CPSC 481 Project Stage Two Report
Team L

Jason Shuji Chen Amir Hussain Alex Stark

Israa Farouk Bhavan Pahuja

October 18, 2020

Project Description:
This project is an AR app aimed at people who like to visit museums. This app aims to replace the current standard of looking at the physical plaque descriptions at each display with being able to point your camera at an artifact and have the description appear on your phone or be read out to you. We also aim to provide more than just the text description of the artifacts, for example if the artifact is a dinosaur skeleton the app will allow users to see what scientists believe the dinosaur may have looked like, or if the artifact is a sword it can also display other relevant artifacts and related information such as the person who wielded the sword. The objective of this app is to transform the typical museum experience of just looking and reading into a more hands on and interactive experience, while also accommodating people with disabilities or language barriers by providing multiple ways to consume the information provided about exhibits. The goal is to engage and immerse users into the world of the artifacts.

Stakeholders & Users:

- Museum Visitors
- Museum Employees

User Task Descriptions:

- Must be included:
  - Log in to museum system (visitor, staff, etc.).
  - View exhibit description.
  - Artifact descriptions presented in multiple ways.
- Important:
  - Translation of exhibit. description/Accessibility options.
  - A virtual tour guide.
- Could be included:
  - Share visits on social media.
  - Show what areas of the museum. have/ have not been visited.

IDEO cards:

- Survey and Questionnaires (Ask)
- Competitive Product Survey (Learn)
- Scenarios (Try)

Justification:
AR apps, despite having been around for many years, are not very common. Yes, many smart phones are capable, but no implementation has been made very popular. By conducting surveys and questionnaires, we can attempt to understand why many people do not use AR apps and what we can do to make an app that they are comfortable using. It will also allow us to see what museum goers would like to see in an app that might improve their experiences during their visits. We will then examine other museum apps that are currently in use to see if they are missing any features that our surveys indicate visitors might want, as well as to discover if there are any features that did not come up in the surveys. These comparisons also allow us to come up with ways to differentiate our project from what is already on the market so that we can develop the most competitive final product possible. Lastly, creating scenarios will force us to consider how different users might try to complete the various tasks that our app would include, which will give us the ability to create an app that is both useful and usable.

Survey and Questionnaires (Ask):

Survey the stakeholders about the current interactions between visitors and artifacts.

We surveyed potential museum visitors by publishing this (https://survey.ucalgary.ca/jfe/form/SV_2sGpfmlJy7vIIU5) to our fellow classmates.

The survey asks 7 questions regarding augmented reality and museum experiences.

The things we learned from the survey:

1. Most participants had little to no experience in terms of augmented reality applications.
2. Most participants have not used a museum app before.
3. Most participants have difficulty reading the plaques.
4. All the participants prefer more interactive experiences in a museum.
5. Most participants prefer information be delivered visually.
6. Most participants prefer the look of the exhibits.
7. More than 50% of the participants find language a barrier during their visits.

Competitive Product Survey (Learn):

British Museum Guide:

The British museum is one of the most popular museums out there. They do some things well such as displaying a map of the museum showing where you have visited and where you have not. Gives you the ability to time your visits, that way if you only plan on staying for 2 hours it can tell you what you can see in that time. It gives a speech to text option as well and includes multiple pictures of each artifact. The app itself is very glitchy and does not seem to respond well. The pictures of the artifact seem to all be very similar and do not give enough perceptive. It does offer a speech to text however it is given in a robotic voice rather than an individual reading it with emotions.

We plan on having our app display the map, and time your visits like the British museum app. However, we plan to make it a much smoother experience for the user. We intend on giving multiple viewpoints of the artifacts instead of a couple pictures, as well as options for animation, videos, etc. The speech to text will be involved but it will have a much better voice over to it as to show emotions in the readings.

Tourblink: British museum:

The app first prompts the user to select a language and offers a smooth experience as well. The app only displays one picture per artifact, with audio description only allows few free playbacks with more locked behind in-app purchases. The biggest drawback is the app is limited to one location, that is, the user must download another Tourblink app if they wish to visit another museum. Another flaw being that although the app offers ticket sales, clicking the button takes the users to their own website which it offers tickets to every museum available, forcing the user to search through the website to find the ticket for the museum they are currently visiting.

Our app will change the language based on the user's phone settings. Moreover, we aim to have the app work universally for all museums, therefore, users will not have to download separate apps while visiting different museums. We will achieve that through scanning the user's tickets, the app will detect the location and load the corresponding data (Descriptions, 3D models, animation, etc.) provided by the museum.

Scenarios (Try):

Refer to the appendix for full scenario.

Summary:

This is one of many scenarios that showcase the usability and problem solving that this app is capable of. The key points to note are the ease of the use of the UI & the variety of ways the app showcases information. We wanted to create a situation that would have a lot of barriers. As to demonstrate how will out app fix issues many will come across. since a large demographic of museum visitors are the elderly, and most of the elderly are technologically illiterate. We wanted to ensure the UX is perfect for our app. It let us walk through what problems users may experience and what useful features we may need.

Reflections:

What went well:
In terms of survey, we were able to get some responses from our classmates, friends, and family. And we were able to see a clear report provided by Qualtrics.

Competitive learning survey allowed us to see what our app needs to compete with. It showed us exactly what the competition looked like and what we need to achieve. It gave us a standard and things we personally enjoyed from the app. We saw a lot of things that can be improved upon, as well as other ideas that should be introduced into our own projects.

Scenarios allowed us to look at our project and give a run through of how we believed the app to run through. By sitting down and looking at it we were able to see what problems a person may encounter and how we can help fix those problems.

What went poorly:

For the survey, the amount of responses we obtained was not optimal, which may result in less accurate data being obtained. Because of the Covid-19 pandemic we could not actually go straight into a museum and try the app, rather we had to open the app and imagine what it could have been like. as for the scenario we were all a bit narrow minded as well, we attempted to come up with a person who would have the most difficulty with working the app , however in terms of technology we are all quite proficient at it. Which means none of us really know exactly what kind of scenario someone who is technologically challenged would have. Instead we had to make educational guesses as to where most people would struggle.

Appendix

Repository: https://github.com/csj9703/CPSC-481-Project

Portfolio: https://csj9703.github.io/CPSC-481-Project/

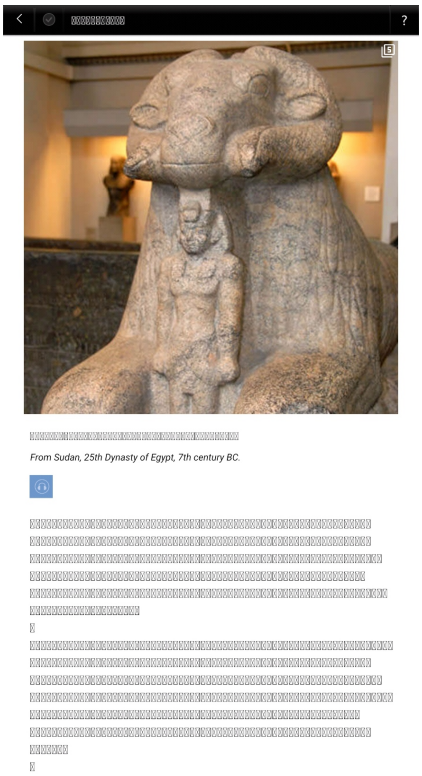


Figure 1: Glitch where app does not display text

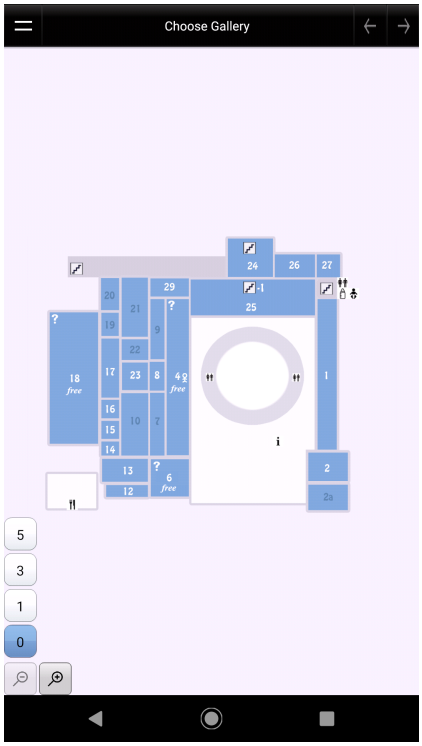


Figure 2: A map from the British museum guide App

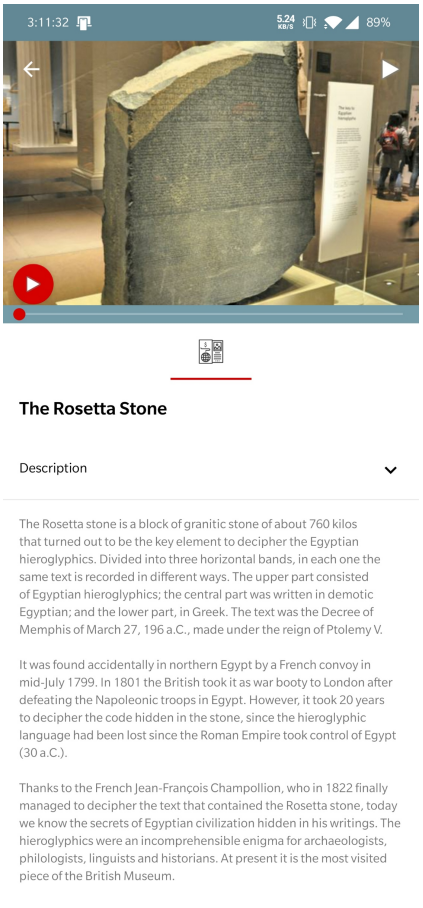


Figure 3: Interface for Tourblink

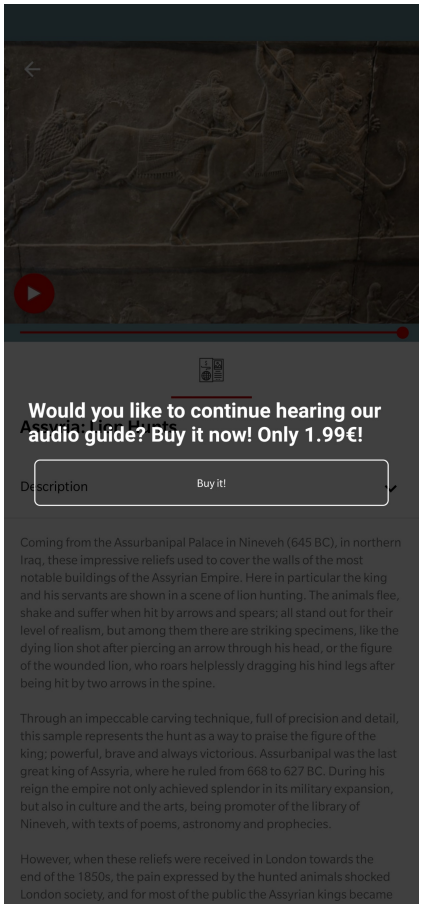


Figure 4: Tourblink having a paywall

Full Scenario:

Vladimir Schmidtov is visiting from Russia and wants to see what museums are like in Britain. He has an auditory impairment, is paralyzed from the waist down, and speaks little to no English. He is a 69-year-old man who is at high risk due to the Covid-19 pandemic, so his top priority is safety. Once inside he has difficulty reading the plaques which display the information about exhibits. Since he is in a wheelchair, he has difficulty viewing the relics. He goes to an employee to ask for assistance, however she cannot understand him, and he cannot understand her. She points towards the multilingual posters for the app and he downloads it using the QR code on the poster.

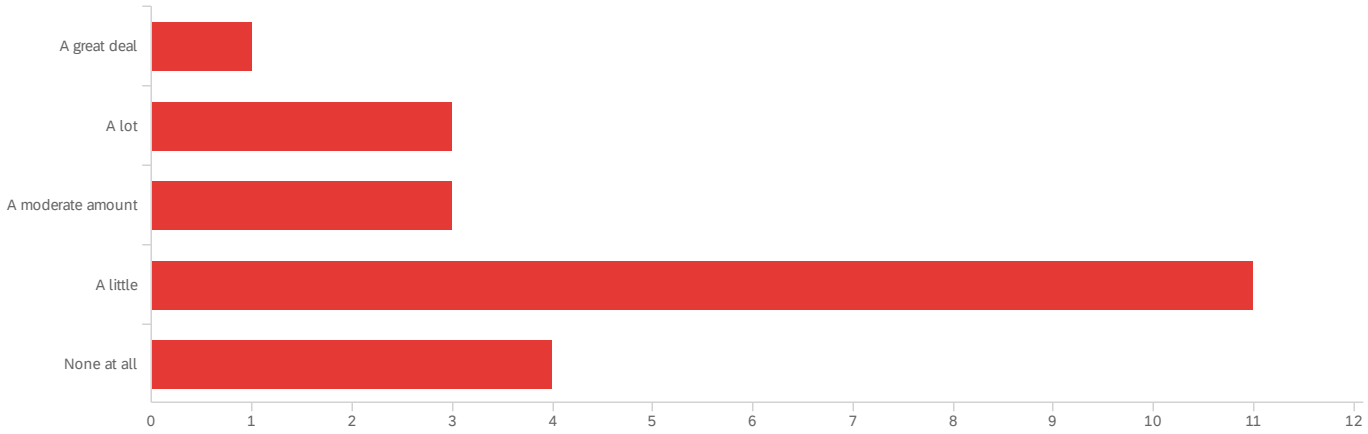
The app auto detects his phone language and sets it to Russian so he can understand the language. Once in the app, it prompts him to point toward an artifact, he points towards the Tipu Sultan sword and information about the sword appears. At first, he has difficulty reading the information, by using the menu on the app he increased the font and learned a lot about the sword. He also accesses information on how historians believed the sword was used. He was able to access this information in many formats, such as a YouTube video, Wikipedia page, or a 3D model. Once he had finished looking at the sword, he is greeted with a menu that displays unvisited areas/artifacts. Allowing him to choose what he wants to see next. This helps him to view all the artifacts in the museum and once he had done so he leaves the museum feeling well informed and immersed in the world of the relics he had just seen.

Default Report

Museum Companion Application Research Survey

October 17, 2020 5:53 PM MDT

Q1 - How familiar are you with AR (Augmented Reality) applications/ software?

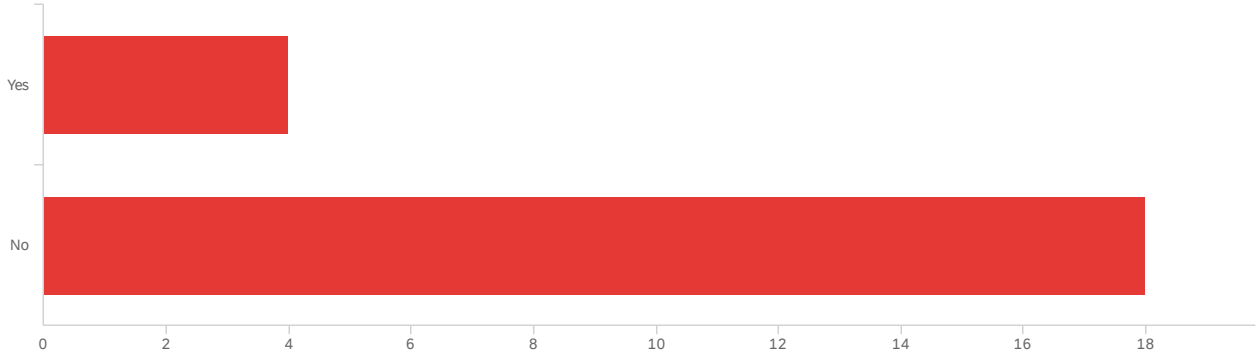


#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	How familiar are you with AR (Augmented Reality) applications/ software?	1.00	5.00	3.64	1.07	1.14	22

#	Field		Choice Count
1	A great deal	4.55%	1
2	A lot	13.64%	3
3	A moderate amount	13.64%	3
4	A little	50.00%	11
5	None at all	18.18%	4
			22

Showing rows 1 - 6 of 6

Q2 - Have you used a museum app before?



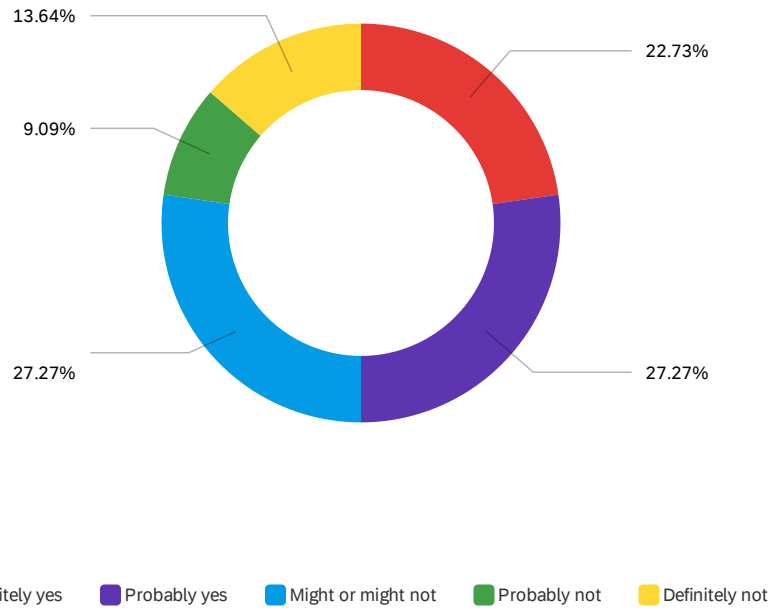
#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	Have you used a museum app before?	1.00	2.00	1.82	0.39	0.15	22

#	Field		Choice Count
1	Yes	18.18%	4
2	No	81.82%	18
			22

Showing rows 1 - 3 of 3

Q3 - Have you ever had difficulty reading descriptions on plaques during your visits?

#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	Have you ever had difficulty reading descriptions on plaques during your visits?	1.00	5.00	2.64	1.30	1.69	22

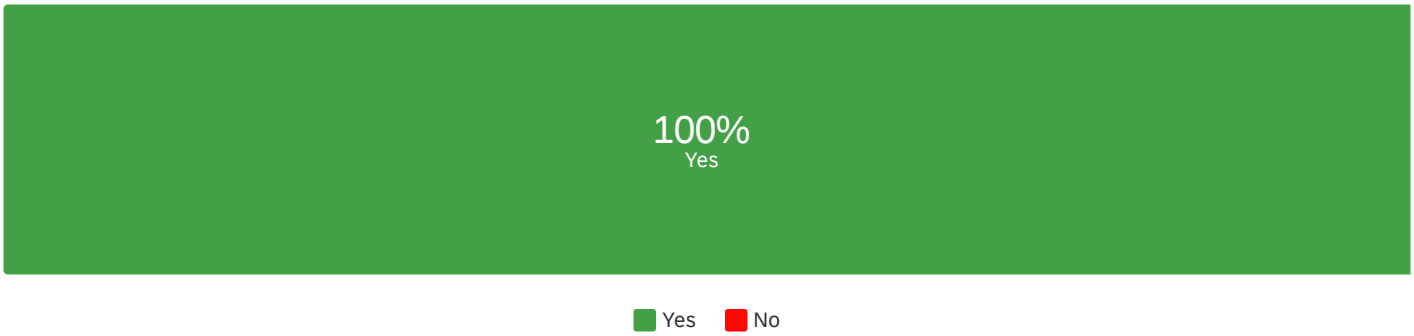


#	Field	Choice Count
1	Definitely yes	22.73% 5
2	Probably yes	27.27% 6
3	Might or might not	27.27% 6
4	Probably not	9.09% 2
5	Definitely not	13.64% 3
		22

Showing rows 1 - 6 of 6

Q4 - Would you prefer more interactive experiences in a museum?

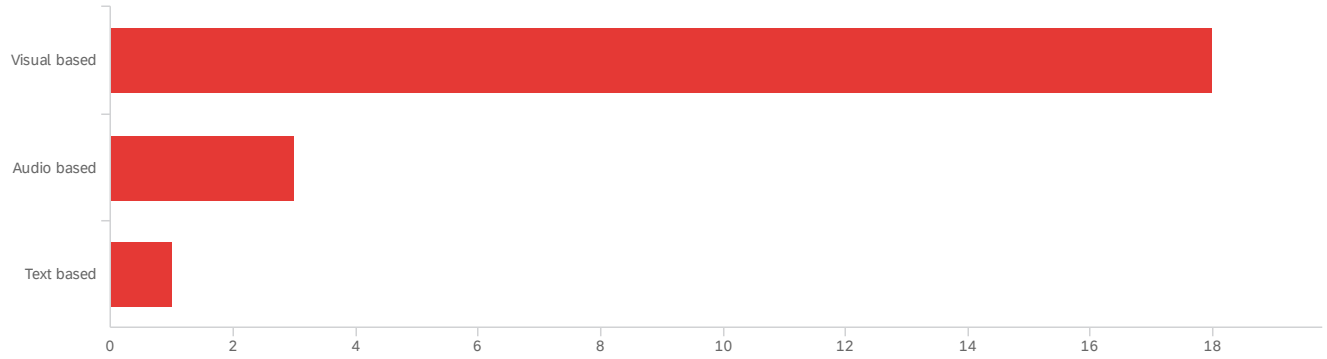
#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	Would you prefer more interactive experiences in a museum?	1.00	1.00	1.00	0.00	0.00	22



#	Field	Choice Count
1	Yes	100.00% 22
2	No	0.00% 0
		22

Showing rows 1 - 3 of 3

Q5 - How would you prefer information be delivered?



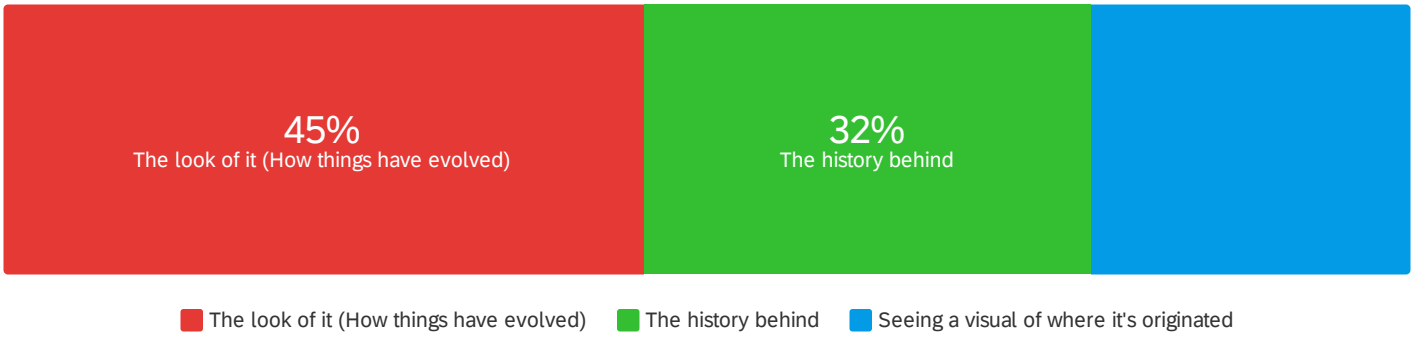
#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	How would you prefer information be delivered?	1.00	3.00	1.23	0.52	0.27	22

#	Field		Choice Count
1	Visual based	81.82%	18
2	Audio based	13.64%	3
3	Text based	4.55%	1
			22

Showing rows 1 - 4 of 4

Q6 - What aspect of a museum exhibit do you find the most interesting?

#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	What aspect of a museum exhibit do you find the most interesting?	1.00	3.00	1.77	0.79	0.63	22

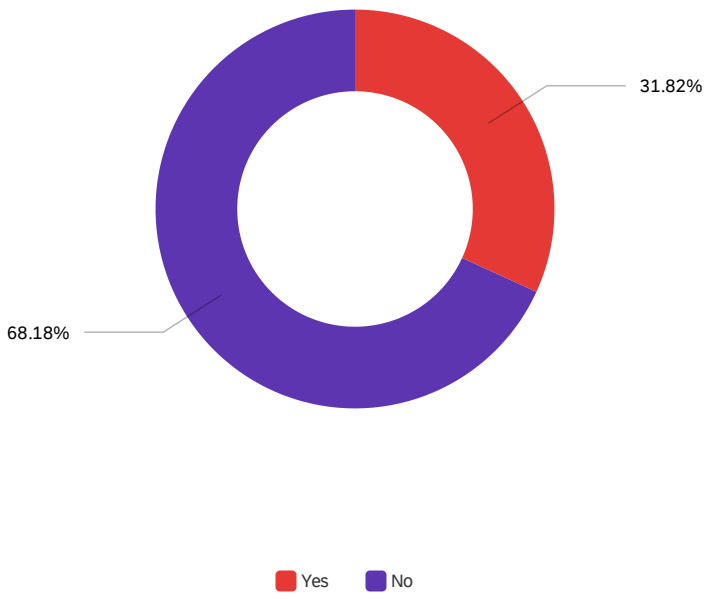


#	Field		Choice Count
1	The look of it (How things have evolved)	45.45%	10
2	The history behind	31.82%	7
3	Seeing a visual of where it's originated	22.73%	5
			22

Showing rows 1 - 4 of 4

Q7 - Do you find language a barrier when visiting exhibits?

#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	Do you find language a barrier when visiting exhibits?	1.00	2.00	1.68	0.47	0.22	22



#	Field		Choice Count
1	Yes	31.82%	7
2	No	68.18%	15
			22

Showing rows 1 - 3 of 3

End of Report