time to travel.</p>	<p>Wants an easy way to book trips and get the best deals.</p> <p>Needs quick access to her reservations.</p>

Insert answer here

A website allows its users to book hotels for their trips. People who visit the website can choose the arrival and the departure date of their stay, as well as the number of people traveling and the city they want to visit. Given that not all people will have the same budget, during the search, it's possible to set price limits. The user must be registered so that he can make reservations. The website also offers extra services such as car rental and extra activities. In the customer area, the user can access all bookings made and make changes, if desired. Payments can be made by credit card or PayPal. If the user wants to cancel reservations, he can only do it until 3 days before the arrival date and only 75% of the money will be refunded. Once in a while, the website offers vouchers to some users so they can discounts.

[Continue >>](#)

CREATION TASK WITH PERSONAS

Please write user stories that describe what Amy wants

PICTURE & NAME	DETAILS	GOAL
 Amy	<p>Is 28 years old. Wants to travel the world. Values friends, family and organization. Fears having no plans and no time to travel.</p>	<p>Wants an easy way to book trips and get the best deals. Needs quick access to her reservations.</p>

Persona

Insert answer here

A website allows its users to book hotels for their trips. People who visit the website can choose the arrival and the departure date of their stay, as well as the number of people traveling and the city they want to visit. Given that not all people will have the same budget, during the search, it's possible to set price limits. The user must be registered so that he can make reservations. The website also offers extra services such as car rental and extra activities. In the customer area, the user can access all bookings made and make changes, if desired. Payments can be made by credit card or PayPal. If the user wants to cancel reservations, he can only do it until 3 days before the arrival date and only 75% of the money will be refunded. Once in a while, the website offers vouchers to some users so they can discounts.

[Continue >>](#)

CREATION TASK WITH PERSONAS

Please write user stories that describe what Amy wants

PICTURE & NAME	DETAILS	GOAL	
 Amy	<p>Is 28 years old. Wants to travel the world. Values friends, family and organization. Fears having no plans and no time to travel.</p>	<p>Wants an easy way to book trips and get the best deals. Needs quick access to her reservations.</p>	<p>Persona</p>

Insert answer here

A website allows its users to book hotels for their trips. People who visit the website can choose the arrival and the departure date of their stay, as well as the number of people traveling and the city they want to visit. Given that not all people will have the same budget, during the search, it's possible to set price limits. The user must be registered so that he can make reservations. The website also offers extra services such as car rental and extra activities. In the customer area, the user can access all bookings made and make changes, if desired. Payments can be made by credit card or PayPal. If the user wants to cancel reservations, he can only do it until 3 days before the arrival date and only 75% of the money will be refunded. Once in a while, the website offers vouchers to some users so they can discounts.

Problem description

[Continue >>](#)

CREATION TASK WITH PERSONAS

Please write user stories that describe what Amy wants

PICTURE & NAME	DETAILS	GOAL	
 Amy	<p>Is 28 years old. Wants to travel the world. Values friends, family and organization. Fears having no plans and no time to travel.</p>	<p>Wants an easy way to book trips and get the best deals. Needs quick access to her reservations.</p>	<p>Persona</p>

Insert answer here

A website allows its users to book hotels for their trips. People who visit the website can choose the arrival and the departure date of their stay, as well as the number of people traveling and the city they want to visit. Given that not all people will have the same budget, during the search, it's possible to set price limits. The user must be registered so that he can make reservations. The website also offers extra services such as car rental and extra activities. In the customer area, the user can access all bookings made and make changes, if desired. Payments can be made by credit card or PayPal. If the user wants to cancel reservations, he can only do it until 3 days before the arrival date and only 75% of the money will be refunded. Once in a while, the website offers vouchers to some users so they can discounts.

Problem description

Textual canvas

[Continue >>](#)

CREATION TASK WITHOUT PERSONAS

Please write the user stories necessary to describe this system

A website allows its users to book hotels for their trips. People who visit the website can choose the arrival and the departure date of their stay, as well as the number of people traveling and the city they want to visit. Given that not all people will have the same budget, during the search, it's possible to set price limits. The user must be registered so that he can make reservations. The website also offers extra services such as car rental and extra activities. In the customer area, the user can access all bookings made and make changes, if desired. Payments can be made by credit card or PayPal. If the user wants to cancel reservations, he can only do it until 3 days before the arrival date and only 75% of the money will be refunded. Once in a while, the website offers vouchers to some users so they can discounts.

Insert answer here

[Continue >>](#)

CREATION TASK WITHOUT PERSONAS

Please write the user stories necessary to describe this system

A website allows its users to book hotels for their trips. People who visit the website can choose the arrival and the departure date of their stay, as well as the number of people traveling and the city they want to visit. Given that not all people will have the same budget, during the search, it's possible to set price limits. The user must be registered so that he can make reservations. The website also offers extra services such as car rental and extra activities. In the customer area, the user can access all bookings made and make changes, if desired. Payments can be made by credit card or PayPal. If the user wants to cancel reservations, he can only do it until 3 days before the arrival date and only 75% of the money will be refunded. Once in a while, the website offers vouchers to some users so they can discounts.

Problem description

Insert answer here

[Continue >>](#)

CREATION TASK WITHOUT PERSONAS

Please write the user stories necessary to describe this system

A website allows its users to book hotels for their trips. People who visit the website can choose the arrival and the departure date of their stay, as well as the number of people traveling and the city they want to visit. Given that not all people will have the same budget, during the search, it's possible to set price limits. The user must be registered so that he can make reservations. The website also offers extra services such as car rental and extra activities. In the customer area, the user can access all bookings made and make changes, if desired. Payments can be made by credit card or PayPal. If the user wants to cancel reservations, he can only do it until 3 days before the arrival date and only 75% of the money will be refunded. Once in a while, the website offers vouchers to some users so they can discounts.

Problem description

Insert answer here

Textual canvas

[Continue >>](#)

UNDERSTANDING TASK WITH PERSONAS

The user stories below fit Jack's needs more or Olivia's? (Answer out loud)

PICTURE & NAME	DETAILS	GOAL	PICTURE & NAME	DETAILS	GOAL
 Jack	<p>Is a 22 years old student.</p> <p>Wants to photograph landscapes, nature and animals.</p> <p>Fears making mistakes.</p> <p>Values acknowledgment.</p>	Needs to share his photos.	 Olivia	<p>Is 25 years old.</p> <p>Works at a small production company.</p>	<p>Needs to get high quality photos.</p> <p>Wants to save money on the photos she uses for work.</p>

1. As _____, I want to add content to the media gallery, so that I can show my content to other people.
2. As _____, I want to add an image to my profile page, so that people can recognize me.
3. As _____, I want to use the contact form, so that I can contact the administrator.
4. As _____, I want to edit the media in my gallery, so that I can change the description of my content
5. As _____, I want to login using my email address and password so that I get access to the user-only features of the website.
6. As _____, I want to select an album, so that I can view the media in the album.
7. As _____, I want to see who added the content, so that I know more about the contributor of the content.

[Continue >>](#)

UNDERSTANDING TASK WITH PERSONAS

The user stories below fit Jack's needs more or Olivia's? (Answer out loud)

PICTURE & NAME	DETAILS	GOAL	PICTURE & NAME	DETAILS	GOAL
 Jack	<p>Is a 22 years old student.</p> <p>Wants to photograph landscapes, nature and animals.</p> <p>Fears making mistakes.</p> <p>Values acknowledgment.</p>	Needs to share his photos.	 Olivia	<p>Is 25 years old.</p> <p>Works at a small production company.</p>	<p>Needs to get high quality photos.</p> <p>Wants to save money on the photos she uses for work.</p>
Personas					

1. As _____, I want to add content to the media gallery, so that I can show my content to other people.
2. As _____, I want to add an image to my profile page, so that people can recognize me.
3. As _____, I want to use the contact form, so that I can contact the administrator.
4. As _____, I want to edit the media in my gallery, so that I can change the description of my content
5. As _____, I want to login using my email address and password so that I get access to the user-only features of the website.
6. As _____, I want to select an album, so that I can view the media in the album.
7. As _____, I want to see who added the content, so that I know more about the contributor of the content.

[Continue >>](#)

UNDERSTANDING TASK WITH PERSONAS

The user stories below fit Jack's needs more or Olivia's? (Answer out loud)

PICTURE & NAME	DETAILS	GOAL	PICTURE & NAME	DETAILS	GOAL
 Jack	<p>Is a 22 years old student.</p> <p>Wants to photograph landscapes, nature and animals.</p> <p>Fears making mistakes.</p> <p>Values acknowledgment.</p>	<p>Needs to share his photos.</p>	 Olivia	<p>Is 25 years old.</p> <p>Works at a small production company.</p>	<p>Needs to get high quality photos.</p> <p>Wants to save money on the photos she uses for work.</p>

Personas

- As _____, I want to add content to the media gallery, so that I can show my content to other people.
- As _____, I want to add an image to my profile page, so that people can recognize me.
- As _____, I want to use the contact form, so that I can contact the administrator.
- As _____, I want to edit the media in my gallery, so that I can change the description of my content
- As _____, I want to login using my email address and password so that I get access to the user-only features of the website.
- As _____, I want to select an album, so that I can view the media in the album.
- As _____, I want to see who added the content, so that I know more about the contributor of the content.

User stories

[Continue >>](#)

UNDERSTANDING TASK WITHOUT PERSONAS

Which user stories are related to the media content shared on the website? (Answer out loud)

1. In order to view the media in the album, as a visitor, I want to select an album.
2. In order to contact the administrator, as a visitor, I want to use the contact form.
3. In order to get access to the user-only features of the website, as a user, I want to login using my email address and password.
4. In order to be recognized, as a user, I want to be able to add an image to my profile page.
5. In order to change the description of my content, as a user, I want to edit the media in my gallery.
6. In order to show my content to other people, as a user, I want to add content to the media gallery.
7. In order to know more about the contributor of the content, as a visitor, I want to see who added the content.

[Continue >>](#)

UNDERSTANDING TASK WITHOUT PERSONAS

Which user stories are related to the media content shared on the website? (Answer out loud)

1. In order to view the media in the album, as a visitor, I want to select an album.
2. In order to contact the administrator, as a visitor, I want to use the contact form.
3. In order to get access to the user-only features of the website, as a user, I want to login using my email address and password.
4. In order to be recognized, as a user, I want to be able to add an image to my profile page.
5. In order to change the description of my content, as a user, I want to edit the media in my gallery.
6. In order to show my content to other people, as a user, I want to add content to the media gallery.
7. In order to know more about the contributor of the content, as a visitor, I want to see who added the content.

User stories

[Continue >>](#)

DATA COLLECTION AND ANALYSIS

DATA COLLECTION AND ANALYSIS

DATA COLLECTION AND ANALYSIS

Direct

DATA COLLECTION AND ANALYSIS

Direct

Indirect

DATA COLLECTION AND ANALYSIS

Direct

Indirect

Subjective

DATA COLLECTION AND ANALYSIS

Direct

Indirect

Subjective



Precision
Recall
F-measure

DATA COLLECTION AND ANALYSIS

Direct

Indirect

Subjective



Precision
Recall
F-measure



Duration
of the task

DATA COLLECTION AND ANALYSIS

Direct



Precision
Recall
F-measure



Duration
of the task

Indirect



Fixations
Saccades
Heatmaps

Subjective

DATA COLLECTION AND ANALYSIS

Direct



Precision
Recall
F-measure



Duration
of the task

Indirect



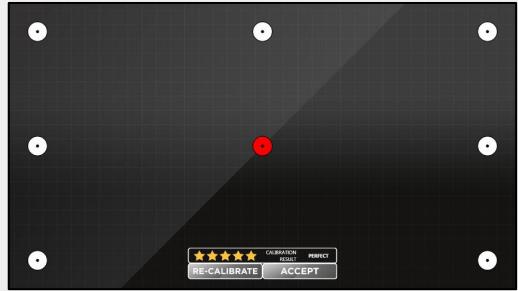
Fixations
Saccades
Heatmaps



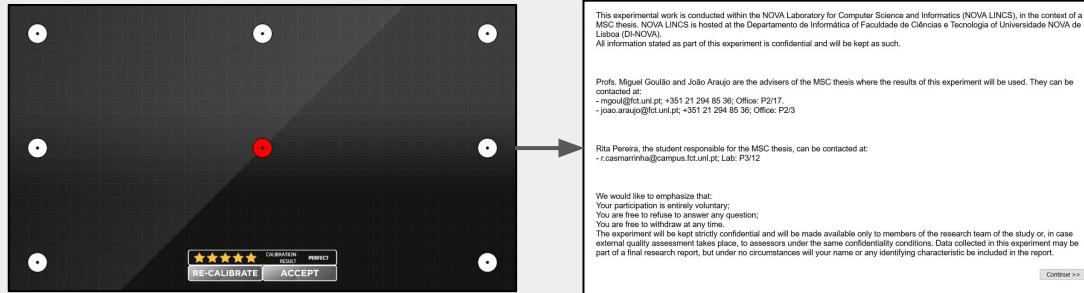
Performance
Effort
Frustration
Mental demand
Physical demand
Temporal demand

Subjective

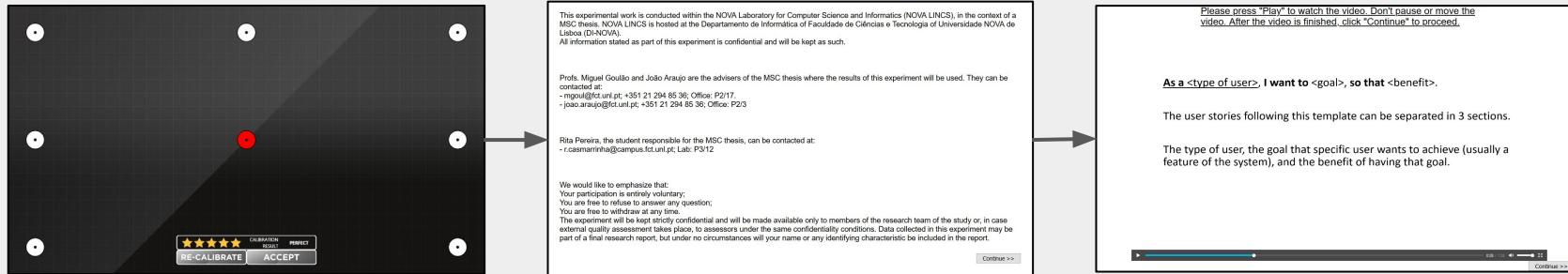
EYE-TRACKER CALIBRATION



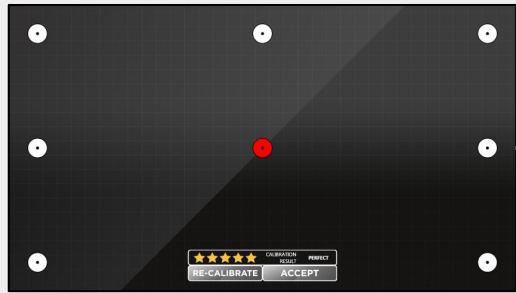
READ THE CONSENT LETTER



WATCH A VIDEO TUTORIAL



PERFORM THE FIRST TASK



This experimental work is conducted within the NOVA Laboratory for Computer Science and Informatics (NOVA LINCS), in the context of a MSC thesis. NOVA LINCS is hosted at the Departamento de Informática of Faculdade de Ciências e Tecnologia de Universidade NOVA de Lisboa (DI-NOVA). All information stated as part of this experiment is confidential and will be kept as such.

Profs. Miguel Goulão and João Araújo are the advisers of the MSC thesis where the results of this experiment will be used. They can be contacted at:
- mgo@fct.unl.pt; +351 21 294 85 36; Office: P217.
- joao.araujo@fct.unl.pt; +351 21 294 85 36; Office: P2/3

Rita Pereira, the student responsible for the MSC thesis, can be contacted at:
- rcaamannahe@campus.fct.unl.pt; Lab: P3/12

We would like to emphasize that:
Your participation is entirely voluntary.
You are free to refuse to answer any question.
You are free to withdraw at any time.
The experiment will be kept strictly confidential and will be made available only to members of the research team of the study or, in case external quality assessment takes place, to assessors under the same confidentiality conditions. Data collected in this experiment may be part of a final research report, but under no circumstances will your name or any identifying characteristic be included in the report.

[Continue >>](#)

Please press "Play" to watch the video. Don't pause or move the video. After the video is finished, click "Continue" to proceed.

As a <type of user>, I want to <goal>, so that <benefit>.

The user stories following this template can be separated in 3 sections.

The type of user, the goal that specific user wants to achieve (usually a feature of the system), and the benefit of having that goal.

[Video player controls] [Continue >>](#)

The user stories below fit Jack's needs more or Olivia's? (Answer out loud)

PICTURE & NAME	DETAILS	GOAL
Jack	Is a 23 years old student. Wants to photograph landscapes, nature and animals. Feels making mistakes. Values acknowledgment.	Needs to share his photos.
Olivia	Is 25 years old. Works at a small production company. Wants to save money on the photos she uses for work.	Wants to get high-quality photos.

1. As _____, I want to add content to the media gallery, so that I can show my content to other people.
2. As _____, I want to add an image to my profile page, so that people can recognize me.
3. As _____, I want to use the contact form, so that I can contact the administrator.
4. As _____, I want to edit the media in my gallery, so that I can change the description of my content.
5. As _____, I want to login using my email address and password so that I get access to the user-only features of the website.
6. As _____, I want to select an album, so that I can view the media in the album.
7. As _____, I want to see who added the content, so that I know more about the contributor of the content.

[Continue >>](#)

ANSWER A NASA-TLX QUESTIONNAIRE

This experimental work is conducted within the NOVA Laboratory for Computer Science and Informatics (NOVA LINCS), in the context of a MSC thesis. NOVA LINCS is hosted at the Departamento de Informática of Faculdade de Ciências e Tecnologia de Universidade NOVA de Lisboa (DI-NOVA). All information stated as part of this experiment is confidential and will be kept as such.

Profs. Miguel Goulão and João Araújo are the advisors of the MSC thesis where the results of this experiment will be used. They can be contacted at:
- mgo@fc.ul.pt; +351 21 294 85 36; Office: P217.
- jaa.araujo@fc.ul.pt; +351 21 294 85 36; Office: P2/23

Rita Pereira, the student responsible for the MSC thesis, can be contacted at:
- rcaamanna@campus.fc.ul.pt; Lab: P3/12

We would like to emphasize that:
Your participation is entirely voluntary.
You are free to refuse to answer any question.
You are free to withdraw at any time.
The experiment will be strictly confidential and will be made available only to members of the research team of the study or, in case external quality assessment takes place, to assessors under the same confidentiality conditions. Data collected in this experiment may be part of a final research report, but under no circumstances will your name or any identifying characteristic be included in the report.

Please press "Play" to watch the video. Don't pause or move the video. After the video is finished, click "Continue" to proceed.

As a <type of user>, I want to <goal>, so that <benefit>.

The user stories following this template can be separated in 3 sections.

The type of user, the goal that specific user wants to achieve (usually a feature of the system), and the benefit of having that goal.

Workload Measures

Click on each scale at the point that best indicates your experience of the task

Mental Demand
Physical Demand
Temporal Demand
Performance
Effort
Frustration

How much mental and perceptual activity was required (e.g. thinking, deciding, calculating, remembering, looking, searching, etc.)? Was the task easy or demanding, simple or complex, interesting or boring?

How much physical activity was required (e.g. pushing, pulling, turning, controlling, activating, etc.)? Was the task easy or demanding, slow or brisk, slack or strenuous, restful or laborious?

How much time pressure did you feel due to the rate of pace at which the tasks or task elements occurred? Was the pace slow and leisurely or rapid and frantic?

How successful or how think you were in accomplishing the goals of the task set by the experimenter (or yourself)? How satisfied were you with your performance in accomplishing these goals?

How hard did you have to work (mentally and physically) to accomplish your level of performance?

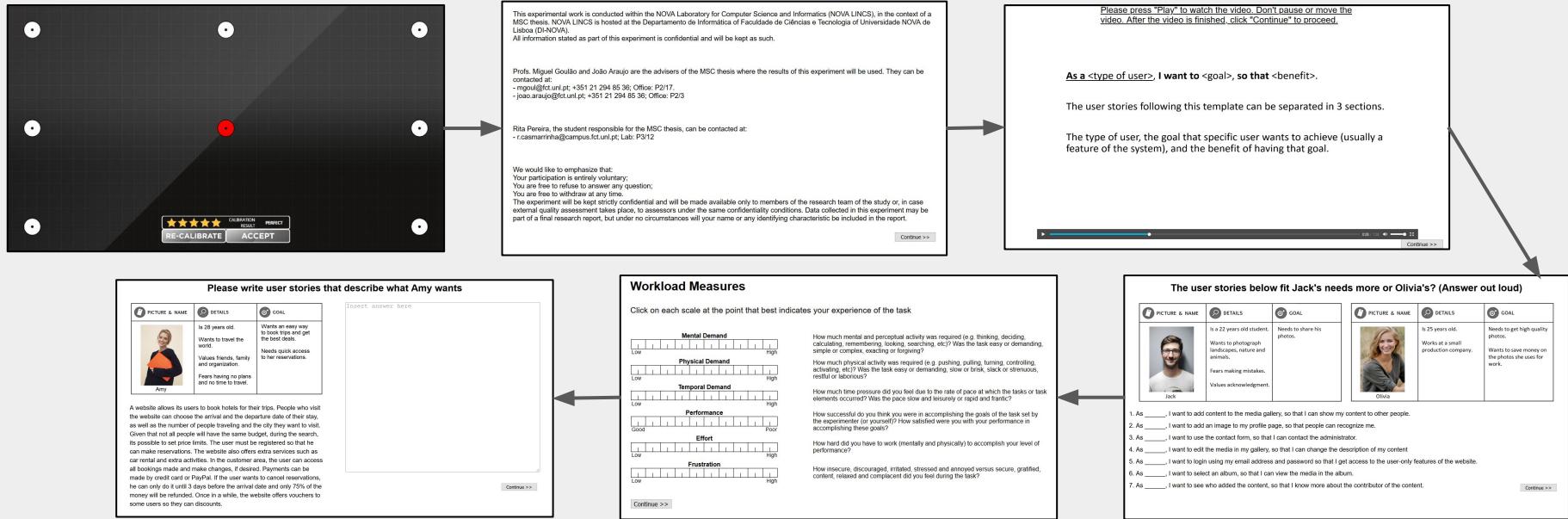
How insecure, discouraged, irritated, stressed and annoyed versus secure, gratified, content, relaxed and complacent did you feel during the task?

The user stories below fit Jack's needs more or Olivia's? (Answer out loud)

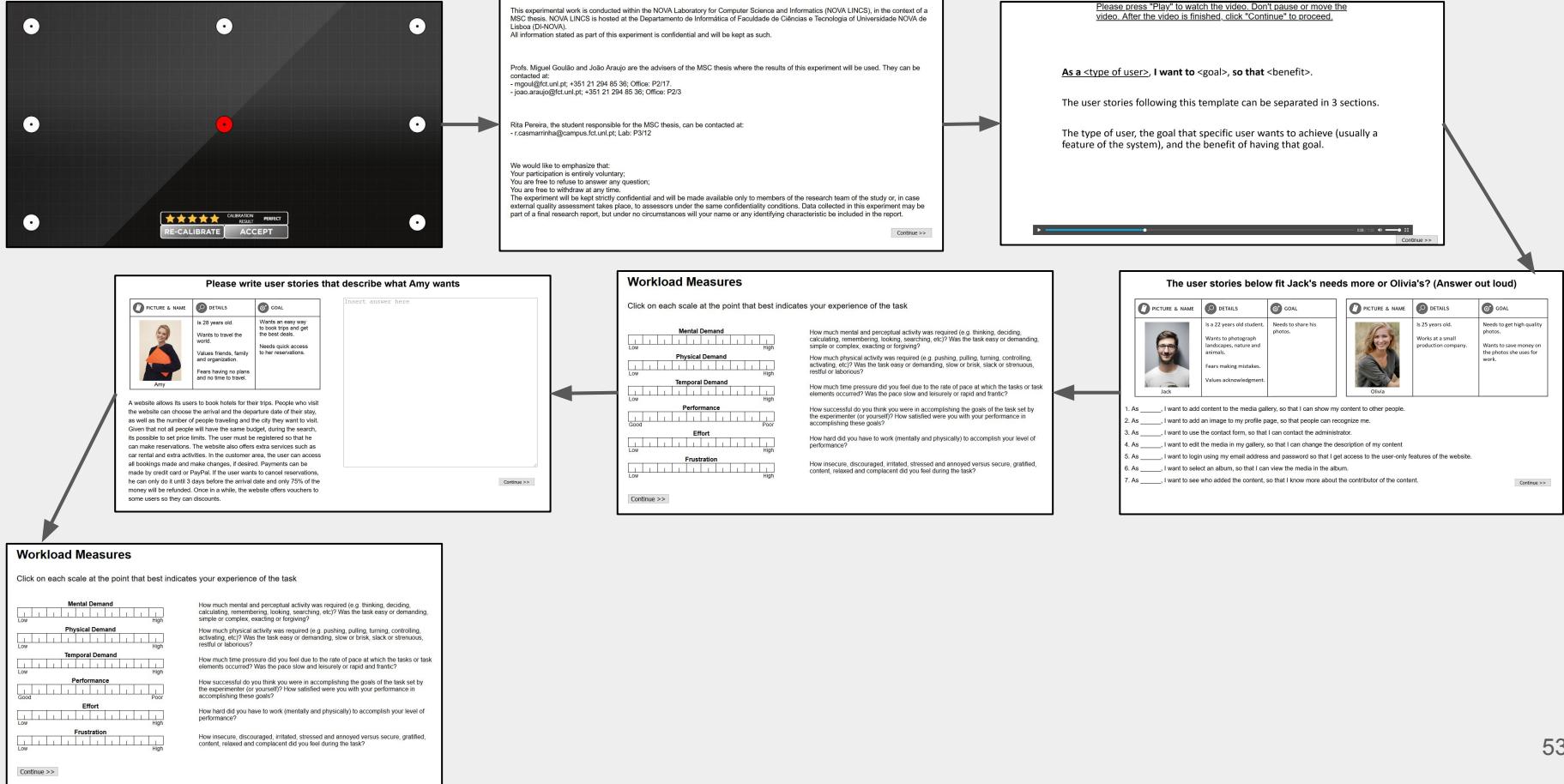
PICTURE & NAME	DETAILS	GOAL
Jack	Is a 23 years old student. Wants to photograph landscapes, nature and animals. Feels making mistakes. Values acknowledgment.	Needs to share his photos.
Olivia	Is 25 years old. Works at a small production company. Wants to get high-quality photos.	Needs to save money on the photos she uses for work.

1. As _____, I want to add content to the media gallery, so that I can show my content to other people.
2. As _____, I want to add an image to my profile page, so that people can recognize me.
3. As _____, I want to use the contact form, so that I can contact the administrator.
4. As _____, I want to edit the media in my gallery, so that I can change the description of my content.
5. As _____, I want to login using my email address and password so that I get access to the user-only features of the website.
6. As _____, I want to select an album, so that I can view the media in the album.
7. As _____, I want to see who added the content, so that I know more about the contributor of the content.

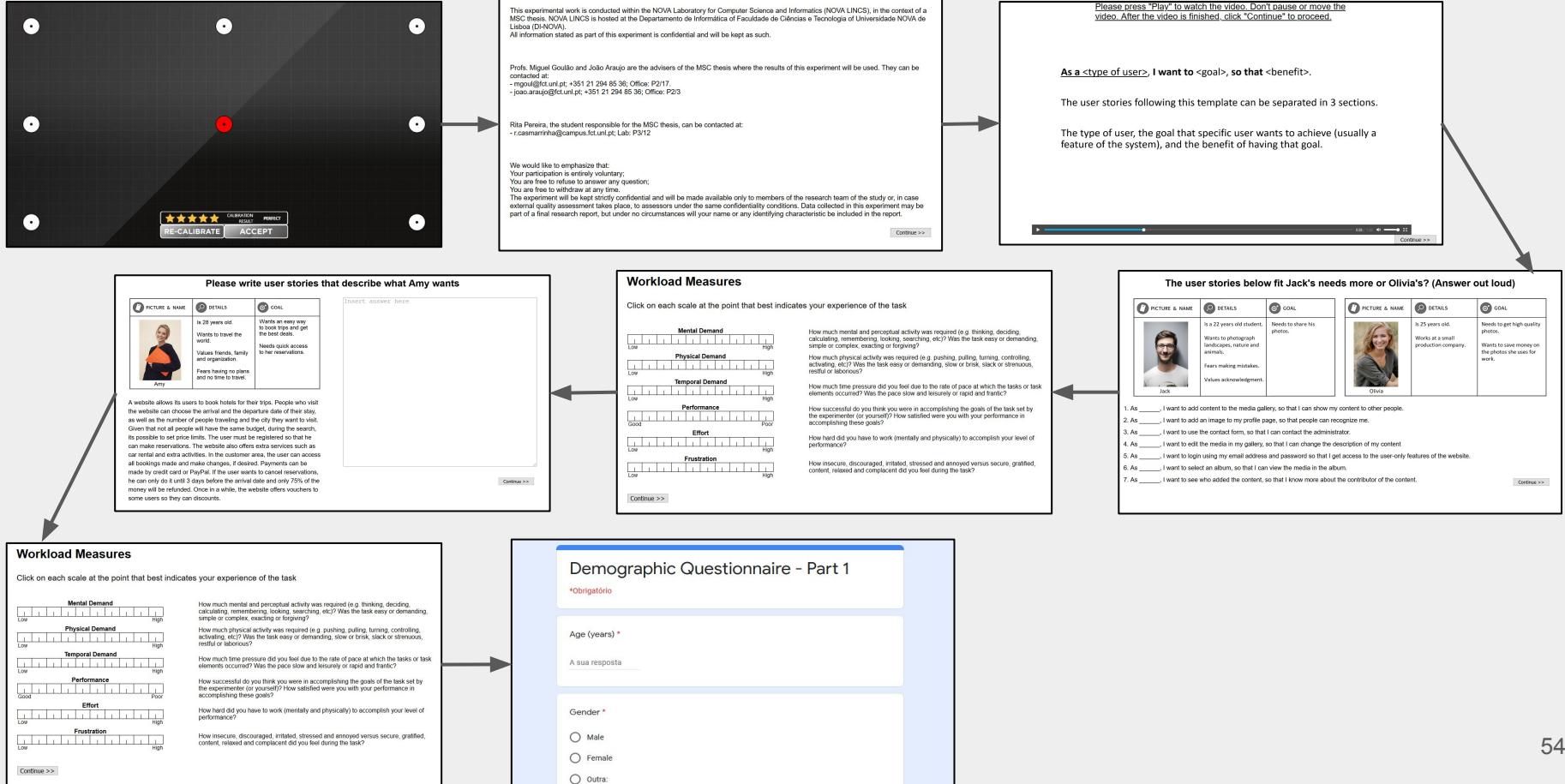
PERFORM THE SECOND TASK



ANSWER A NASA-TLX QUESTIONNAIRE



ANSWER TO DEMOGRAPHIC QUESTIONS



PROTOCOL OF THE EXPERIMENT

Protocol of the Experiment

This experimental work is conducted within the NOVA Laboratory for Computer Science and Informatics (NOVA LINCS), in the context of a MSC thesis. NOVA LINCS is hosted at the Departamento de Informática of Faculdade de Ciências e Tecnologia da Universidade NOVA de Lisboa (DI-NOVA). All information stated as part of this experiment is confidential and will be kept as such.

Profs. Miguel Goulão and João Araújo are the advisors of the MSC thesis where the results of this experiment will be used. They can be contacted at:
 - mgo@fc.ul.pt; +351 21 294 85 36; Office: P2/17.
 - jaa.araujo@fc.ul.pt; +351 21 294 85 36; Office: P2/23.

Rita Pereira, the student responsible for the MSC thesis, can be contacted at:
 - rcaamminha@campus.fc.ul.pt; Lab: P3/12.

We would like to emphasize that:
 Your participation is entirely voluntary.
 You are free to refuse to answer any question.
 You are free to withdraw at any time.
 The experiment will be strictly confidential and will be made available only to members of the research team of the study or, in case external quality assessment takes place, to assessors under the same confidentiality conditions. Data collected in this experiment may be part of a final research report, but under no circumstances will your name or any identifying characteristic be included in the report.

Please press "Play" to watch the video. Don't pause or move the video. After the video is finished, click "Continue" to proceed.

As a <type of user>, I want to <goal>, so that <benefit>.

The user stories following this template can be separated in 3 sections.

The type of user, the goal that specific user wants to achieve (usually a feature of the system), and the benefit of having that goal.

Please write user stories that describe what Amy wants

Insert answer here

Workload Measures

Click on each scale at the point that best indicates your experience of the task

Mental Demand
Physical Demand
Temporal Demand
Performance
Effort
Frustration

The user stories below fit Jack's needs more or Olivia's? (Answer out loud)

Picture & Name: Amy
Details: Is 28 years old. Wants to travel the world. Values friends, family and organization. Feels having no plans and like to travel.
Goal: Wants an easy way to book trips and get the best deals. Needs quick access to her reservations.

Picture & Name: Jack
Details: Is a 23 years old student. Wants to photograph landscapes, nature and animals. Feels making mistakes. Values acknowledgment.

Picture & Name: Olivia
Details: Is 25 years old. Works at a small production company. Wants to save money on the photos she uses for work.
Goal: Wants to get high-quality photos.

Workload Measures

Click on each scale at the point that best indicates your experience of the task

Mental Demand
Physical Demand
Temporal Demand
Performance
Effort
Frustration

Demographic Questionnaire - Part 1

Obrigatório

Age (years) *

A sua resposta

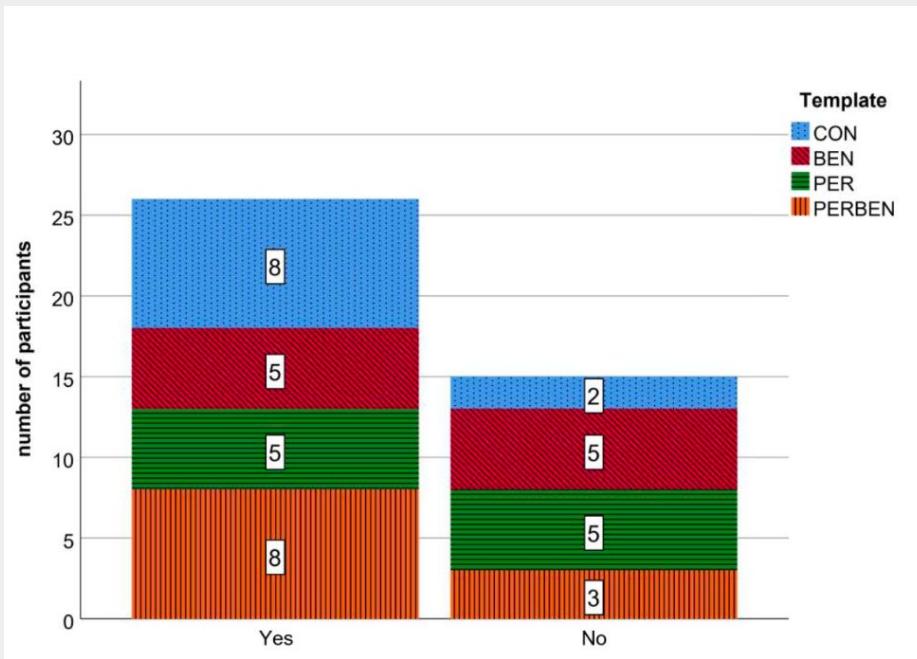
Gender *

Male
 Female
 Outras:

55

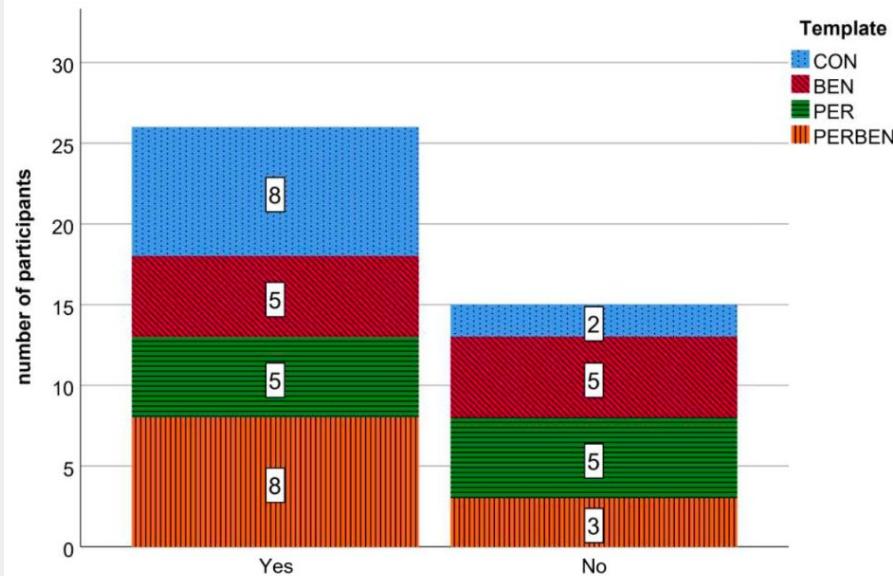
PARTICIPANTS CHARACTERISATION

PARTICIPANTS CHARACTERISATION

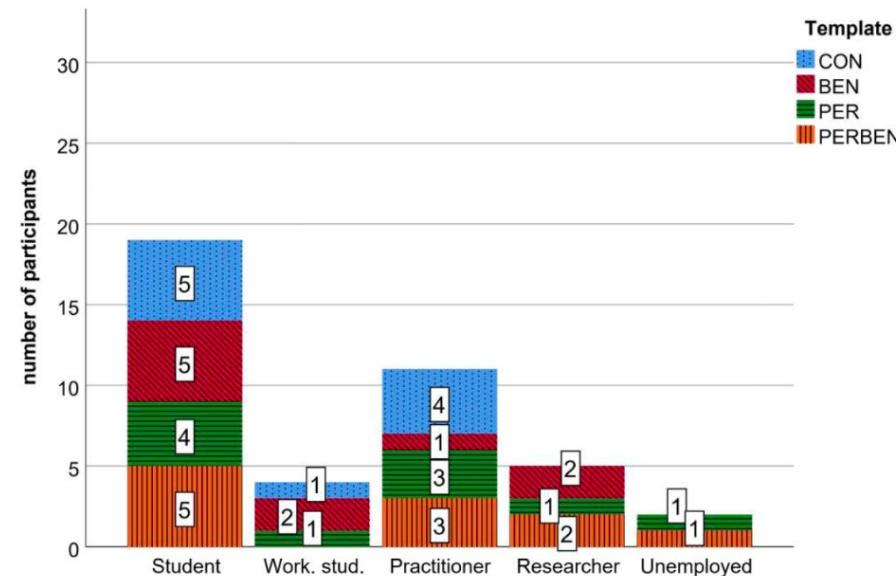


Previous experience with user stories

PARTICIPANTS CHARACTERISATION



Previous experience with user stories



Current occupation

DO DIFFERENT USER STORIES TEMPLATES HAVE AN
IMPACT ON THE **CREATION** OF USER STORIES?

DO DIFFERENT USER STORIES TEMPLATES HAVE AN IMPACT ON THE **CREATION** OF USER STORIES?

differences for recall
and f-measure



DO DIFFERENT USER STORIES TEMPLATES HAVE AN IMPACT ON THE **CREATION** OF USER STORIES?

differences for recall
and f-measure



lower duration
for PER than for BEN



DO DIFFERENT USER STORIES TEMPLATES HAVE AN IMPACT ON THE **CREATION** OF USER STORIES?

differences for recall
and f-measure



higher fixation rate on relevant elements for BEN than PER

lower duration for PEN than for BEN



DO DIFFERENT USER STORIES TEMPLATES HAVE AN IMPACT ON THE **CREATION** OF USER STORIES?

differences for recall
and f-measure



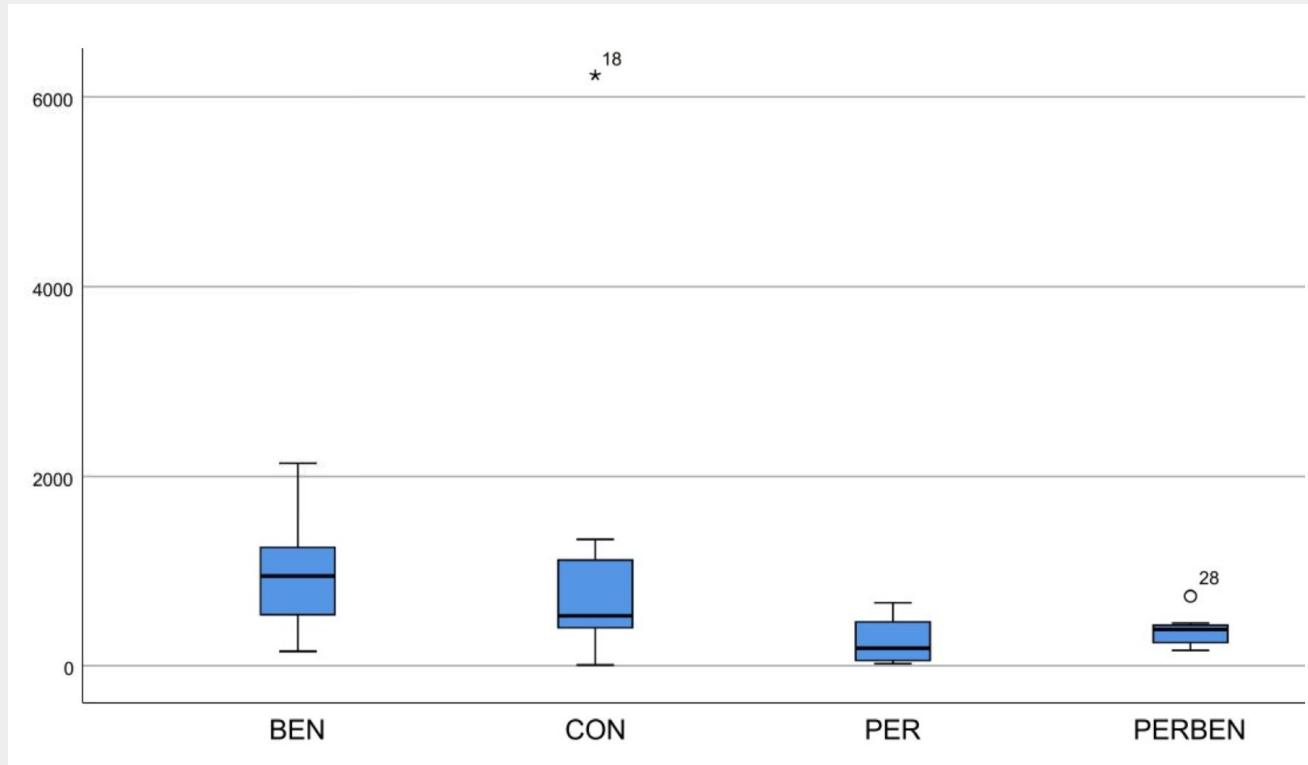
higher fixation rate on relevant elements for BEN than PER

lower duration for PEN than for BEN

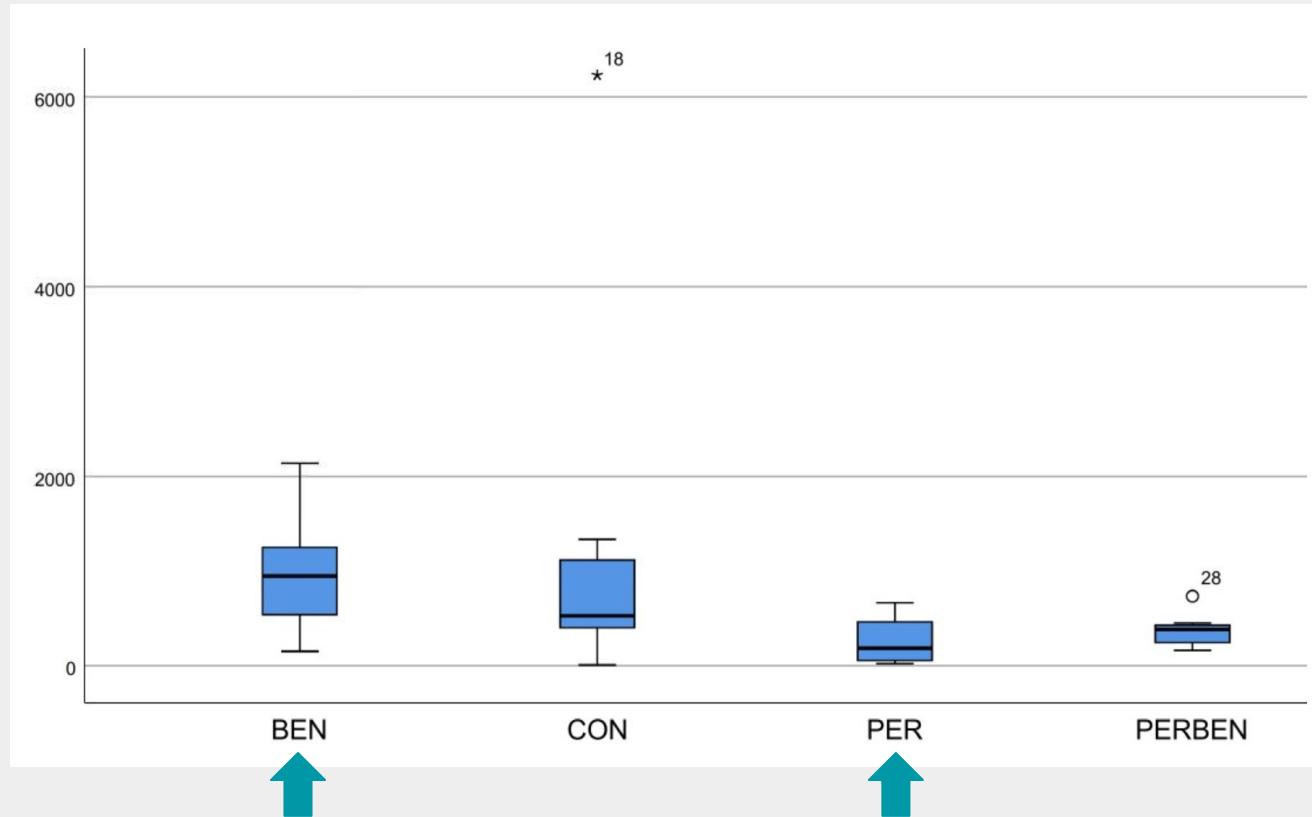


no differences on perceived effort

HIGHER FIXATION RATE ON RELEVANT ELEMENTS FOR BEN THAN FOR PER IN THE CREATION TASK



HIGHER FIXATION RATE ON RELEVANT ELEMENTS FOR BEN THAN FOR PER IN THE CREATION TASK



DO DIFFERENT USER STORIES TEMPLATES HAVE AN
IMPACT ON THE **UNDERSTANDING** OF USER STORIES?

DO DIFFERENT USER STORIES TEMPLATES HAVE AN IMPACT ON THE **UNDERSTANDING** OF USER STORIES?

no difference
on accuracy



DO DIFFERENT USER STORIES TEMPLATES HAVE AN IMPACT ON THE **UNDERSTANDING** OF USER STORIES?

no difference
on accuracy



no differences
on speed



DO DIFFERENT USER STORIES TEMPLATES HAVE AN IMPACT ON THE **UNDERSTANDING** OF USER STORIES?

no difference
on accuracy



no differences
on speed



differences in terms
of visual effort

DO DIFFERENT USER STORIES TEMPLATES HAVE AN IMPACT ON THE **UNDERSTANDING** OF USER STORIES?

no difference
on accuracy



differences in terms
of visual effort



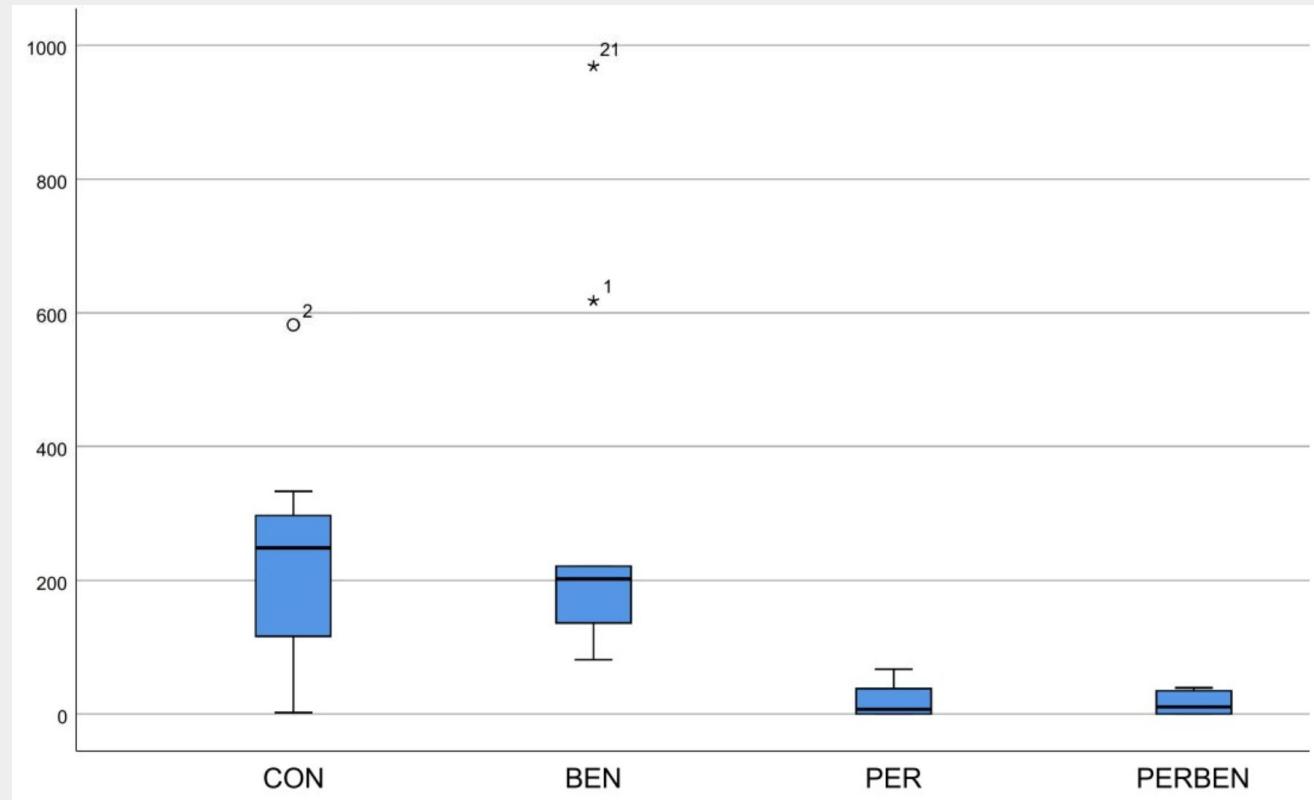
no differences
on speed



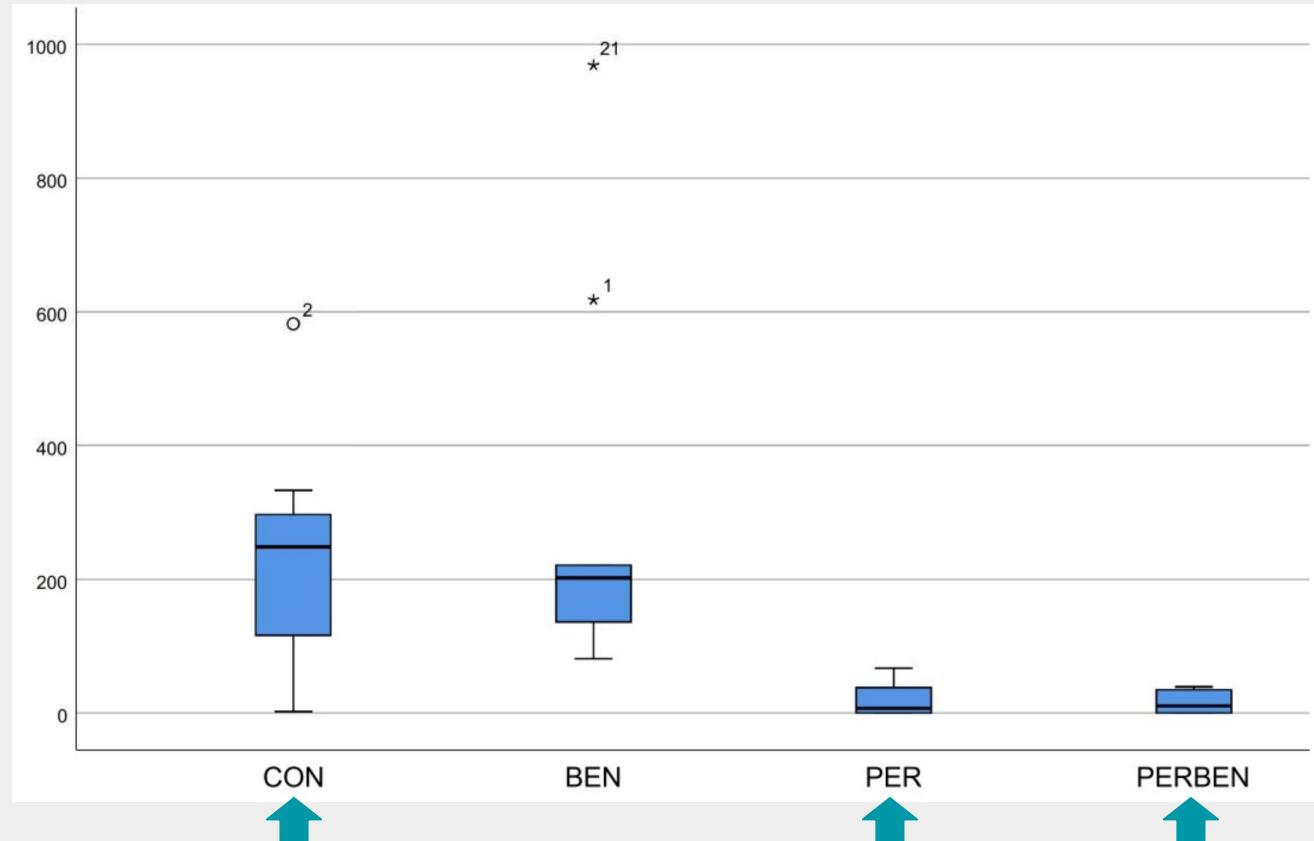
no differences on
perceived effort



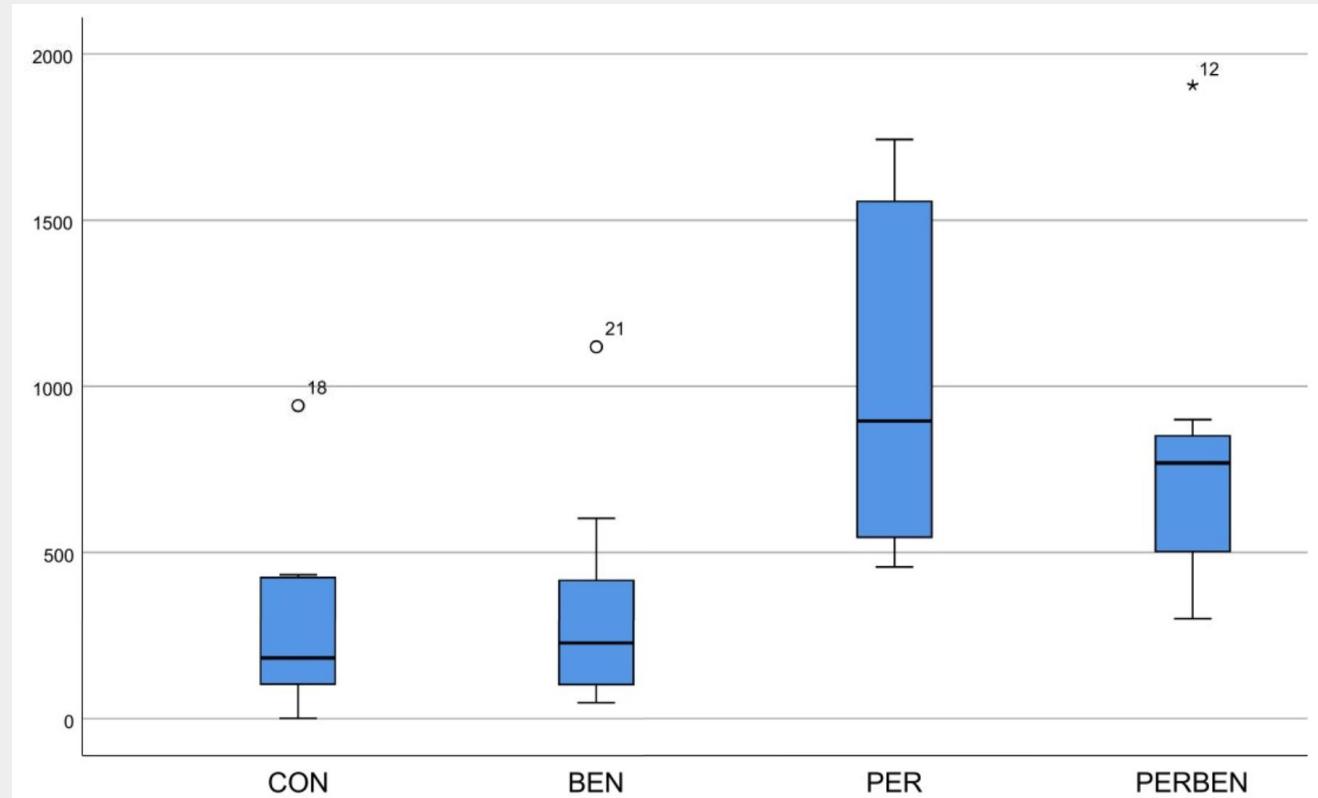
HIGHER FIXATION RATE ON RELEVANT ELEMENTS FOR CON THAN PER AND PERBEN FOR THE UNDERSTANDING TASK



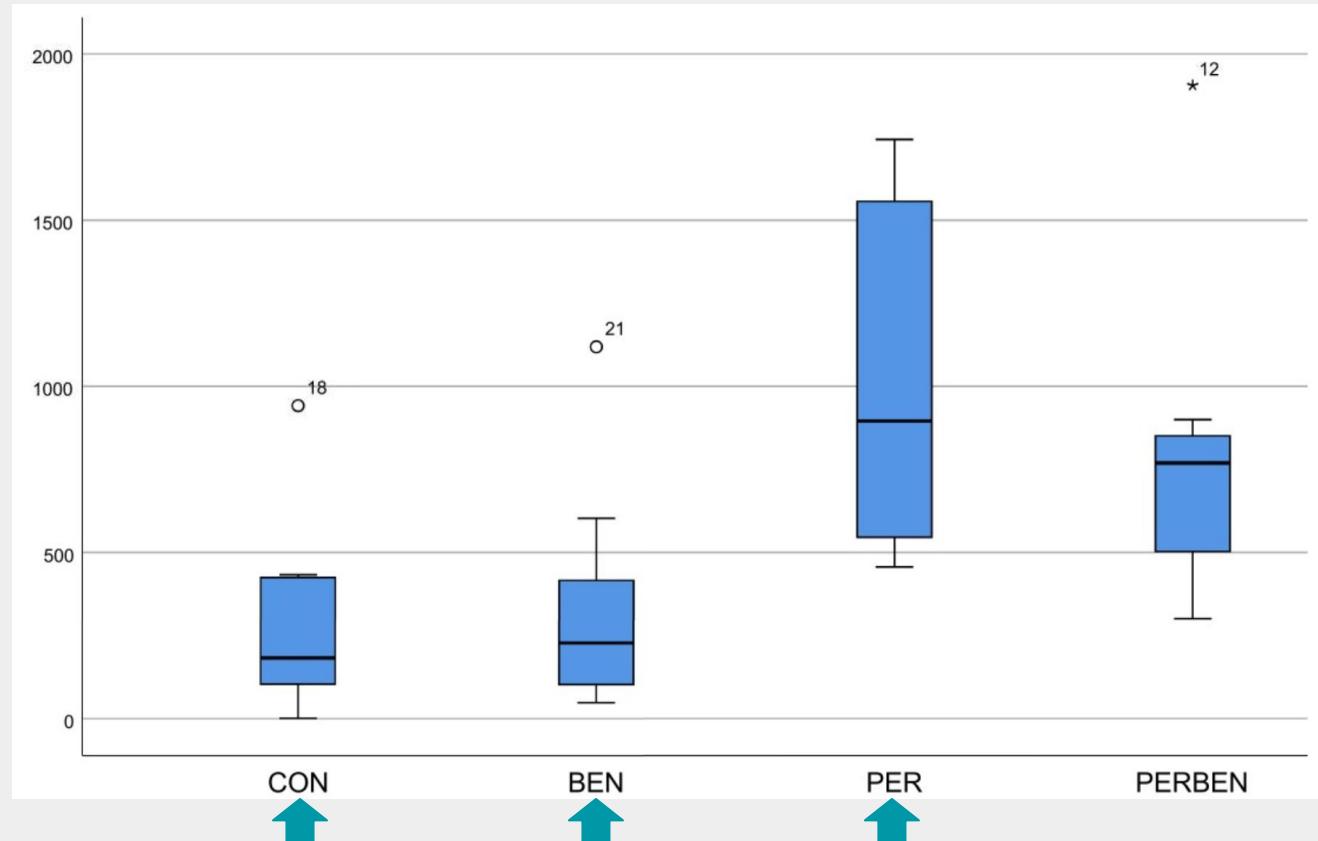
HIGHER FIXATION RATE ON RELEVANT ELEMENTS FOR CON THAN PER AND PERBEN FOR THE UNDERSTANDING TASK



HIGHER FIXATION RATE ON IRRELEVANT ELEMENTS FOR PER THAN CON AND BEN FOR THE UNDERSTANDING TASK



HIGHER FIXATION RATE ON IRRELEVANT ELEMENTS FOR PER THAN CON AND BEN FOR THE UNDERSTANDING TASK



TENDENCY FOR A HIGHER VISUAL EFFORT IN THE FIRST USER STORIES THAN IN THE LAST ONES



A heatmap overlay is applied to the text area, showing higher visual engagement (red/yellow) in the first few user stories and lower engagement (blue/cyan) in the last few. The heatmap is concentrated on the question and the first six stories.

Which user stories are related to the media content shared on the website? (Answer out loud)

1. In order to view the media in the album, as a visitor, I want to select an album.
2. In order to contact the administrator, as a visitor, I want to use the contact form.
3. In order to get access to the user-only features of the website, as a user, I want to login using my email address and password.
4. In order to be recognized, as a user, I want to be able to add an image to my profile page.
5. In order to change the description of my content, as a user, I want to edit the media in my gallery.
6. In order to show my content to other people, as a user, I want to add content to the media gallery.
7. In order to know more about the contributor of the content, as a visitor, I want to see who added the content.

Continue >>

THREATS TO VALIDITY

THREATS TO VALIDITY



conclusion

number of participants

THREATS TO VALIDITY



conclusion

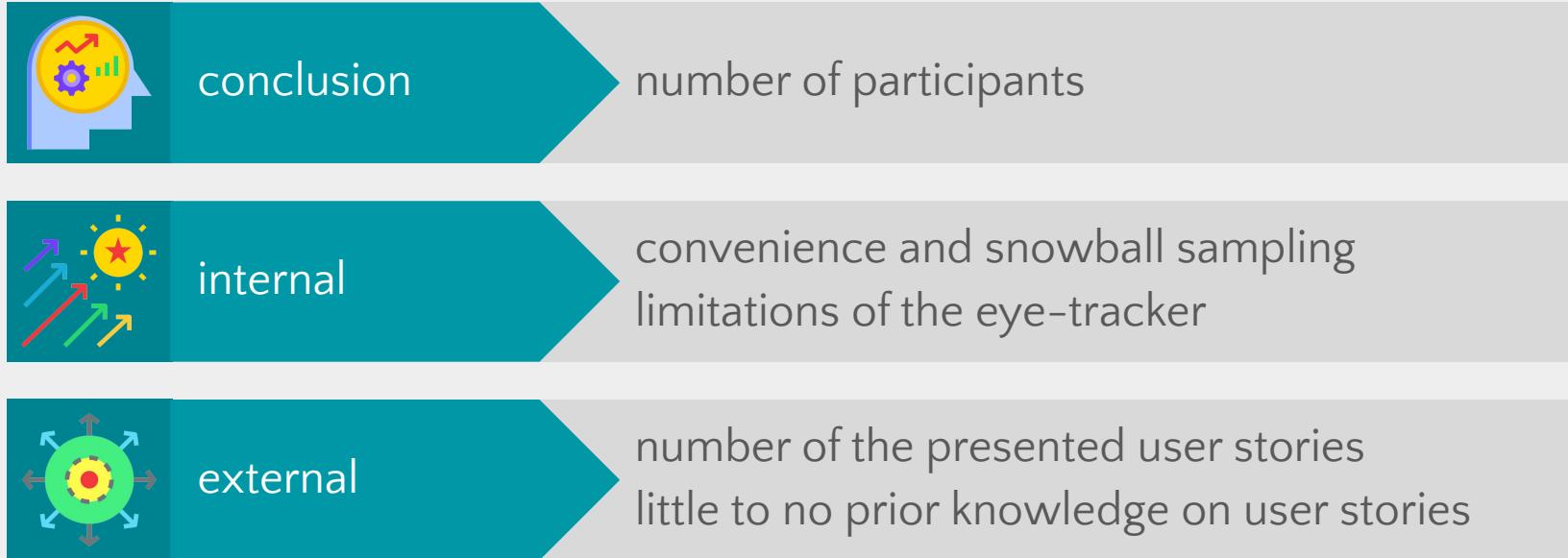
number of participants



internal

convenience and snowball sampling
limitations of the eye-tracker

THREATS TO VALIDITY



THREATS TO VALIDITY



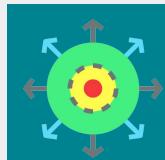
conclusion

number of participants



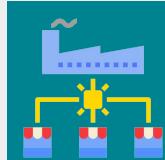
internal

convenience and snowball sampling
limitations of the eye-tracker



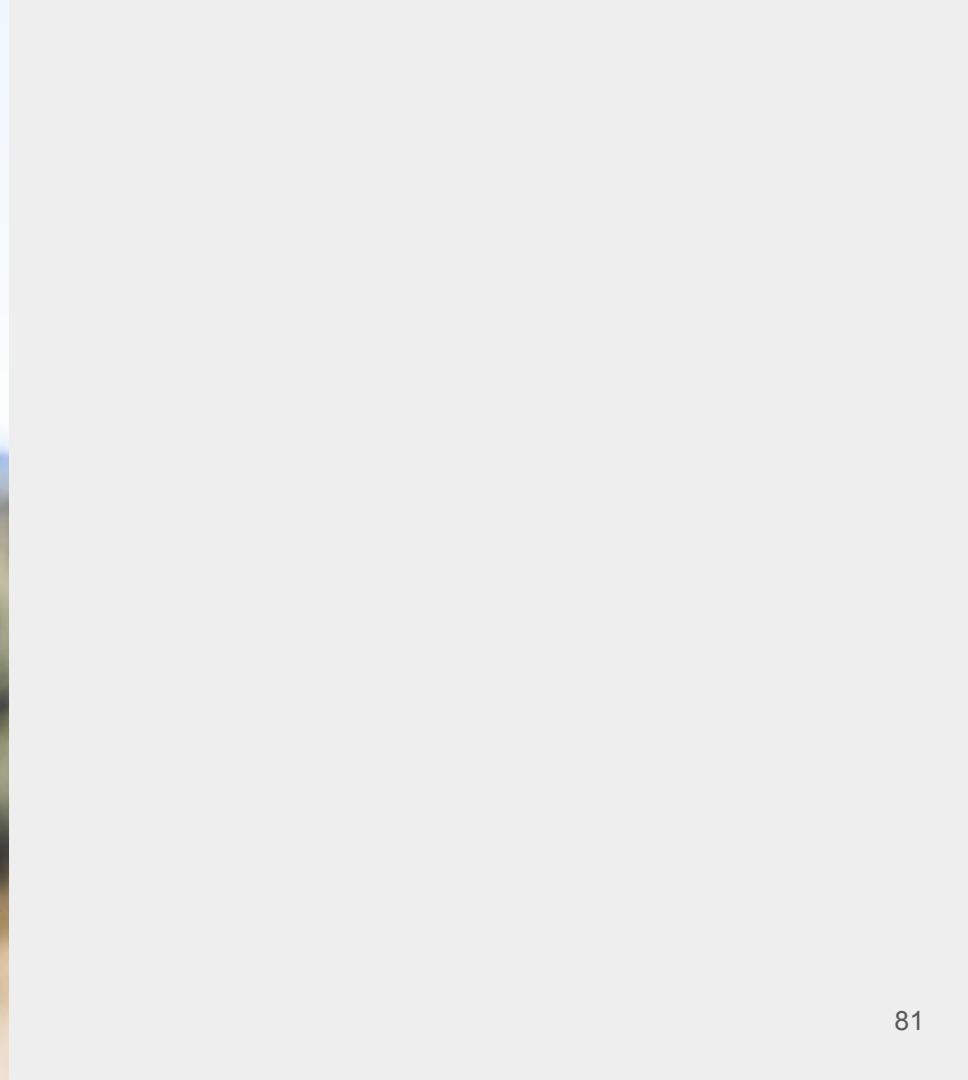
external

number of the presented user stories
little to no prior knowledge on user stories



construct

video tutorial
no information on what was being tested





NO TEMPLATE OBTAINED
THE BEST OVERALL RESULT



NO TEMPLATE OBTAINED
THE BEST OVERALL RESULT

GREATER VISUAL EFFORT
WHEN USING PERSONAS

THANK YOU

QUESTIONS?

