

ABOUT US

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Introduction

01

Prior Considerations

02

Idea

03

Analysis

04

TABLE OF CONTENTS

05

Low-Fi

06

Medium-Fi

07

High-Fi

08

Controlled Experiment

01

Introduction



Introduction

- The use of fake news in order to gain popularity and political consensus is happening more and more often all over the world.
- Sometimes it is quite easy to detect a fake news, but it can happen that a person without previous education can trust everything he reads on the web and starts to spreading of it.
- The **purpose** of this project is **to help people find reliable sources of information through an index**, computed using the last available news from the sources, checking if they are true or false comparing with certified sources.

02

Prior Considerations

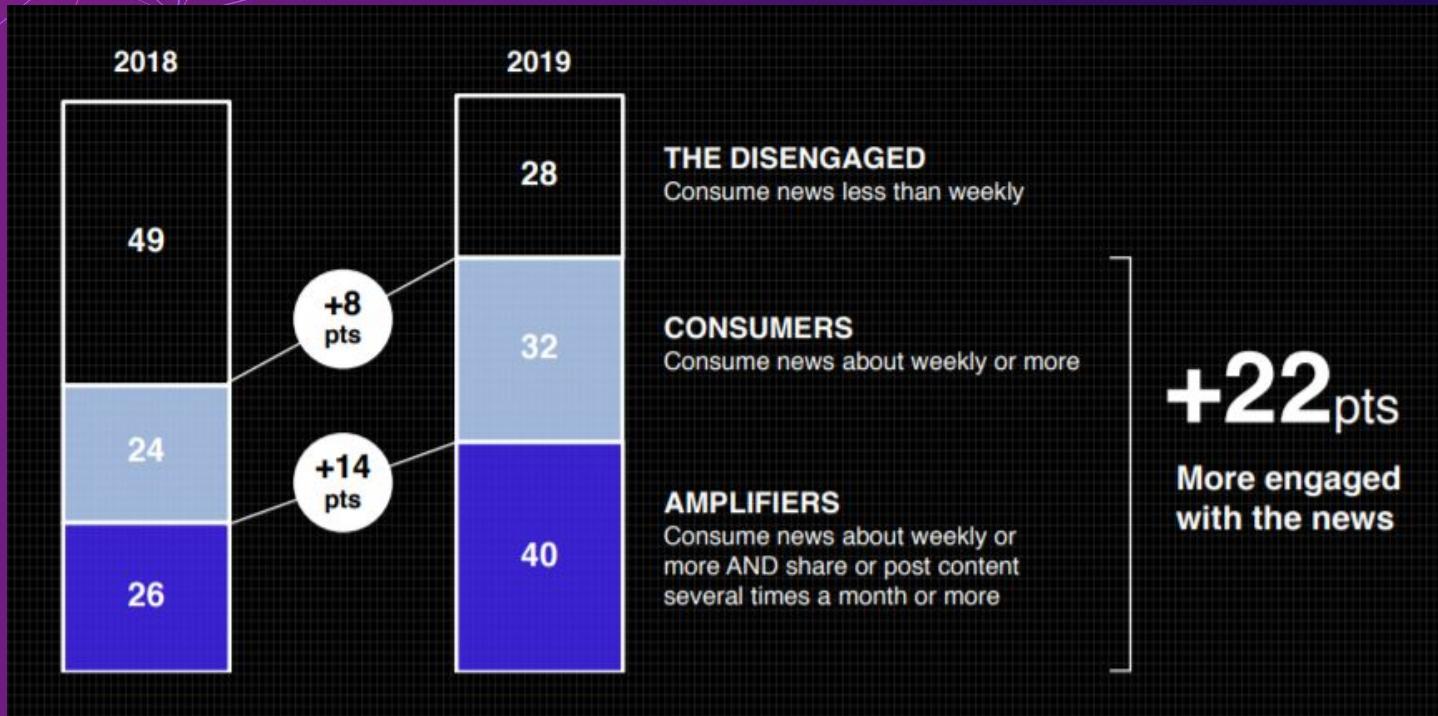
Distrust Continues

The Trust Index is the average percent trust in NGOs, business, government and media conducted by Edelman 2019 report[1].

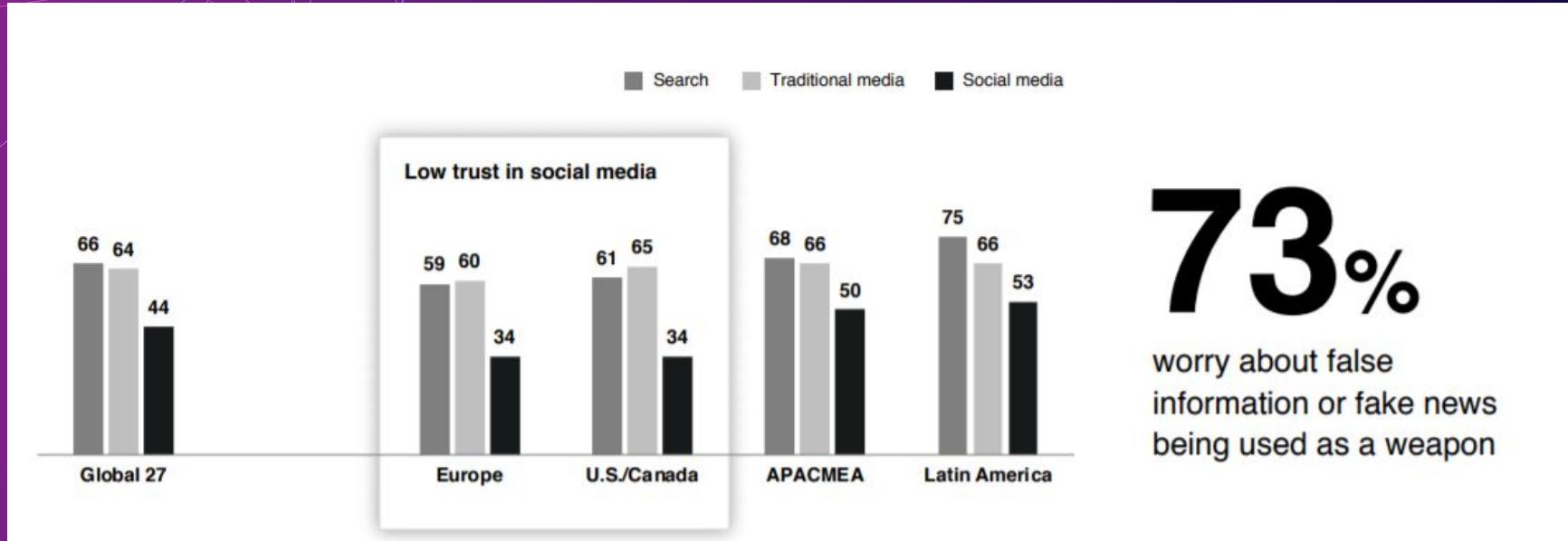
- Only a small portion of countries' NGOs, business, government and media found trustable by people.



Massive Rise in News Engagement



People are looking for reliable sources



Percent who trust each source of news

A complex network graph is displayed against a purple gradient background. The graph consists of numerous small white dots representing nodes, connected by thin white lines representing edges. There are several large, dense clusters of nodes, with one prominent cluster in the lower-left quadrant and another in the upper-left quadrant. Some nodes are isolated or form small groups. A few larger triangles are also visible, composed of three nodes and their connecting lines.

03

Idea

What does this Application do ?



Search a News

User searches the News article or a topic.

Show Credibility Index



The application shows user the articles and the credibility index with respect to them.



Manage News

User can remove, add or share news.

A complex network graph is visible in the background, composed of numerous small white dots (nodes) connected by thin white lines (edges). Some nodes are larger and more prominent, suggesting they are central hubs in the network. The graph is set against a dark purple gradient background.

04

Analysis

Competitors Analysis

We have 3 main competitors:

- **Oigetit**

Oigetit is a fake news filter where every single article is assigned with a fake news filter score. It allows you to search for topics that are of interest to you. However, they don't detail the metrics they use.

- **InfoPost**

InfoPost is another fake news filter where the user has a personal AI which checks the news that user reads for credibility. It has a personal briefing in their application. The bad side about this app is that they don't have website and the topics are limited.

- **The Factual**

The Factual is a service where it uses Factual Credibility grade for articles to calculate their credibility. It shows summaries of the articles but the numbers of them are limited.



Competitor Analysis

	Oigitit	InfoPost	The Factual	FCI (Our)
Home Feed	Yes	Yes	Yes	Yes
Favorite List	No	Yes	No	Yes
Index of Reliability	Yes	No	No	Yes
Index Explanation	No	No	No	Yes
Pros	<i>Easy to use</i> <i>Well structured advanced search</i>	<i>Implements AI</i>	<i>Nice designed</i>	<i>Personal feed</i> <i>Explanation of index</i> <i>User Centered</i>
Cons	<i>No personal feed</i>	<i>Just says if a news is reliable or not</i>	<i>Not focused on user experience, static.</i>	<i>Doesn't implement AI techniques</i>

Questionnaire

We have asked the participants in our questionnaire the following questions:

- **Personal**
 - Age
 - Gender
 - Highest Education achieved
 - Current Employment Status
- **Habits**
 - Relationship with Technology
 - Interest in Latest Developments
 - Platforms they use
- **Fake News Background**
 - If they fact checked a news before

If so;

 - How often
 - From where/which platform
- **Interest in App**
 - Interest
 - Feature Suggestion/Expectation
 - If not interested why





TABLE

	Participants	Age(avg)	Gender
Italian	67	25.8	40 Male 25 Female 2 Non Binary
Turkish	22	24.9	11 Male 10 Female 1 Non Binary
English	2	23	2 Male



Requirement Analysis

We have acquired information from the first hand by reaching out the interested users.
According to their needs we have transformed our Persona and Scenarios.

User Profile

- Age: 16 to 65
- Male/Female
- Smartphone with Internet connection
- Interest in global or local events and developments
- Desire to get the most trustable source

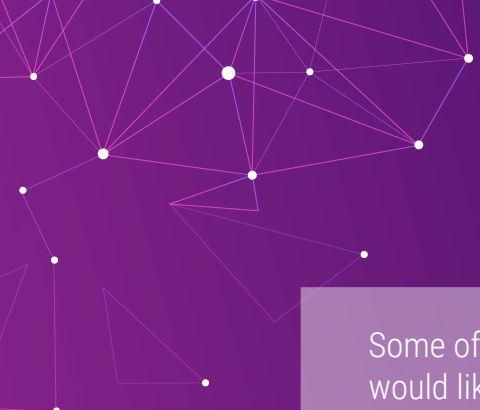


Remarks

Most of the sample prefers online information instead of keeping informed through paper print journals or TV, especially from 18 to 27 years old, but thinks that social networks are not a reliable source.

Almost the whole analyzed sample wants a list containing the favorite source of information, to be compiled by the user, from which they can get a newsfeed. *

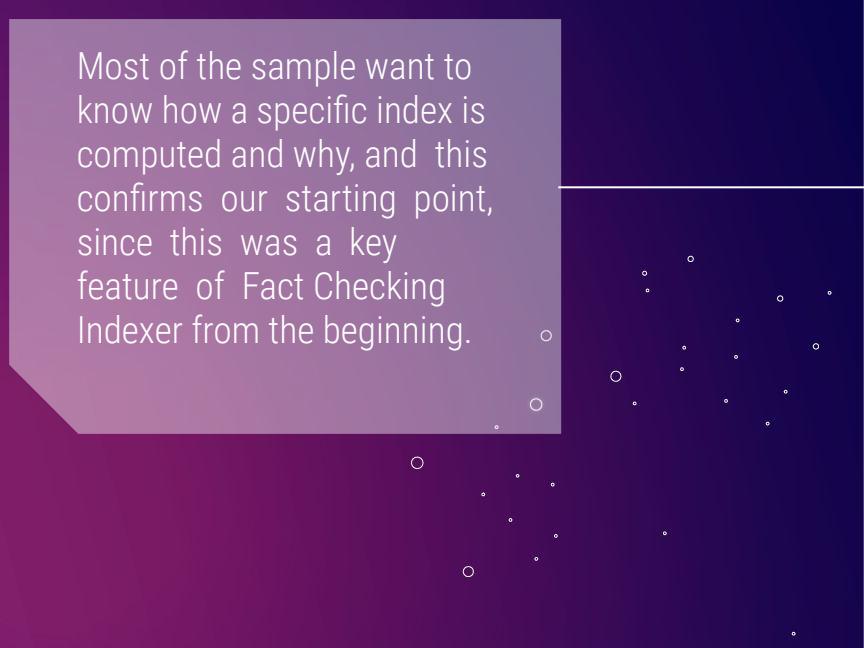
* Feature to be implemented in our application



Remarks(contd.)

Some of the analyzed sample would like to have the possibility of saving news in order to read them later. *

Unifying the data from different languages, after compiling our questionnaire, the 82% of the interviewed people said that they would be interested in downloading the app.



Most of the sample want to know how a specific index is computed and why, and this confirms our starting point, since this was a key feature of Fact Checking Indexer from the beginning.

* Feature to be implemented in our application

Some Numbers

6

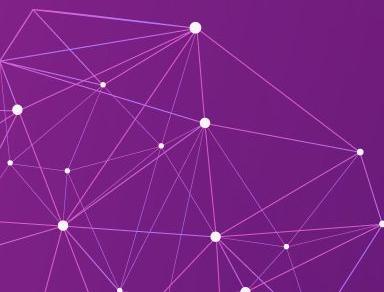
Number of people never fact
checked a news

73

Number of people who would
download our application

36

Number of people who say
they cannot live without
technology



User Analysis

- Age: Between 18 and 35 years old.
- Gender: No remarkable preferences.
- Educational level: People graduated in High school or with a Bachelor Degree were the most interested in our project.
- Job status: Students are the most interested in our project.
- Relationship with technology: Most of the sample uses technology on a daily basis, almost the 40% cannot live without it



Personas



Paolo

Age: 24

Profession: Student for Master Degree in Electrical Engineering

Location: Caserta (Italy)

Interest: During his free time, Paolo likes following politics, since he was an activist before starting university, and tries to keep updated on the last World developments.

Francesca

Age: 23

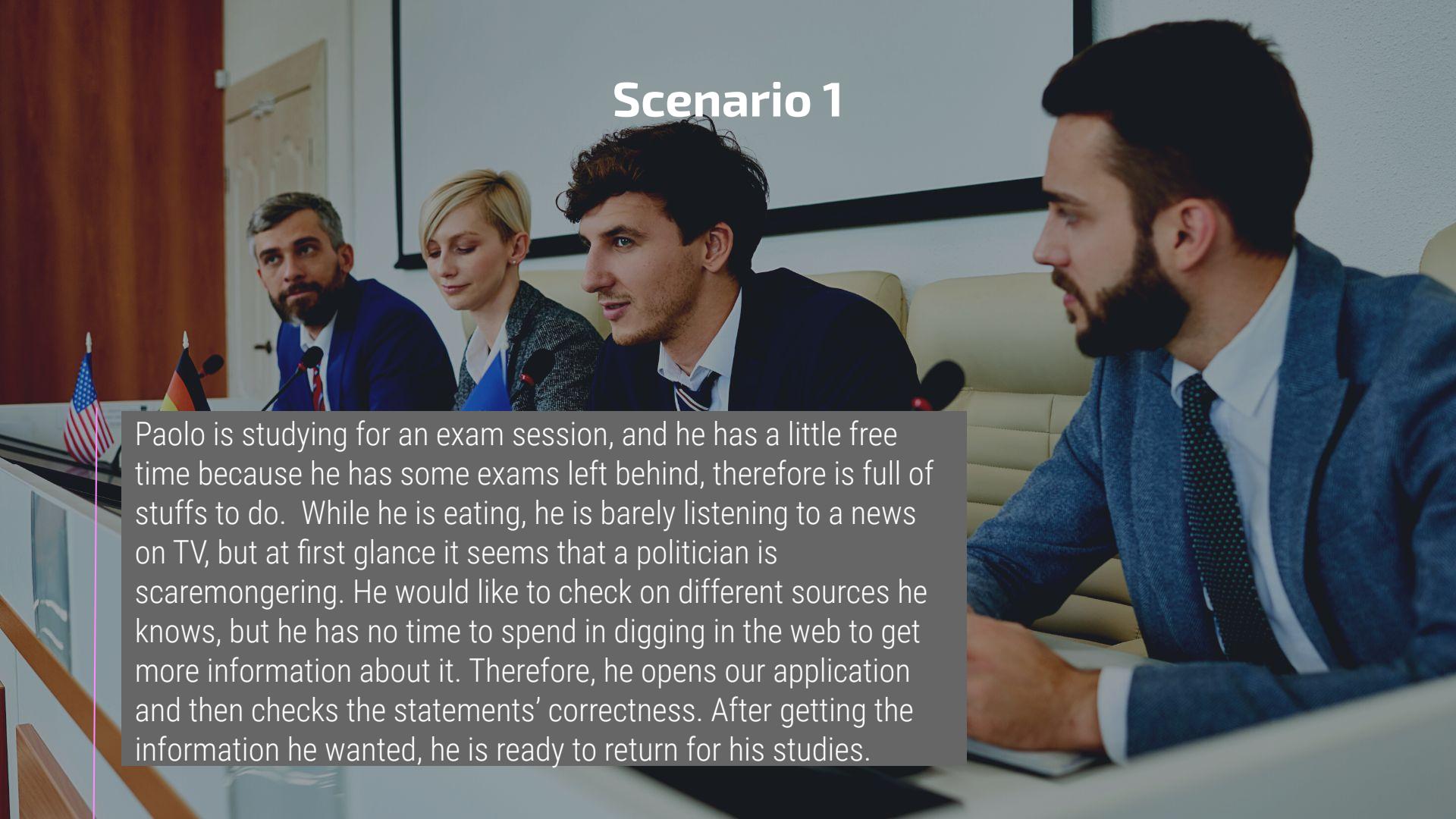
Profession: Student for Bachelor Degree in Interpreting

Location: Milan (Italy)

Interest: She never cared about politics or being update on what is happening in the World, because she was convinced of the uselessness of politicians and journalistic reportings.

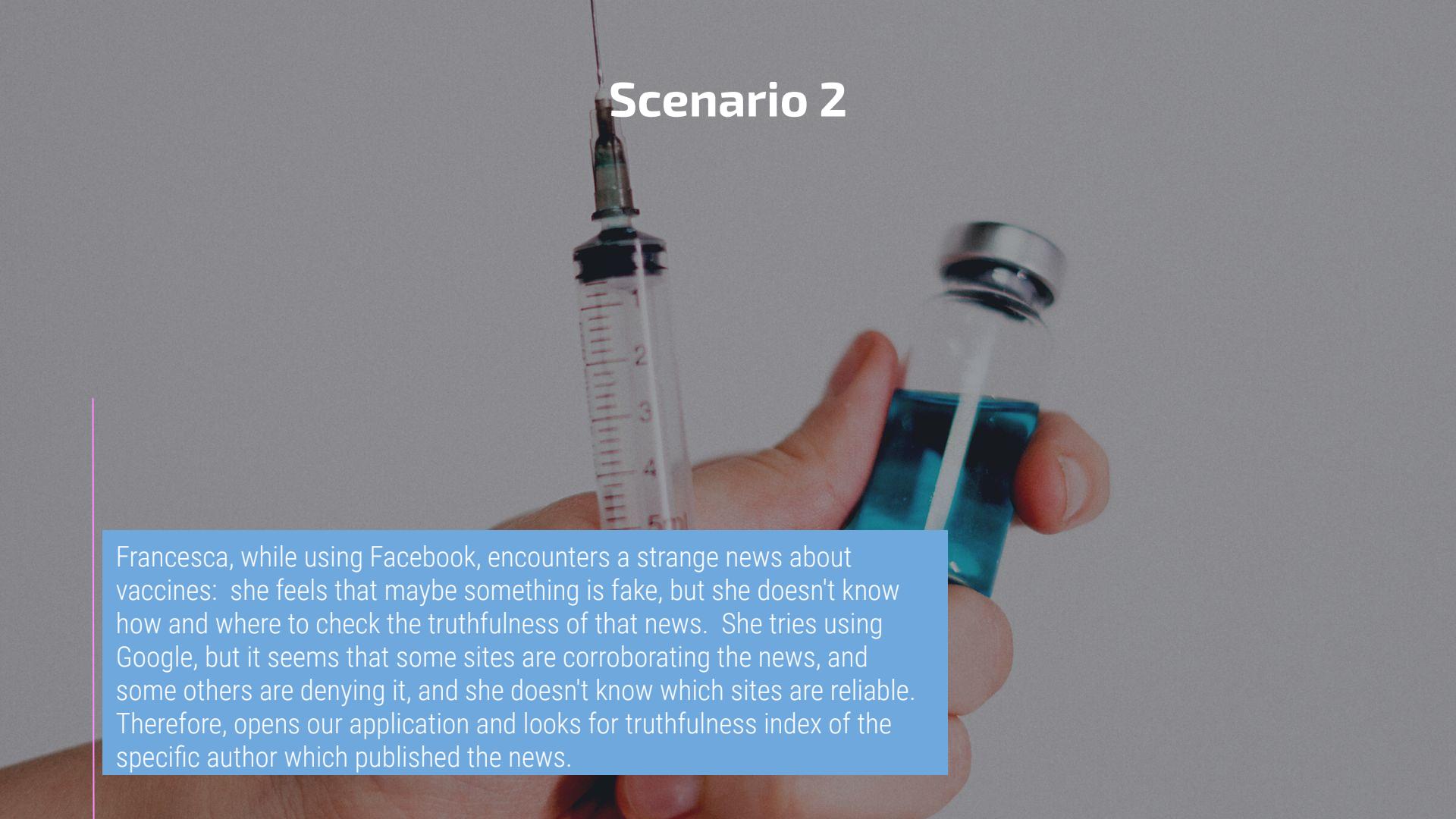


Scenario 1



Paolo is studying for an exam session, and he has a little free time because he has some exams left behind, therefore is full of stuffs to do. While he is eating, he is barely listening to a news on TV, but at first glance it seems that a politician is scaremongering. He would like to check on different sources he knows, but he has no time to spend in digging in the web to get more information about it. Therefore, he opens our application and then checks the statements' correctness. After getting the information he wanted, he is ready to return for his studies.

Scenario 2

A close-up photograph of a person's hand holding a medical syringe and a vial. The syringe is clear with red markings and contains a clear liquid. The vial is also clear with a dark blue liquid inside. The background is a plain, light color.

Francesca, while using Facebook, encounters a strange news about vaccines: she feels that maybe something is fake, but she doesn't know how and where to check the truthfulness of that news. She tries using Google, but it seems that some sites are corroborating the news, and some others are denying it, and she doesn't know which sites are reliable. Therefore, opens our application and looks for truthfulness index of the specific author which published the news.

Interviews

Out of our 91 responders, we have chosen 3 people for in depth interview. We have asked them open-ended questions for us to help improve our product. We have asked them the following questions:

- Do you follow news, if so how often ?
- How often do you think you come across fake news ?
- When you are following news how do you make sure what you are reading is accurate ?
- What would you expect specifically in an application that helps you to identify fake news ?



Interviewee # 1



Temirlan

Age: 25

Profession: Software Engineer

From: Kazakhstan

Responses:

[1]: I do, everyday.

[2]: Usually everyday I see at least 1 fake news.

[3]: I check specific keywords that may trigger me.

[4]: As a software engineer, I can say that I would expect this application to use high calibrated machine learning algorithms to detect patterns.

Insights and Needs Analysis from Temirlan



Insights

- Frequent news follower
- Knows how to detect fake news by experience
- Expects technological solutions to address this problem

Needs

- Show people how we calculate index
- Use technology stack to detect fake news

Interviewee # 2



Pedro

Age: 52
Profession: Manager
From: Brazil

Responses:

[1]: I only follow news when I get home from work while having dinner with my family.

[2]: Most of the time when I scroll on the internet I encounter fake news. Hence, i don't follow internet media much.

[3]: I trust government and NGO sources.

[4]: If I can follow the topics that I like and only get news regarding that topics it would be really nice. Of course, these news should be ranked with respect to trustable sources.

Insights and Needs Analysis from Pedro



Insights

- Not everyone follow news frequently
- Trust in official sources
- Lack of trust in internet media

Needs

- Highlighting of official sources
- Ease of use for old people (Usability in UCD)
- Allow to follow specific topics and get news only on them

Interviewee # 3



Anisa

Age: 26

Profession: Human Resources Employee

From: Kenya

Responses:

[1]: I don't follow politics because I don't like it. I only follow world developments, entertainment and magazine news. I use Twitter and follow only the most trusted news outlets from there to get informed about the world.

[2]: I come across with fake news a lot. Generally, those who share these fake news are the normal people. Hence, I don't follow people's opinions on news. However, sometimes I happen to see that even most trusted media outlets share biased news.

[3]: I look at the responses for that news and try to synchronize with the media outlets that I follow.

[4]: Sharing the news with friends should be easy.



Insights and Needs Analysis from Anisa

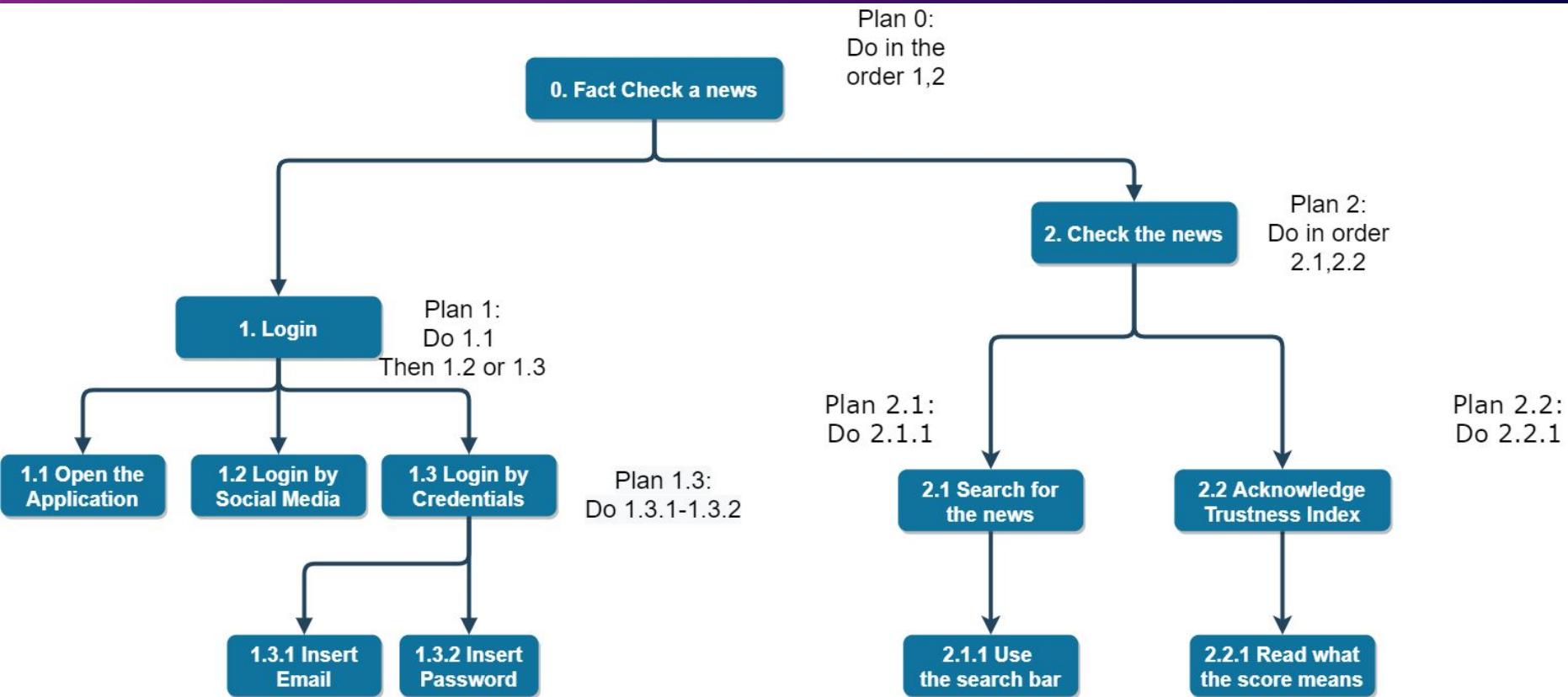
Insights

- Limitation of topics
- Trust in big media outlets but not full trust
- Desire to curb news from 1st person outlets

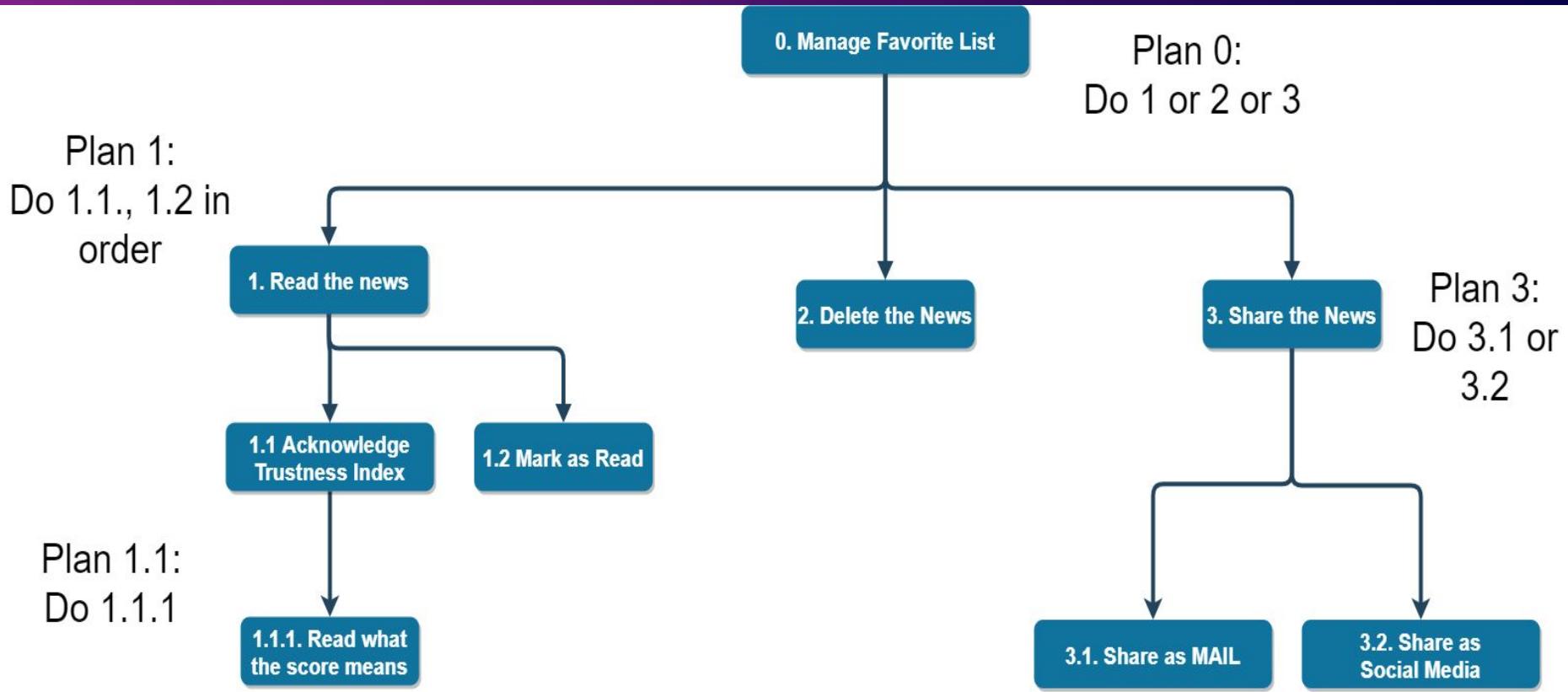
Needs

- Allow to follow media outlets
- Easy sharing options

Hierarchical Task Analysis / Fact Check a News



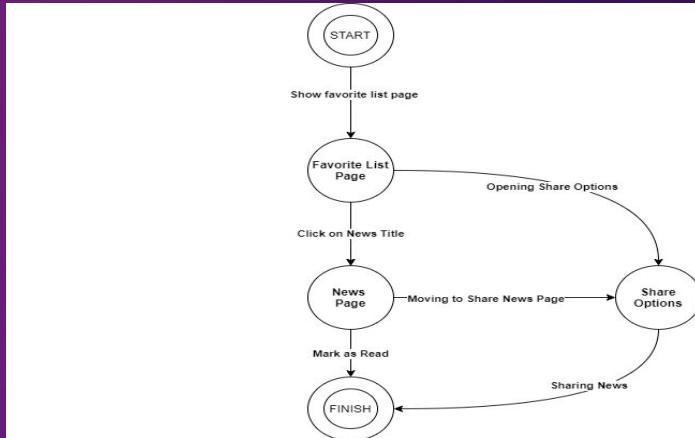
Hierarchical Task Analysis / Manage Favorite List



State Transition Networks / Fact Check a News



State Transition Networks / Manage a Favorite List





05

Low-Fi Prototype

Login Screen



Home Screen

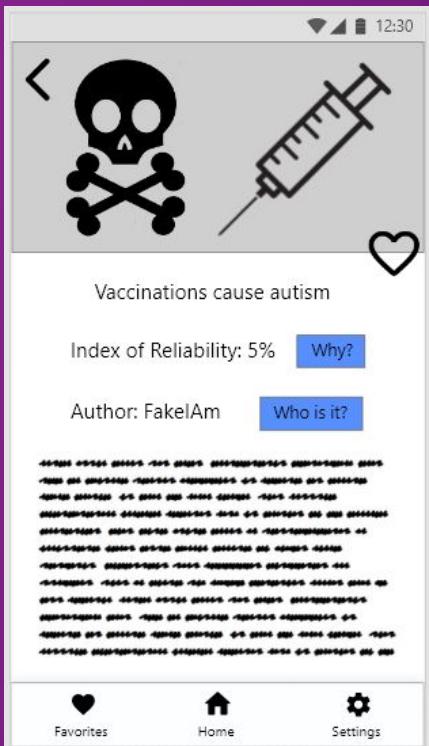
The Home Screen displays a "News Home Page" with a white header bar showing signal strength, battery level, and time (12:30). Below the header is a search bar with the placeholder "Search a news". The main content area shows three news items in a grid format:

- Vaccinations cause autism**
FakeIAm
Index of reliability: 5%
- New pandemic is spreading**
The New York Times
Index of reliability: 100%
- Homeless cooks a cat**
Il Messaggero
Index of reliability: 80%

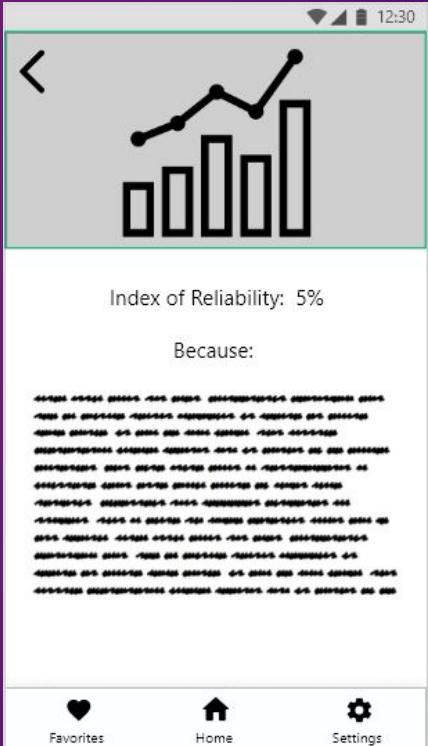
At the bottom of the screen are three navigation icons: a heart for "Favorites", a house for "Home", and a gear for "Settings".



Example Article Screen



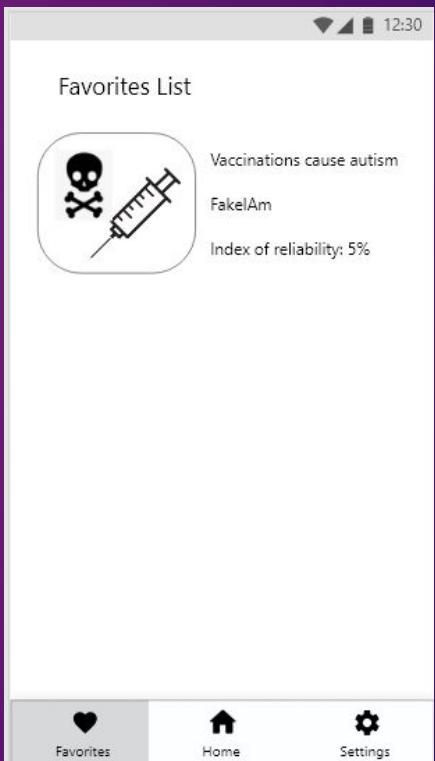
Acknowledgment Screen



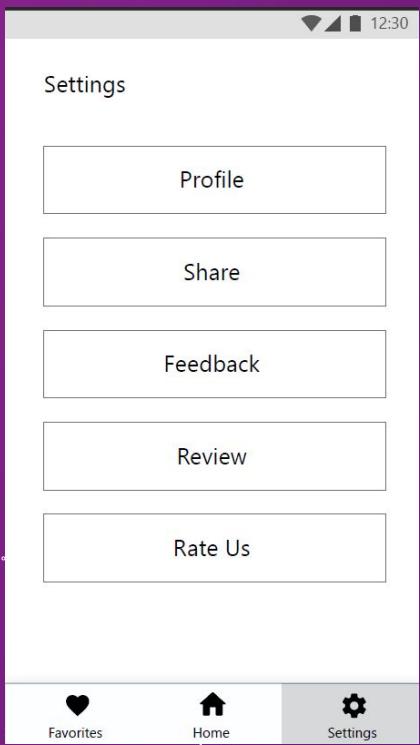
Publisher Information Screen



Favorite List Screen



Settings Screen



Evaluator: Valeria Mirabella

Prototype: Low-Fi

Date: 11/07/2020

Heuristic Evaluation

Low-Fi

Heuristics used

1. Visibility of system status
2. Match between the system and the real world
3. User control and freedom
4. Consistency and standards
5. Error prevention
6. Recognition rather than recall
7. Flexibility and efficiency of use
8. Aesthetic and minimalist design
9. Help users recognize, diagnose and recover from errors
10. Help and documentation



Evaluator: Valeria Mirabella

Prototype: Low-Fi

Date: 11/07/2020

Heuristic Evaluation

Low-Fi

0 = I don't agree that this is a usability problem at all

1 = Cosmetic problem only

2 = Minor usability problem

3 = Major usability problem

4 = Usability catastrophe

Frame	Heuristic Violated	Severity	Description/Comment
Search a news	Flexibility and efficiency of use	3	User could be interested in filter news for a specific period, or geographic areas etc. Consider designing an advanced search
Favourite list	Flexibility and efficiency of use	3	Consider the possibility to delete from favourite list, or sort the list

06

Medium-Fi Prototype

Changes after (Low-Fi) Heuristic Evaluation Feedback

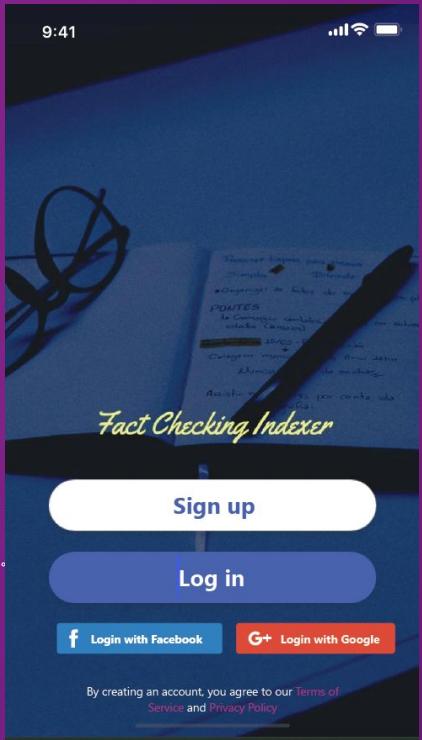
Heuristics used

We had 2 major usability problems in Low-Fi and after the feedback we focused directly on them. Hence we have done the following:

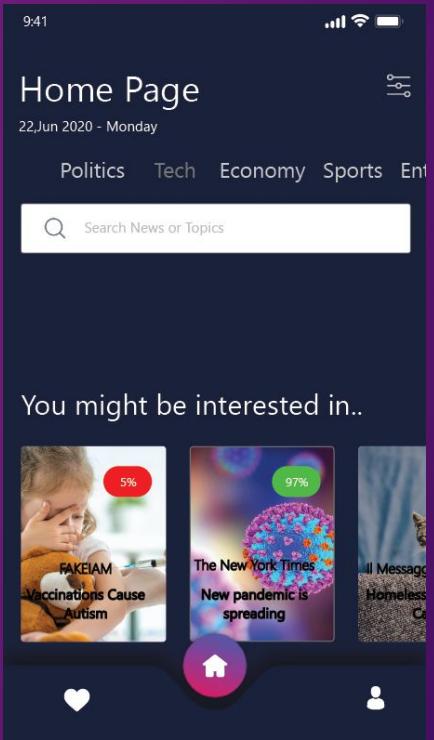
1. Added a filter page in search bar to allow user to specify location, distance and timeline for a news.
2. Added options to share and delete favorite listed articles easily.
3. We have added a more tempting UI to make the app look better.



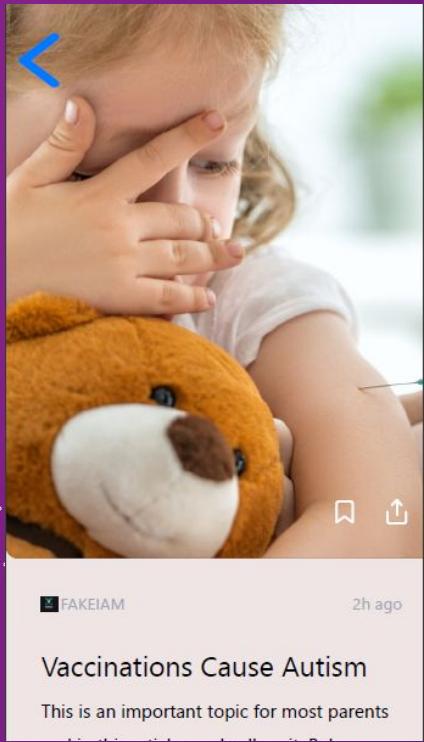
Login Screen



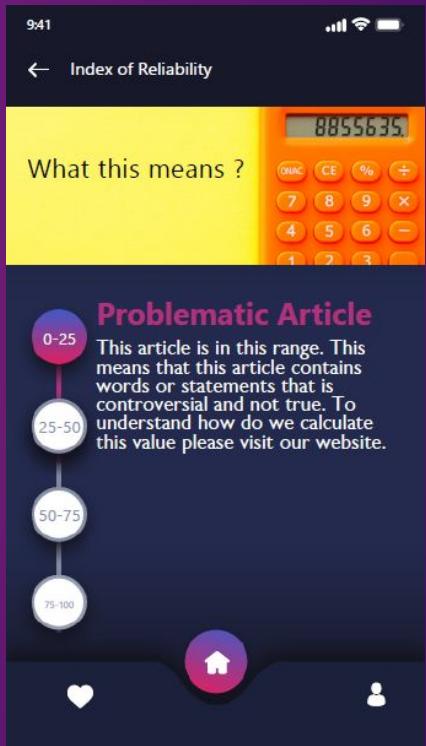
Home Screen



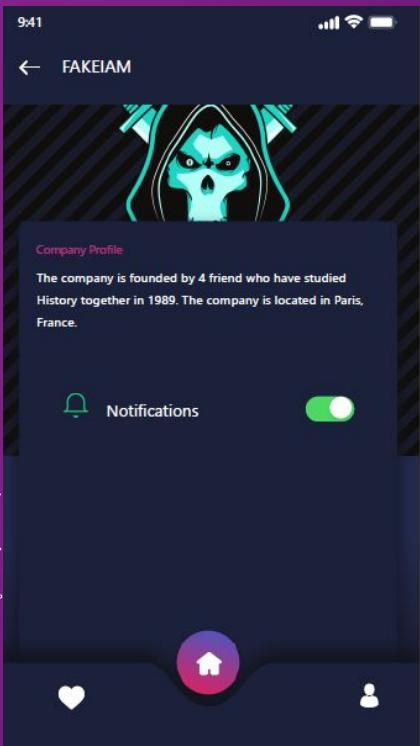
Example Article Screen



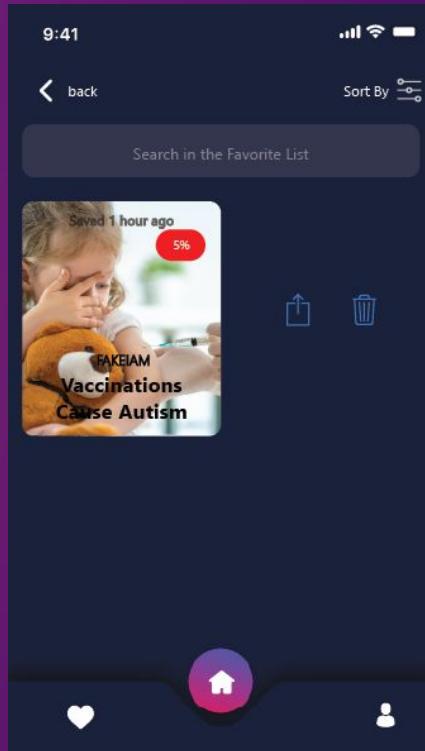
Acknowledgment Screen



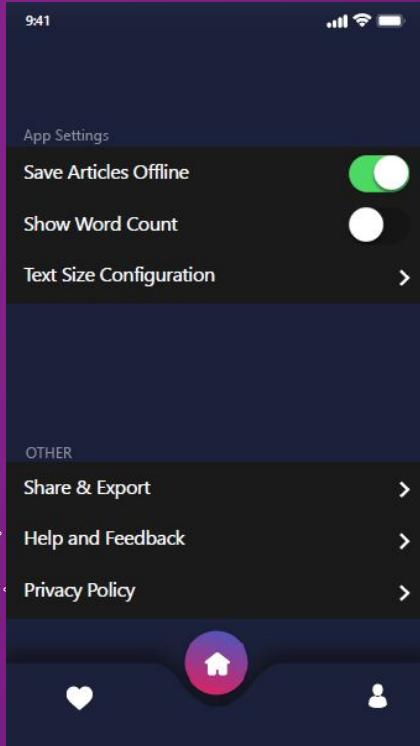
Publisher Information Screen



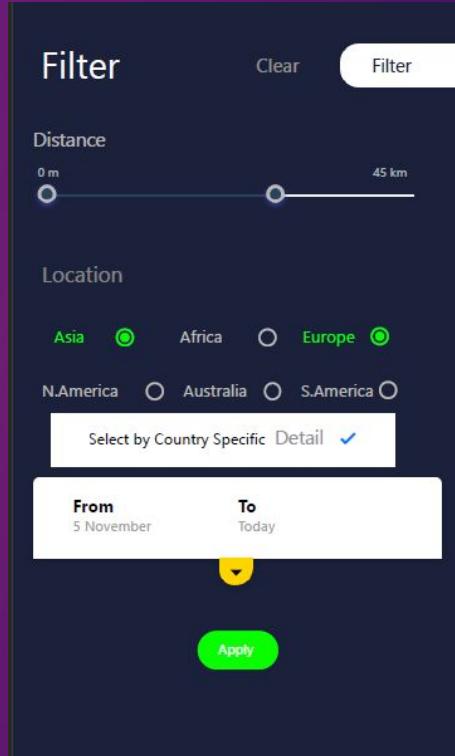
Favorite List Screen



Settings Screen



Filter Screen



Think aloud evaluation session

- We performed a think aloud evaluation session to improve Medium-Fi Prototype.
- 5 people connected through Google Meet tested the app in its main tasks and had to say aloud what they were doing and which were their thoughts.
- We explained them that we were testing our application and not them
- We collected user feedbacks



Changes after User Feedback

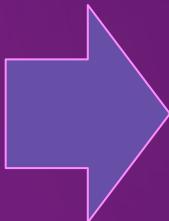
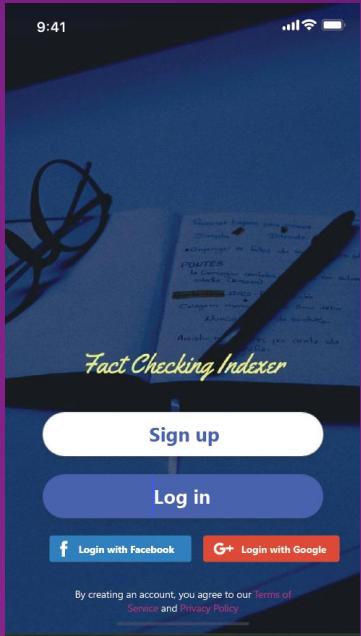
Heuristics used

We had 2 major usability problems in Low-Fi and after the feedback we focused directly on them. Hence we have done the following:

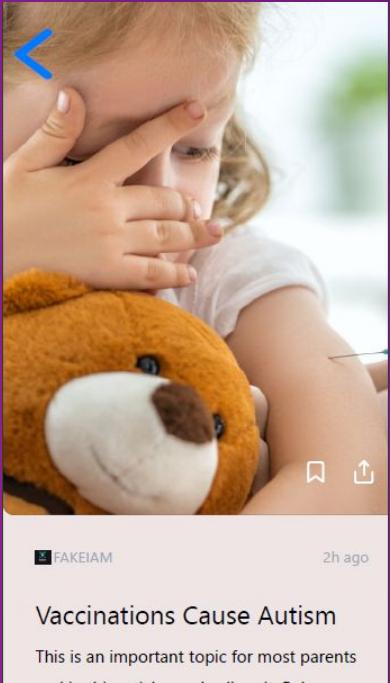
1. Change the login and signup button to be related with our color palette.
2. Change the back button in News Page.
3. Added a time bar which show how many min it takes to read article
4. Only warn people when it's score is so low



Change #1

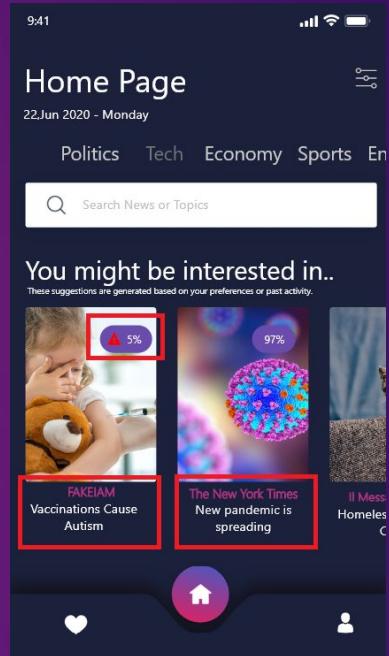
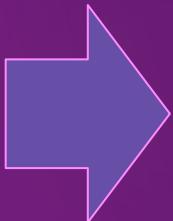
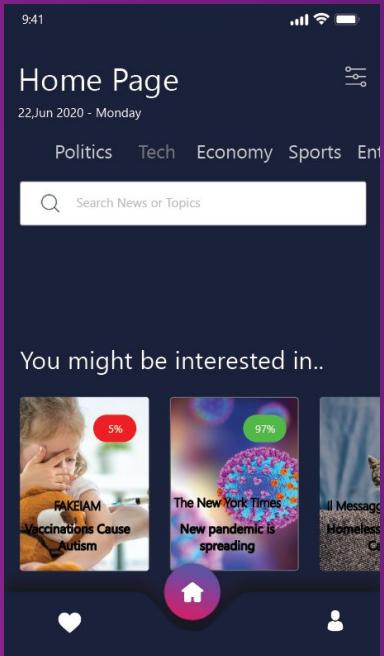


Change #2 and #3





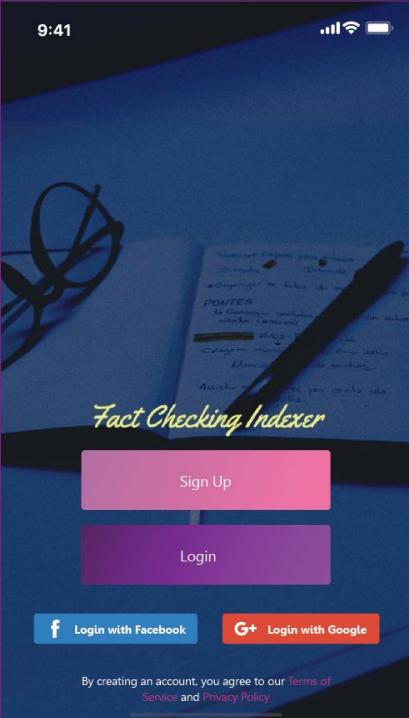
Change #4





07

High-Fi Prototype



9:41

Sign up

back

mail@studenti.uniroma1.it

Password

Forgot Password?

Login



Q W E R T Y U O I P
A S D F G H J K L
Z X C V B N M ↻
↑
123 ☺ ☺ space return

9:41

Sign up

back

Name

Email

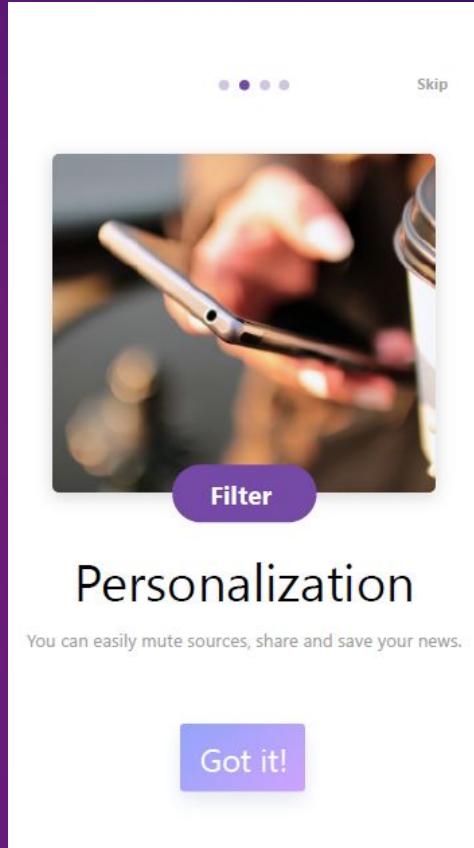
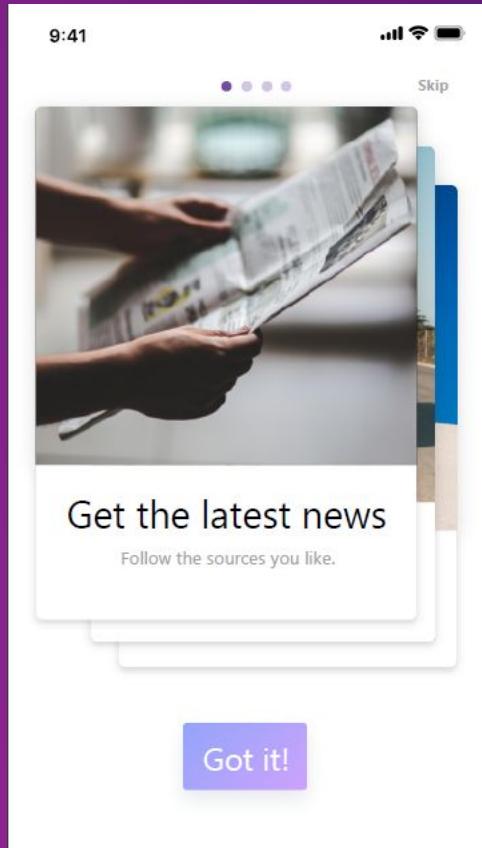
Password

Sign Up



Q W E R T Y U O I P
A S D F G H J K L
Z X C V B N M ↻
↑
123 ☺ ☺ space return





9:41



Skip



Say #NOFakeNews

Use our Index of Reliability
to understand how accurate a news is

Got it!

9:41



Almost Done

Main Home Page



All News



My Feed



Top

Favorites



Sports



Technology



Ente

Language

English ▾

Notifications

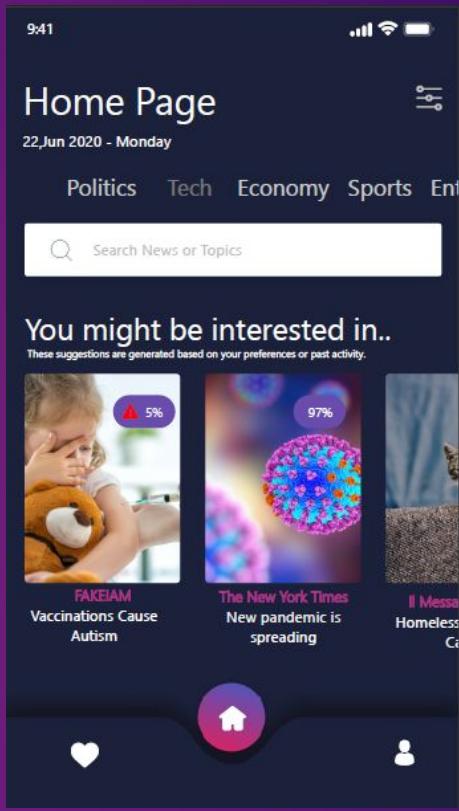
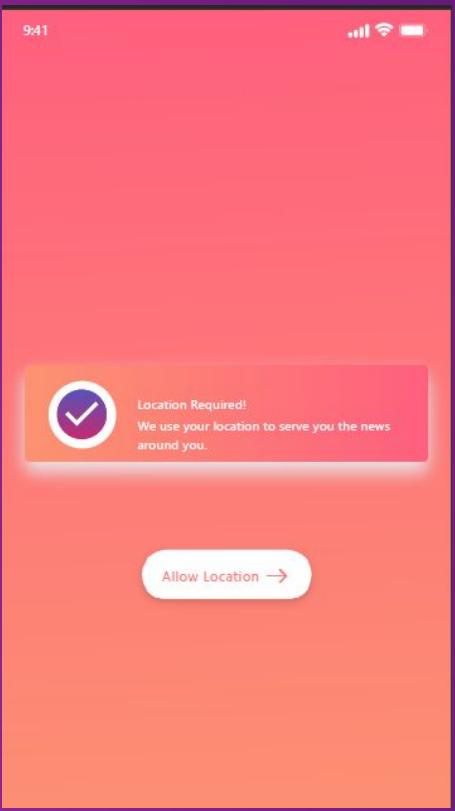


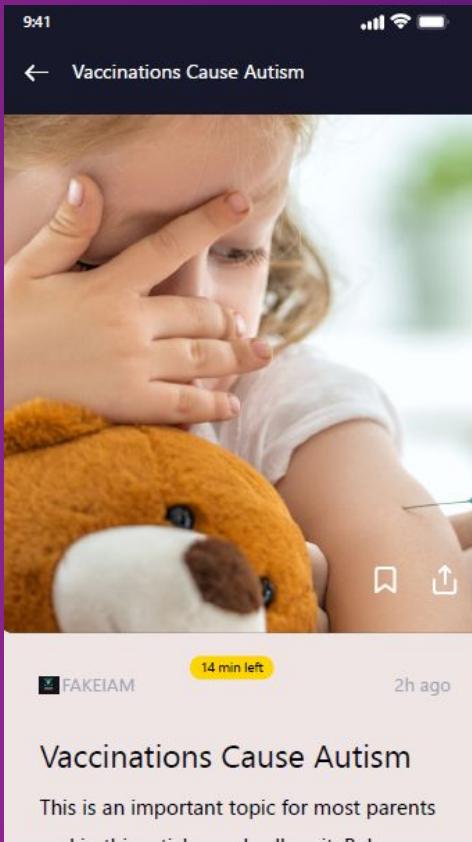
Darkmode



Let's Start



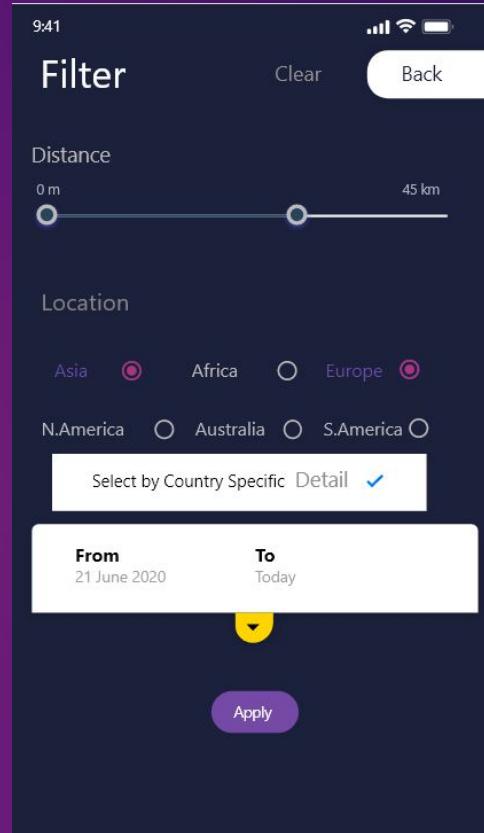
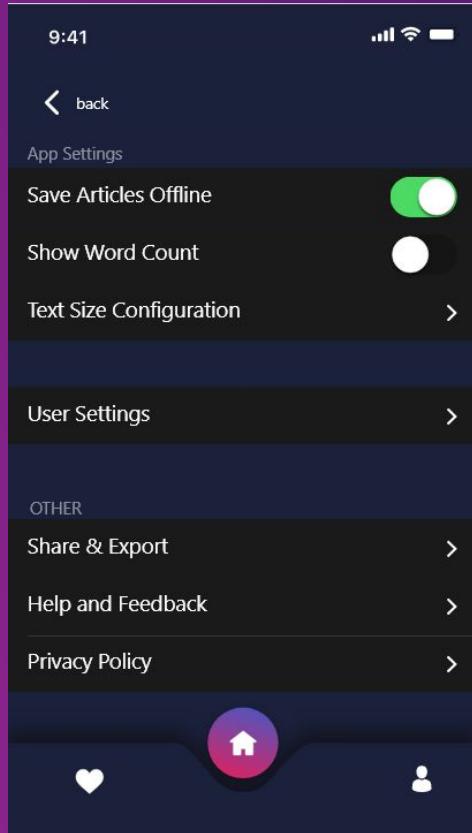




The image consists of two parts. On the right is a digital calculator with a digital display showing the number 8855635. To the left of the calculator is a yellow rectangular box containing the text "What this means?". Below the calculator and text is a dark blue section with a circular progress bar at the top. The progress bar is divided into four segments, each labeled with a range: "0-25" (purple), "25-50" (white), "50-75" (dark blue), and "75-100" (light blue). A vertical line connects the center of the progress bar to the middle of the "25-50" segment. Below this section, the text "Problematic Article" is displayed in a large, bold, pink font. A detailed explanatory paragraph follows: "This article is in this range. This means that this article contains words or statements that is controversial and not true. To understand how do we calculate this value please visit our website." At the bottom of this dark blue section are three white icons: a heart, a house, and a person.







08

Controlled Experiment

Controlled experiment

- During final stages of testing, we noticed that users wasted time while searching for favourite and sharing buttons.
- We developed two interfaces to test out our hypothesis.
- We used ANOVA One-Way analysis





Author: Tom's Hardware
Index of reliability: 90%

Google will invest \$4.5 billion in disruptive, popular Indian internet firm Jio Platforms, the company confirmed on Wednesday. The deal gives Google a 7.7% stake in the company, pending approval by Indian regulators. The two firms plan to develop an entry-level Android phone that could bring millions more Indian users online. Google CEO Sundar Pichai, announcing the deal on Wednesday, tweeted: "Everyone should have access to the internet. Proud to partner with @reliancejio to increase access for the hundreds of millions in India who do not own a smartphone with our 1st investment of \$4.5B from the #GoogleForIndia Digitization Fund."

Favorites Home Settings



Author: Tom's Hardware
Index of reliability: 90%

Google will invest \$4.5 billion in disruptive, popular Indian internet firm Jio Platforms, the company confirmed on Wednesday. The deal gives Google a 7.7% stake in the company, pending approval by Indian regulators. The two firms plan to develop an entry-level Android phone that could bring millions more Indian users online. Google CEO Sundar Pichai, announcing the deal on Wednesday, tweeted: "Everyone should have access to the internet. Proud to partner with @reliancejio to increase access for the hundreds of millions in India who do not own a smartphone with our 1st investment of \$4.5B from the #GoogleForIndia Digitization Fund."

Favorites Home Settings



ANOVA One-Way Analysis

- Participants: 20 people in a range of age 18-35 years old, split 10/10
- Variables:
 - Independent: the two interfaces
 - Dependent: time in seconds to execute the task
- Hypothesis:
 - Null: there are no differences between the interfaces
 - Our: users will be faster using the first interface
- Experiment
 - Task: open a news, add/remove it to favourites, share it
 - Assumptions: introduction finished, user logged in the home
- How to apply ANOVA? We used a chronometer to check how much time each user performs the same task



ANOVA Results

Anova: Single Factor

SUMMARY

Groups	Count	Sum	Average	Variance
Interface 1	10	130,85	13,085	9,430
Interface 2	10	178,34	17,834	12,025

Interface 1	Interface 2
8,93	20,12
11,07	24,72
13,12	15
18,22	14,64
12,45	13,1
17,03	18,98
13,9	16,91
15,43	17,62
10,15	16,23
10,55	21,02

ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	112,77	1	112,77	10,51	0,0045	4,41
Within Groups	193,09	18	10,73			
Total	305,85	19				

Tools Used

- Mock-up tool: Balsamiq.
- Low-Fi, Medium-Fi, High-Fi: Adobe XD and others
- Implementation: Ionic Framework with Angular backend
- Android app deploy: Android Studio



Demonstration



Thank You

Any Questions ?

