

CSIT226 Group Project

Part A



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Executive summary:

This report assesses the effects of natural disasters happening all around the world and is part A of the group assessment. Natural disasters like floods, bushfires, and earthquakes are making people's lives challenging in some developing countries. Some challenges are lack of fresh food, water, emergency aid, education, etc. which may put thousands of people in danger of death. Making a solution to help people who are affected and are in danger by considering their needs, and circumstances is the purpose of this report. Earthquake, and bushfires have been analyzed separately, and this report maintains the use cases, personas, reliability, performance, supportability, and features that the application is going to provide for the users to help people dealing with those natural disasters. In summary, this report provides facts that show the application is a valuable contribution to the sphere of the problem domain.

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1.Introduction

1.1. Background:

Natural disasters have negatively impacted people's lives in developing countries during the past few years. Many people have issues accessing the minimum standard of living. According to the Food and Agriculture Organization of the United Nations, about 2 billion people's lives have been destroyed by natural hazards between 2003 and 2013 (Food and Agriculture Organization of the United Nations 2015). Governments and charities aim to provide disaster relief like money, food, water, and medical care as fast as possible. In this report, an application has been designed to provide a platform for users who want to donate money to people across the world dealing with these issues. Various perspectives, requirements of users, application features, and existing problems caused have been mentioned in detail in the report. The aim of the designed application is to provide support for victims of natural disasters through providing a safe and secure method to help charities.

1.2. Definitions:

In this section, two main terms that have been used in the report are defined. Earthquakes are "shaking and vibrations in the ground caused by a sudden release of energy in the Earth's crust due to movements along a fault plane " (Rubin & Dahlberg 2017). Additionally, Bushfire is "a fire which burns through (often extensive) areas of natural vegetation, often causing loss of life and property" (Moore 2004).

1.3. Problem domain:

Earthquakes and bushfires are two main focused natural disasters that are chosen by the group as a self-defined problem domain. Natural disasters are hazardous events occurring outside of human control that often cause damage and loss of life. Yearly it is estimated that around 300 natural disasters occur around the globe, causing an

estimated 45,000 deaths and billions of dollars in damages (Ritchie & Roser 2014). Three of the most deadly of these are floods, bush fires and earthquakes.

2. Individual domain analysis:

2.1 Problem domain #1: Bush Fires

Bush fire is a type of fire under the wildfires which generally burns through wild vegetation like savannahs, scrubland, woodland or grasslands (National Geographic Kids 2022). Although these fires have been a natural, essential and complex part of the environment, they are unpredictable and difficult to control, leaving a major impact on lives, property and environment (National Geographic Kids 2022). These fires are particularly common in areas that experience hot, dry weather, like Australia, Greece, Africa and parts of the USA, like California (National Geographic Kids 2022).

These fires are caused by numerous different causes ranging from lightning strikes in dry grass or trees, and many of which accrue naturally. Sadly, sometimes these fires are started deliberately by someone. Climate change can play a role in wildfires as well. Though not directly responsible for starting said fires, the intensity and duration of droughts caused by climate change, dry out the vegetation, thus intensifying the severity of the wildfires (National Geographic Kids 2022).

Though bushfires are a natural part of nature, they pose a significant threat to communities if they grow out of control (National Geographic Kids 2022). Windy weather can play a large role in the danger as it can spread the flames faster than it otherwise would, and possibly even change the direction of the blaze at a moment's notice (National Geographic Kids 2022). When reaching a community the flames can cause significant damage to buildings and combined with the smoke it emits, any animal or human life is put at significant risk (National Geographic Kids 2022).

Thankfully, there are many people who are very committed to learning how to better prevent and control wildfires, including firefighters, government officials, and men and

women in general. Thankfully by having a planned escape route and having an emergency bag, you can help keep your family safe (National Geographic Kids 2022).

2.2 Problem domain #2: Earthquakes

When it comes to disasters, few can be as devastating and life shattering as earthquakes. Often occurring with very little warning, earthquakes can easily leave entire cities destroyed and hundreds if not thousands of lives lost or irreparably changed. Unfortunately, this is not where it ends for many victims in coastal areas as these earthquakes can quite often trigger tsunamis, further spreading and amplifying the widespread destruction and suffering (Direct Relief 2022) (UNICEF 2022). These consequences can have profound impacts not only on the lives of the victims, but on both the economy and the infrastructure of the regions affected. This additional damage especially in developing nations can cause widespread suffering through multiple generations as many simply do not have the resources to recover quickly (ChildFund 2022).

Earthquakes are widely considered to be the deadliest natural disaster on the planet, causing an estimate of 10,000 – 20,000 deaths annually. Between the years of 1998-2017 earthquakes have been responsible for an estimated 750,000 deaths worldwide, being responsible for more than half of all deaths from natural disasters during this time period. On top of this staggering number an additional 125 million or more people were affected in some way ranging from injuries to homelessness and displacement (World Health Organization 2022). Developing countries are unfortunately the ones that suffer the most from these disasters while also being the nations that can recover the least, with two thirds of the deaths occurring from within these nations (Cheema, A.R 2019).

With the severity of earthquakes globally, especially in developing nations, several charities and efforts have been created to help with earthquake relief. One of these is Direct Relief_, who since 2004 have provided and continue to provide assistance and aid to dozens of countries who have suffered and attempted to recover from large

destructive earthquakes. They help provide medical assistance and doctors, as well as supplies and manpower as soon as possible for those affected (Direct Relief 2022). Yet another example is the Red Cross_who provide an extremely large range of relief efforts including search and rescue, medical care, supplying food and water, distributing relief supplies, emergency shelter building, and rebuilding communities (The American National Red Cross 2022). Another vital service they provide is disaster preparedness. As stated above, developing nations are extremely more likely to be in serious bodily risk during an earthquake due to a lack of infrastructure development and buildings built to withstand earthquakes. It is therefore extremely important that people know what to do if caught in one of these disasters.

While charities and donations are extremely important for those affected by earthquakes, it can be unfortunately hard for everyday people to find the resources and charities that they would like to donate to. Compounding this issue is the fact that for several charities a large portion of donations never make it to the donors intended purpose, meaning possible donors need to do additional research to find charities they like. All of this has started to have an impact on the number of individuals donating, with a study by the ACPNS revealing that only 26.7% of the Australian population donated in 2019, the lowest in 4 decades (Pro Bono Australia 2021). This is an extremely worrying trend as many people rely on these charities and in turn these charities rely on donations. This is where our app comes into play.

The application will be developed to directly impact disaster areas dealing from bushfires and earthquakes by providing an easy, safe and quick solution for users to find and donate towards charities providing support at the disaster sites. The app will be constantly up to date with the latest disasters and will present them to the users so that they may choose where they want their money to go. Once the user decides where they wish to donate, the donation process will be extremely simple, allowing the user to simply enter the desired amount and press donate. The ease of use and safety of the application will further help charities by bolstering the amount of individual donors the

charities will receive, which will further help people in disaster areas through increased charity activity.

Features

- Contain a collection of safe and reputable charities that a user can donate to
- Allows users to choose individual charities
- Allow users to select the type of disaster they wish to donate towards
- Provide safe and secure payment options
- Show users any current disasters that they can help

Usability

- Minimalist design
- Flat design
- The app will be consistent throughout usage, e.g. the app will work the same whether you search earthquakes or floods
- The app will have a help section where u can email us for sensitive problems, such as being over charged when donating or problems with security
- General help and FAQ section
- How to section

Reliability

- Password recovery and reset
- The charities information will always be up to date
- Latest disasters will be accurate

Performance

- The app will be fast and very responsive
- The app will use very limited resources on the phone
- The app will be available on all app stores
- Password recovery will be automated as fast

Supportability

- The app will be supported on majority of devices
- The app will be easily maintainable for developers

App features: area of donation, profile, login, overall high level description

3. Current Systems Evaluation:

3.1 ShareTheMeal

Share the meal is designed for users to donate money to different people who are flood victims, do not have access to enough food, or need emergency aid in various countries. This application provides some statistics, reports, and pictures to show what people in crises need. For example, there is a record of countries like Pakistan, Yeman, and Sri Lanka that do not have access to food and donating money to these places may save thousands of peoples lives. The Share the Meal made the process of the donation clear and easy; the users are able to choose which country they want to donate money to and this application will make sure that the most vulnerable people receive the help they need. One of the strengths of this application are the features which are easy to locate, and the users do not have to spend lots of time figuring out what to do. Another positive is the app displays statistics of their goals and achievements in a non obtrusive fashion on the home page, deliberately not interfering with easy donation access for the user while still being easily available to provide users with a larger sense of purpose.

3.2 Self Recovery

Self-recovery is an application designed by the Queensland government. The self-recovery app was released by the government to provide all the vital information about the ongoing and recent emergencies and disasters. The app acts as a platform for people around the world to help the ones in crises. The app also provides the users with the ability to review the damage from the disaster along with the contributions done for the emergency or the disaster.

The app also has guides which provide instructions on how to tackle the situation or whom to contact in case they need any assistance. Along with these, it also features vital tips for preparing for disasters and cleaning up after them, including:

- insurance information
- personal and family support
- business support
- how to volunteer
- how to donate goods and services
- how to make a financial contribution.

4. Stakeholders analysis:

Depending on the users there is 3 major stakeholders in our project, which are,
Primary users: who are constantly using our app. For example, donators, volunteers, app maintenance team etc.

Secondary users: who are using the app occasionally. For instance, Owner of the app , Owner of the charity.

Non users, who are not using the apps directly, such as crowd-funder, organizations.

5. Personas:



Name:
Nina

Job Title:
Owner of our application

Age:
30-40 years

Education:
Master of Business

Industry:
Business

Preferred way of communication:

Email
Social media
Face-to-face
Phone

Job Responsibilities:
Marketing the application

Their Job is measured by:
The popularity of application

Goals or Objectives:
Help people

Biggest Challenges:
Promoting the application



Name:
Peter

Job Title:
Owner of the charity

Age:
25-34 years

Education:
Professional Degree

Industry:
Charity

Preferred way of communication:

Email
Social media
Face-to-face
Phone

Job Responsibilities:
Distribution of the collected donations

Their Job is measured by:
Donations

Goals or Objectives:
Gain money for the charity

Biggest Challenges:
Distribute the earning equally



Name: Jane (donator) Job Title: Nurse Age: 35-44 years Education: Bachelor of Nursing Industry: Health Care	Preferred way of communication: Email Social media Face-to-face Phone
	Job Responsibilities: Helping patients, and doctors Their Job is measured by: Doctors
	Goals or Objectives: Helping people Biggest Challenges: Finding safest way to donate money

6.Scenarios:

6.1 Scenario for owner of our application:

😞 Nina is a software engineer. She works for a company in the United States, and she decides to go to her hometown after three years. When she got there, she was shocked to see that her town was destroyed by a massive tornado.

😞 Many people were injured, homeless, and did not have access to food. She realized that this massive disaster needs a huge amount of donation to overcome. She knew that if there was a platform for people all around the world to donate money, there are many people willing to help.

😞 So, she wondered, it would be great not only for people from her workplace but also people from all around the world to have an application to send some money to the people in trouble.

😊 She ended up with the idea of creating an application. She called her co-worker to explain what is in her idea and they decided to arrange the first steps to finish creating this application themselves.

6.2 Scenario for owner of the charity:

😞 Peter as an owner of a charity is looking for more people to donate money to his charity. So, he decided to share his concern with his co-workers in the meeting.

😞 While they were in the meeting, he listened to people's ideas, and most of his colleagues suggested becoming a partner with a donation app to get more people donating money to the charity.

😞 After having a search, Peter finds out Universal Donation (our application), is a safe and a well established platform to be partnered with.

😊 He contacts the owner of the Universal Donation application and they arrange a meeting to discuss the details later.

😊 They end up becoming partners.

6.3 Scenario for Donator:

😞 Jane is a nurse and while she was reading the newspaper, she realized there were many kids in "Yemen" that do not have access to clean water and food. She tries to search for a way to donate money to those kids across the world.

😬 After having a quick search the donation app called “Universal Donation (our application)” becomes the first and safest app to donate money.

😬 She downloads the application and has a look through all the possible places that she can donate money to.

😊 By having a quick search she finds the country she wants to donate money to and starts the process of money donation.

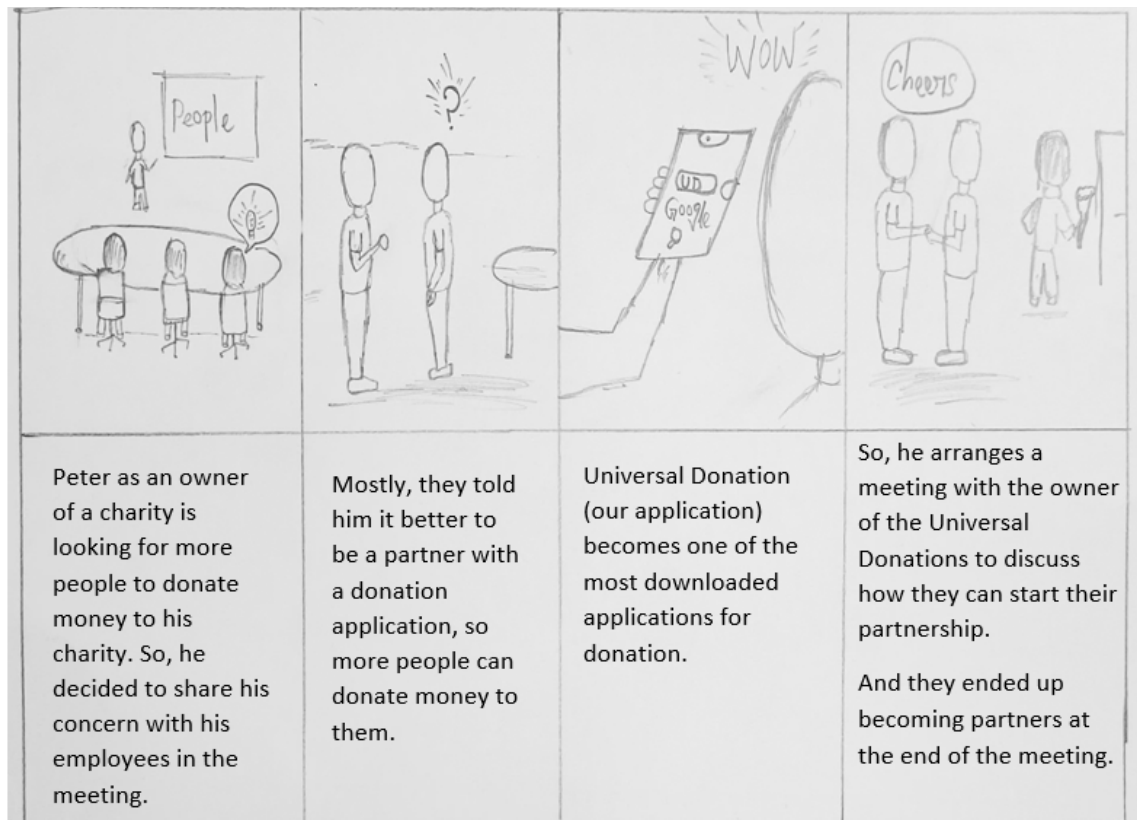
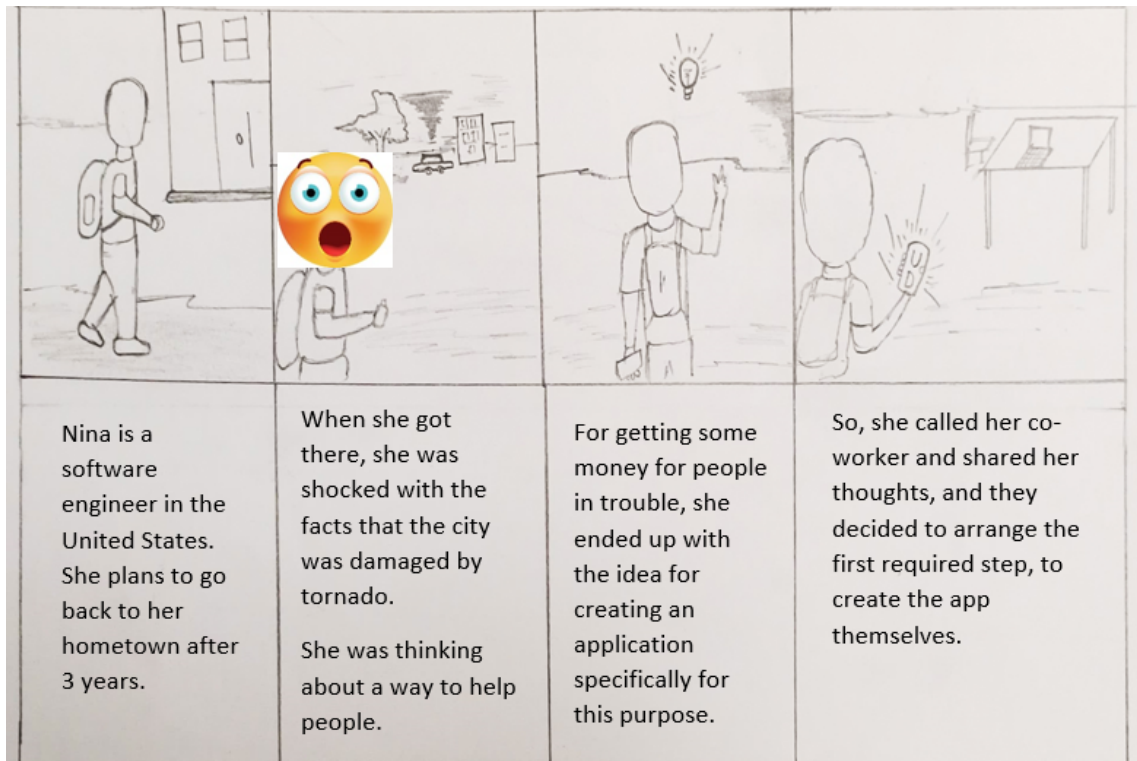
😊 After completing the process of donating she sent the link of the application to her friends to encourage them to help these kids as well.

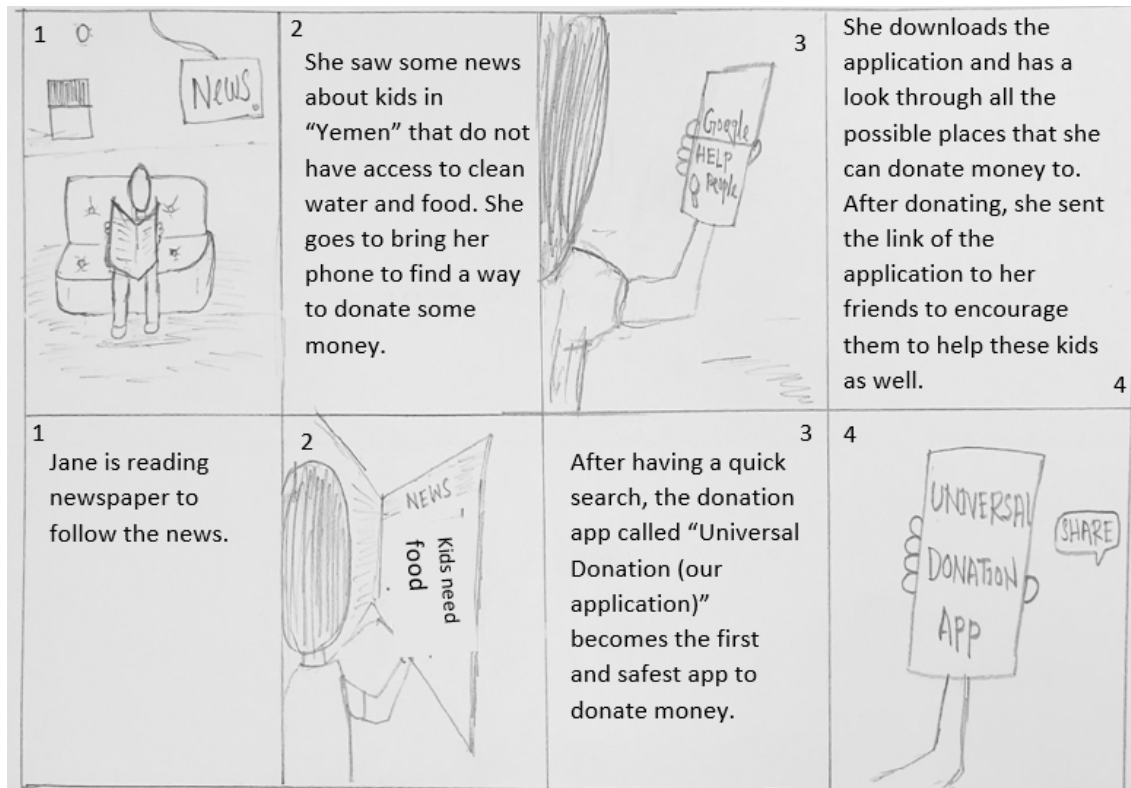
7. Initial Requirements:

The core aspects of our application contains a collection of safe and reputable charities that provide safe and secure payment options for the donators.

To show users any current disasters that they can help, we provide easy, user friendly interfaces. For that at the very beginning the donators only need an email id and password to sign up. After that they can easily log in and donate money in there preferred area with just one click.

8. StoryBoard:





9. Conclusion:

In conclusion, the following report provided a brief explanation about the self defined problem domain, Natural disasters, which was categorized in two subtopics - earthquakes and bushfires.

Due to a large market, multiple applications were identified that have features similar to the designed application for donators, and the evaluations were the current applications involve a lot of steps and it becomes a hectic process for the user to make the donation and many of the users give up looking at the lengthy process, and to resolve this, our app does the donation in 3-4 simple steps.

The different persona's chosen are the donators, owner of the charity, and the owner of the application. For each of the persona's, scenarios were made to explain how each of them would interact with the application. Storyboards were used to get a better understanding of the step by step process of how different persona's use the interface.

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