

# Sausages, Antennagate, and Brexit

## An introduction to building accessible apps

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April 2019

# Caveat/health warning

- I am a developer, not a designer
- I am not disabled
- If you know better than me, please heckle nicely
- We'll mainly be talking about web sites and mobile apps but try to be platform-agnostic

# Accessibility



*For the related design concept, see [Universal design](#). For the logical notion, see [Accessibility relation](#). For accessibility on the internet, see [Web accessibility](#).*

*For Wikipedia's accessibility policy, see [Wikipedia:Accessibility](#).*

**Accessibility** refers to the design of products, devices, services, or environments for people who experience disabilities.<sup>[1]</sup> The concept of accessible design and practice of accessible development ensures both "direct access" (i.e. unassisted) and "indirect access" meaning compatibility with a person's [assistive technology](#) (for example, computer [screen readers](#)).

# What is a disabled person?



## 6 Disability

- (1) A person (P) has a disability if—
  - (a) P has a physical or mental impairment, and
  - (b) the impairment has a substantial and long-term adverse effect on P's ability to carry out normal day-to-day activities.
- (2) A reference to a disabled person is a reference to a person who has a disability.
- (3) In relation to the protected characteristic of disability—
  - (a) a reference to a person who has a particular protected characteristic is a reference to a person who has a particular disability;

*Equality Act 2010 (c. 15)*  
*Part 2 – Equality: key concepts*  
*Chapter 1 – Protected characteristics*

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5

- (b) a reference to persons who share a protected characteristic is a reference to persons who have the same disability.
- (4) This Act (except Part 12 and section 190) applies in relation to a person who has had a disability as it applies in relation to a person who has the disability; accordingly (except in that Part and that section)—
  - (a) a reference (however expressed) to a person who has a disability includes a reference to a person who has had the disability, and
  - (b) a reference (however expressed) to a person who does not have a disability includes a reference to a person who has not had the disability.
- (5) A Minister of the Crown may issue guidance about matters to be taken into account in deciding any question for the purposes of subsection (1).
- (6) Schedule 1 (disability: supplementary provision) has effect.

Text Crown copyright

# What makes someone disabled?



























# the medical model v. the social model



# Medical model

“She is disabled because she can’t use her legs as a result of her MS.

We should invest in healthcare and technology that cures the passenger’s MS, and restores her ability to walk and climb steps.”





# Social model

“She is disabled because the tram door isn’t level with the platform edge, and there’s no way for her to get her wheelchair into the tram.

We should add level boarding ramps and build trams with lower floors to allow level boarding.”





## medical model

vs

## social model

- Disability comes from people's differences
- Different = broken
- 'Fix' people

- Disability comes from society not being organised to accommodate people's differences
- Fix the way society is organised

## **vs social model**

- Disability comes from society not being organised to accommodate people's differences
- Fix the way society is organised

# social model

- Disability comes from society not being organised to accommodate people's differences
- Fix the way society is organised

# social model

- Disability comes from society not being organised to accommodate people's differences

- Fix the way society is organised



**The medical model looks at what is 'wrong' with the person, not what the person needs. It creates low expectations and leads to people losing independence, choice and control in their own lives.**

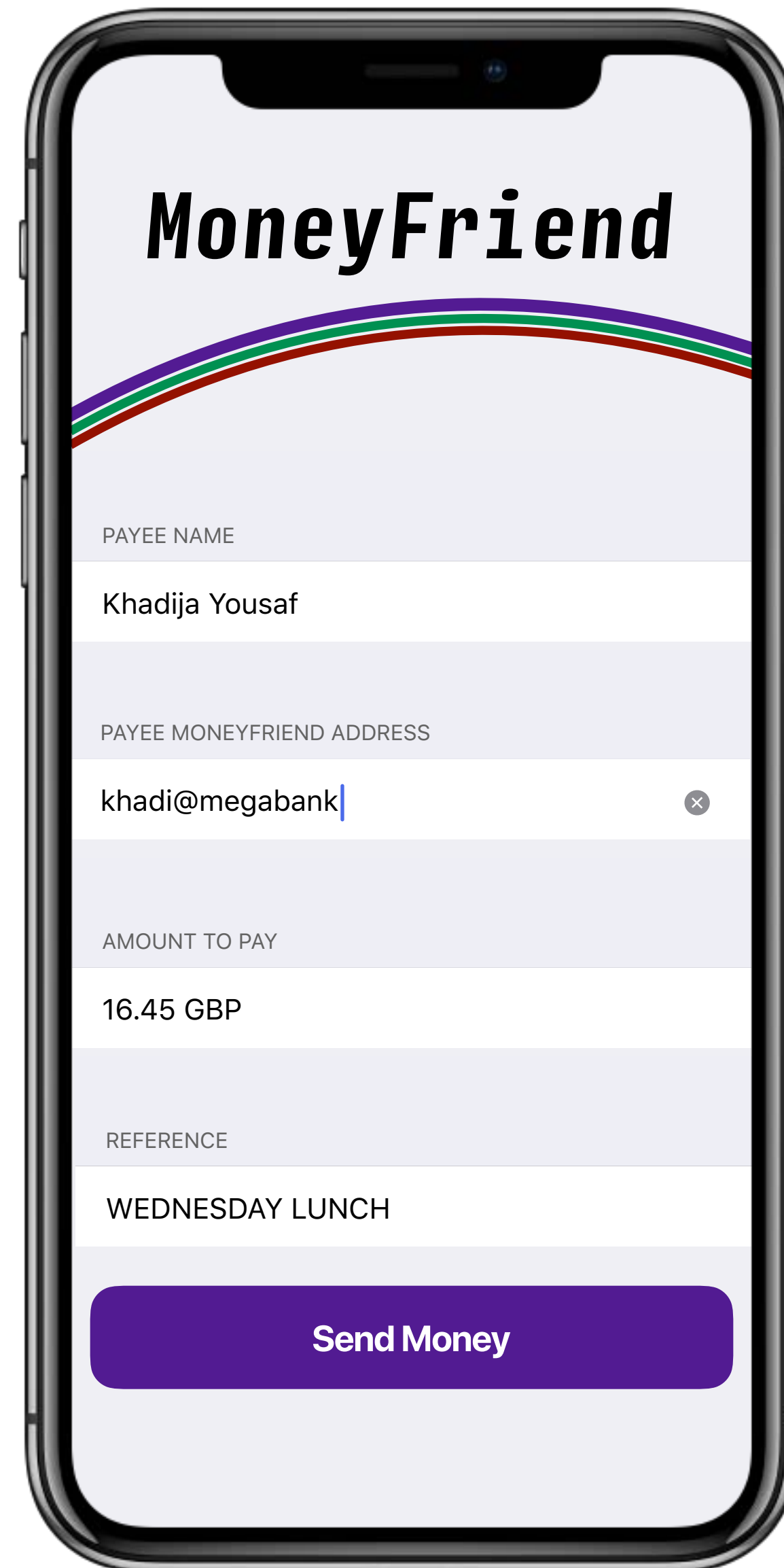
–Scope: The social model of disability

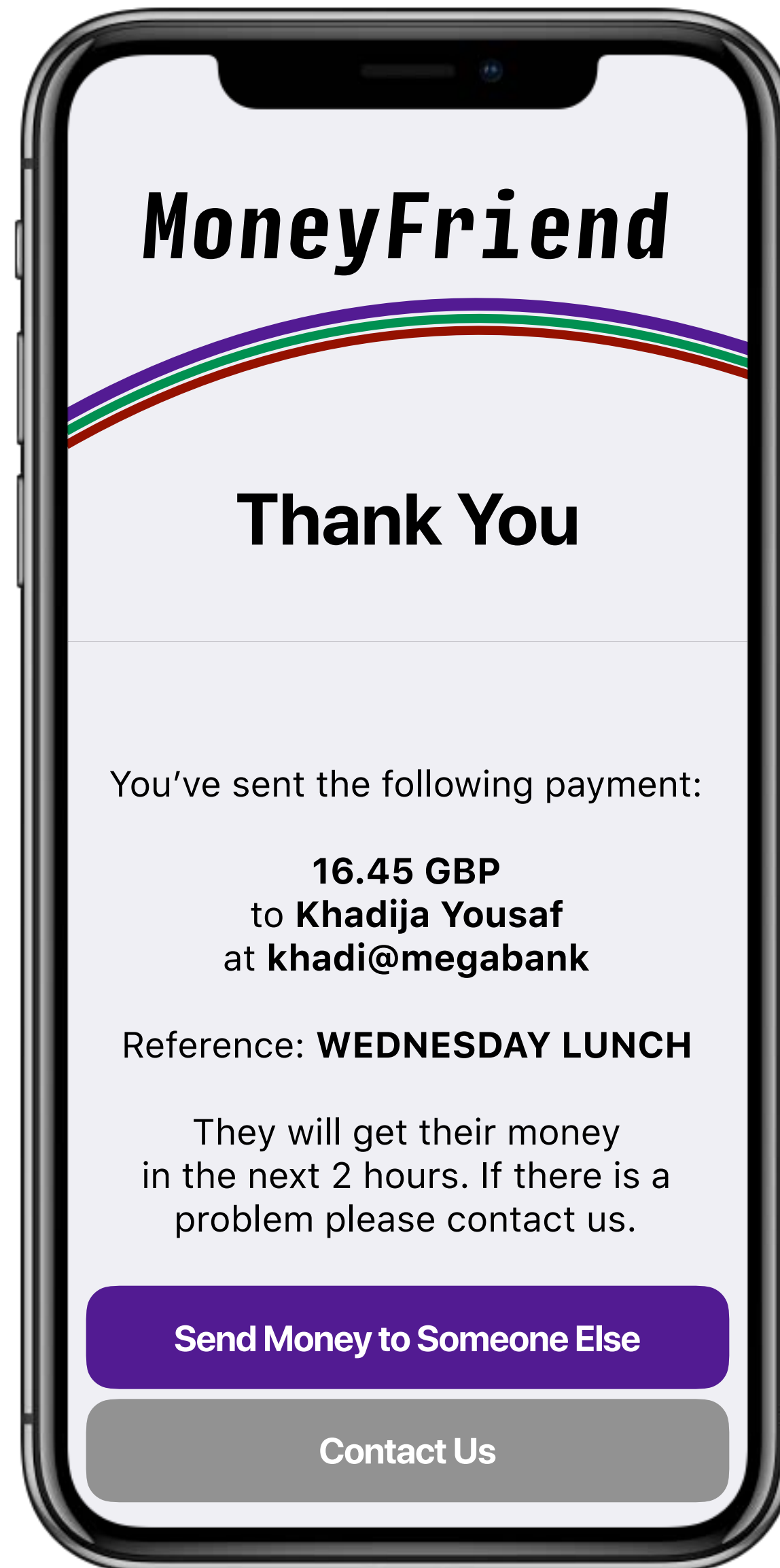
<http://www.scope.org.uk/about-us/our-brand/social-model-of-disability>

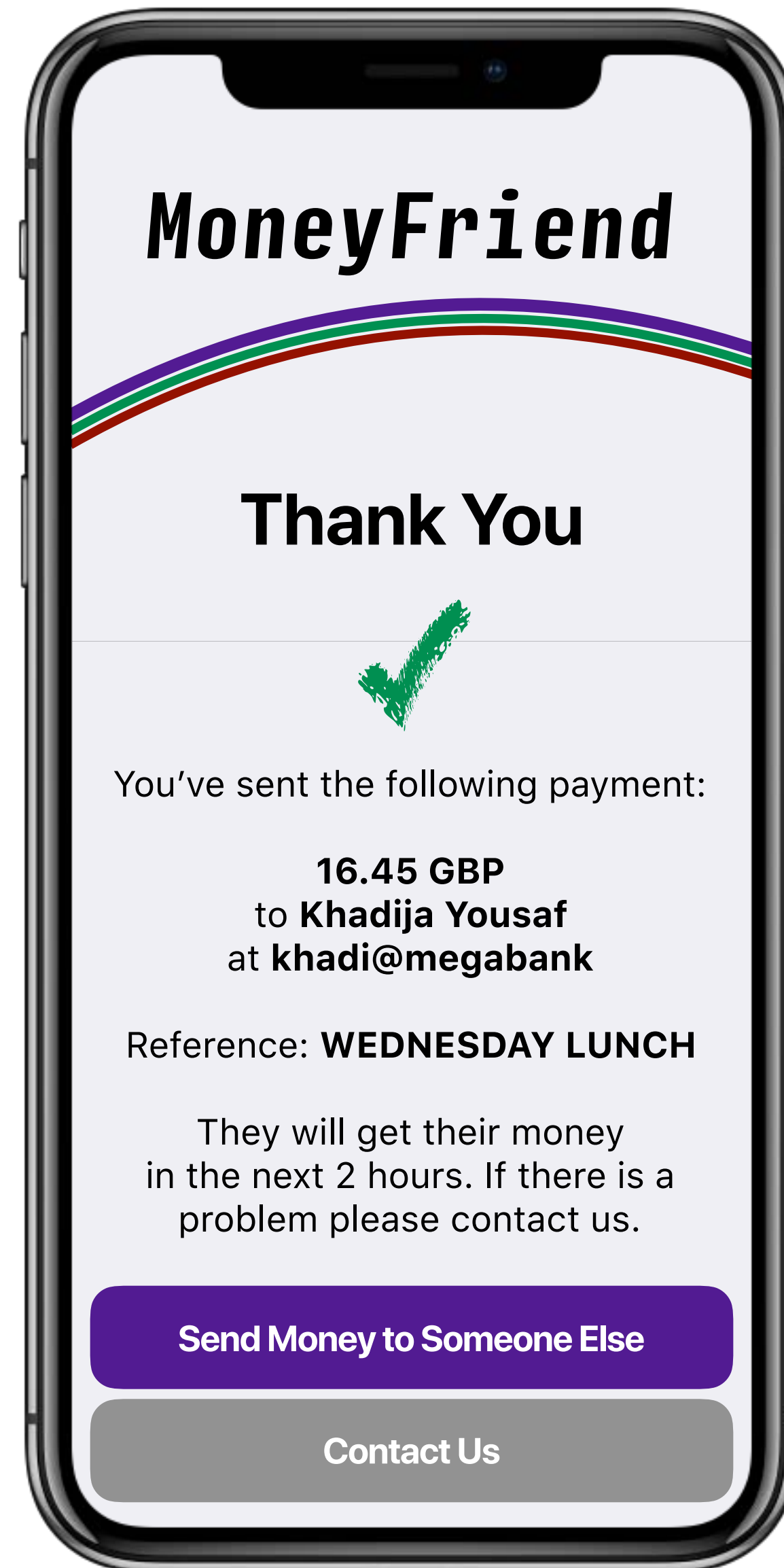
# social model

- Disability comes from society not being organised to accommodate people's differences

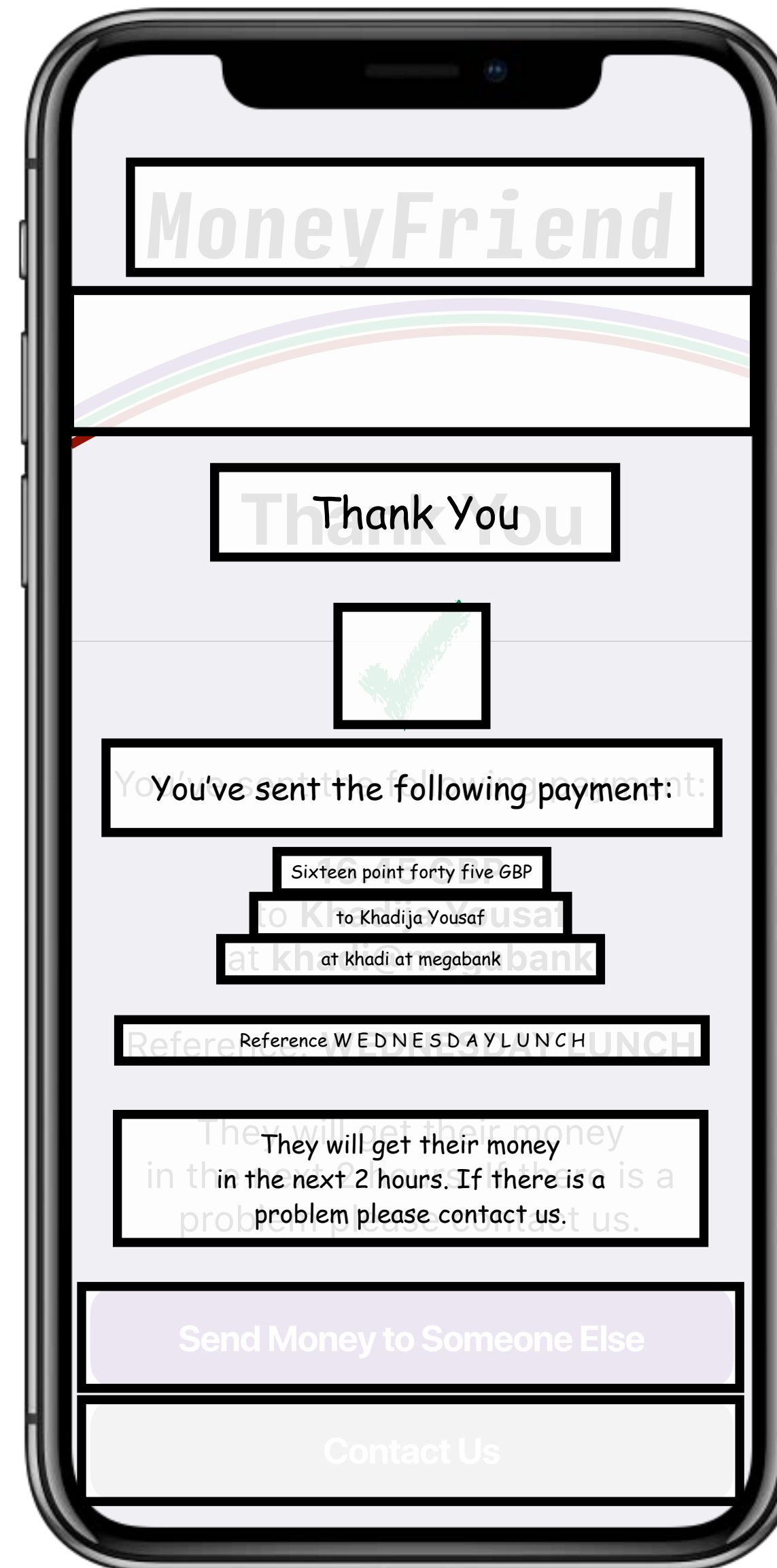
- Fix the way society is organised

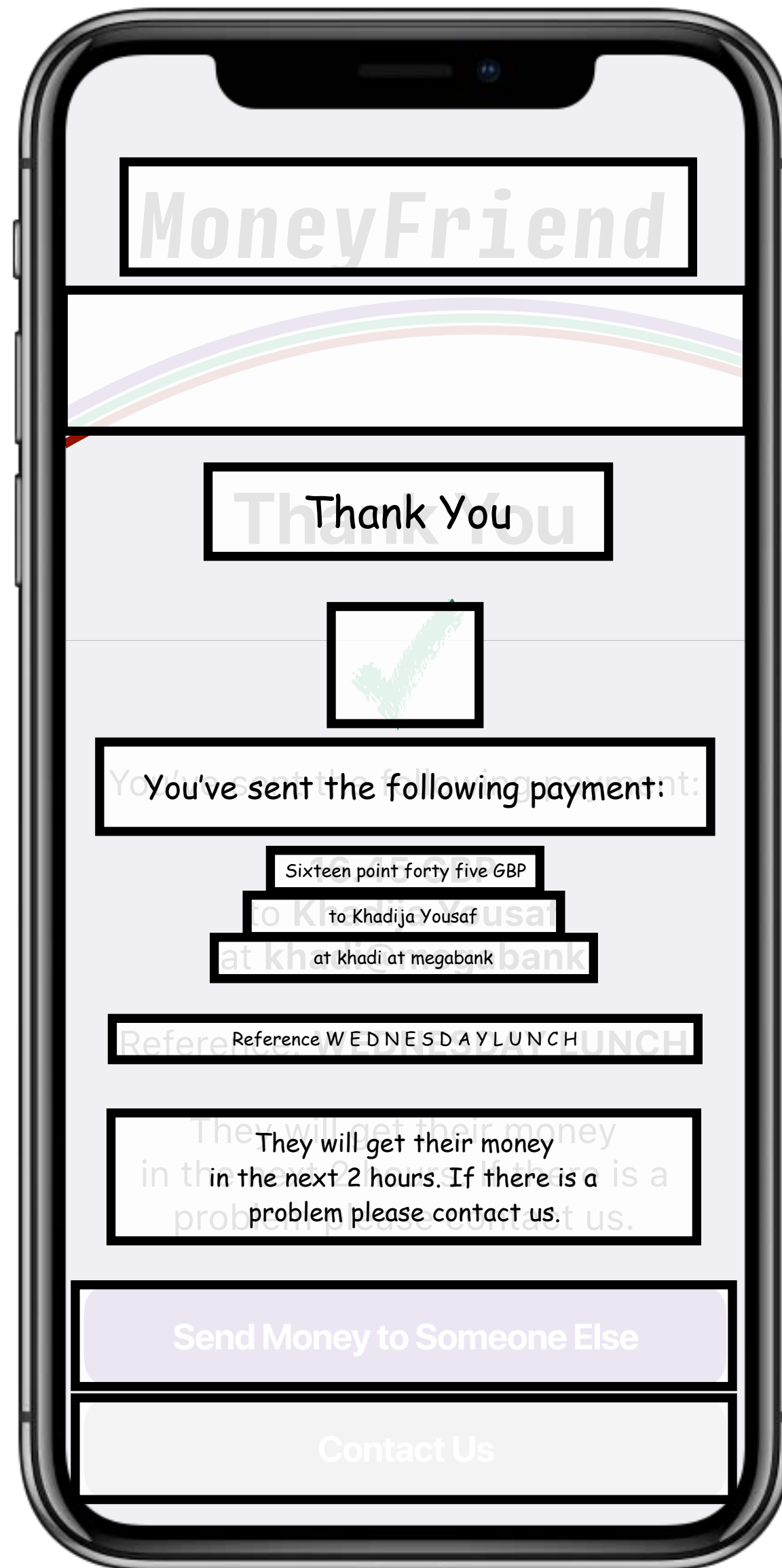


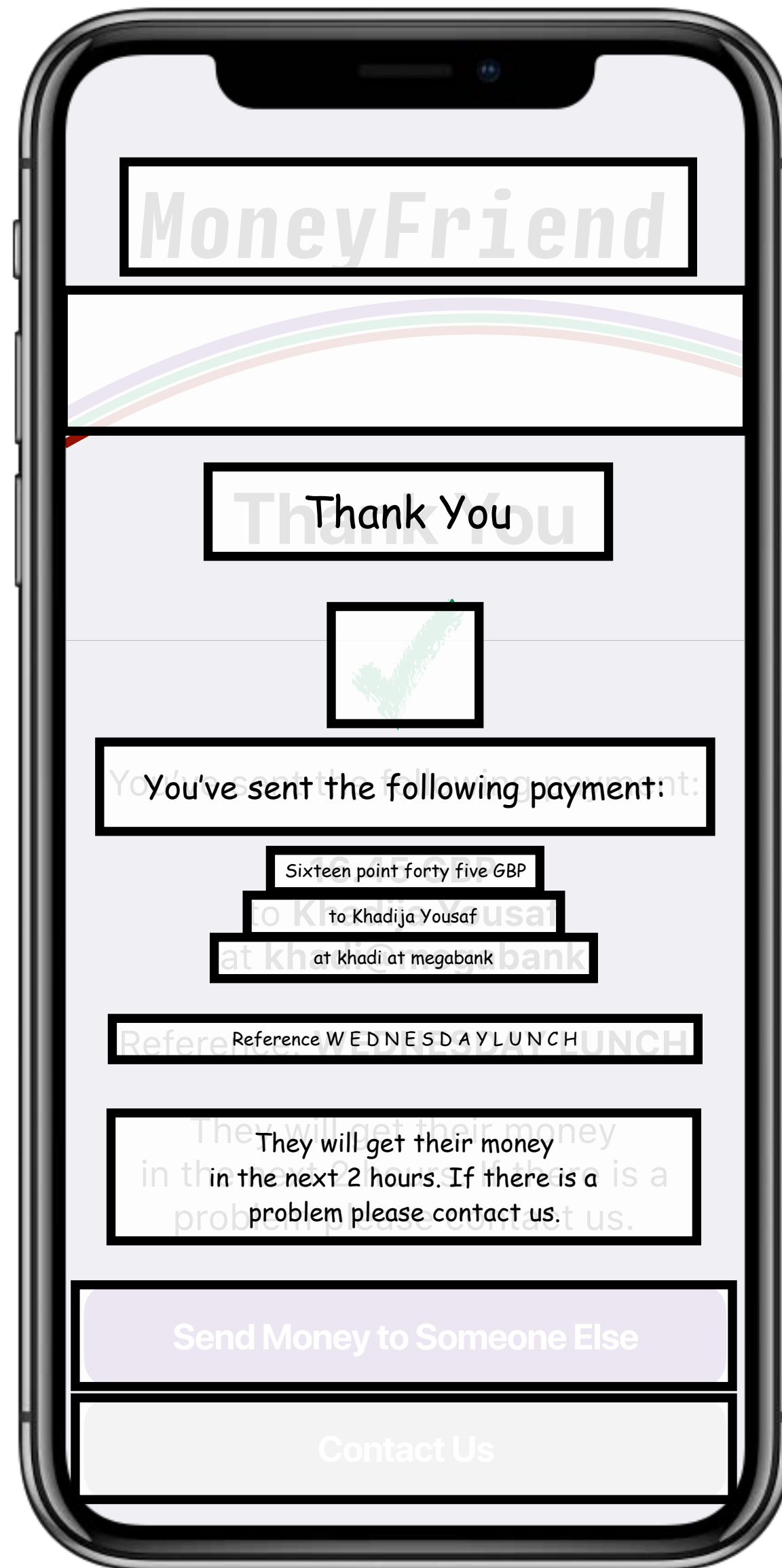












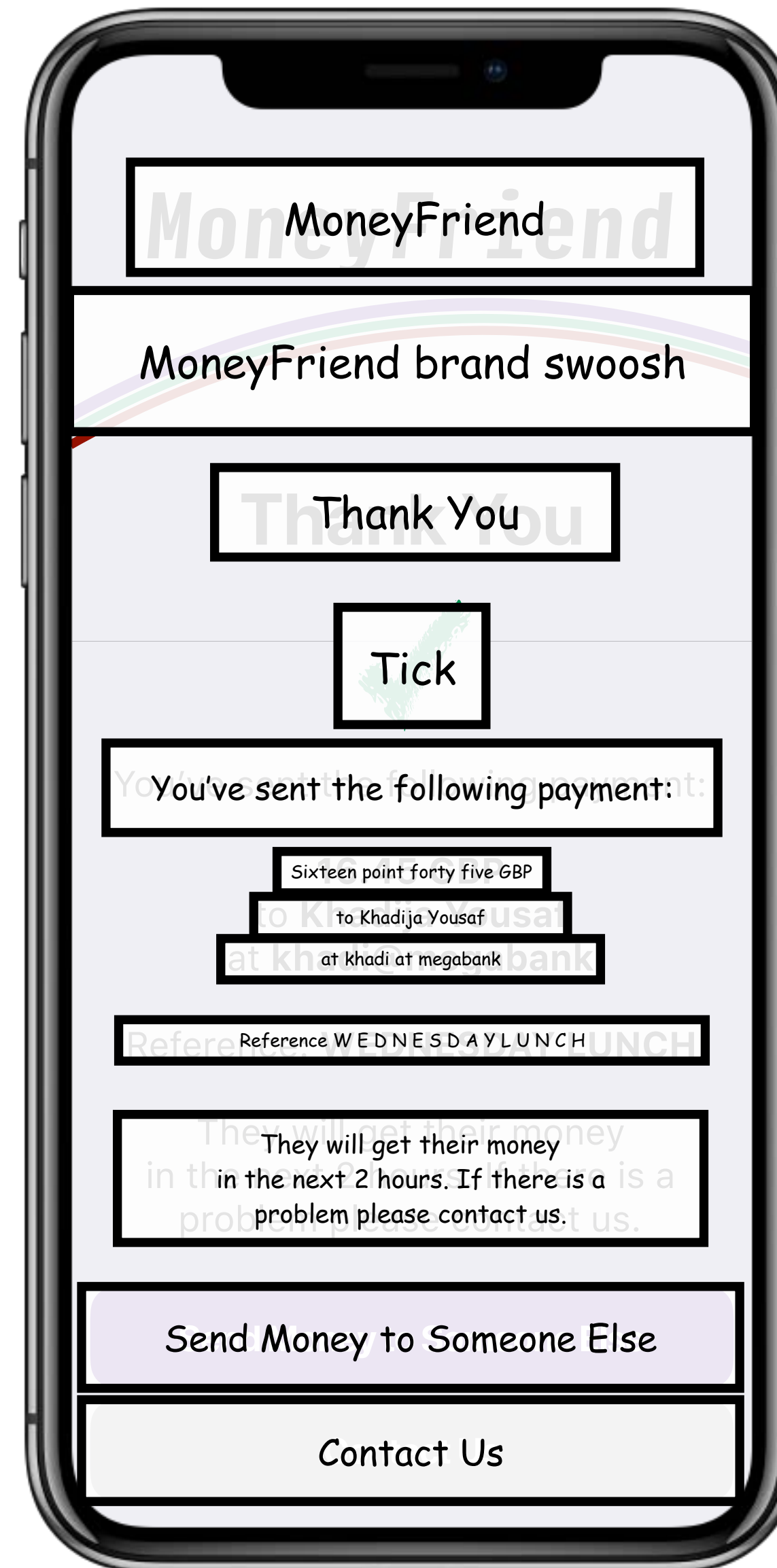
Swift

```
contactButton  
    .accessibilityLabel  
    = "Contact Us"
```

HTML

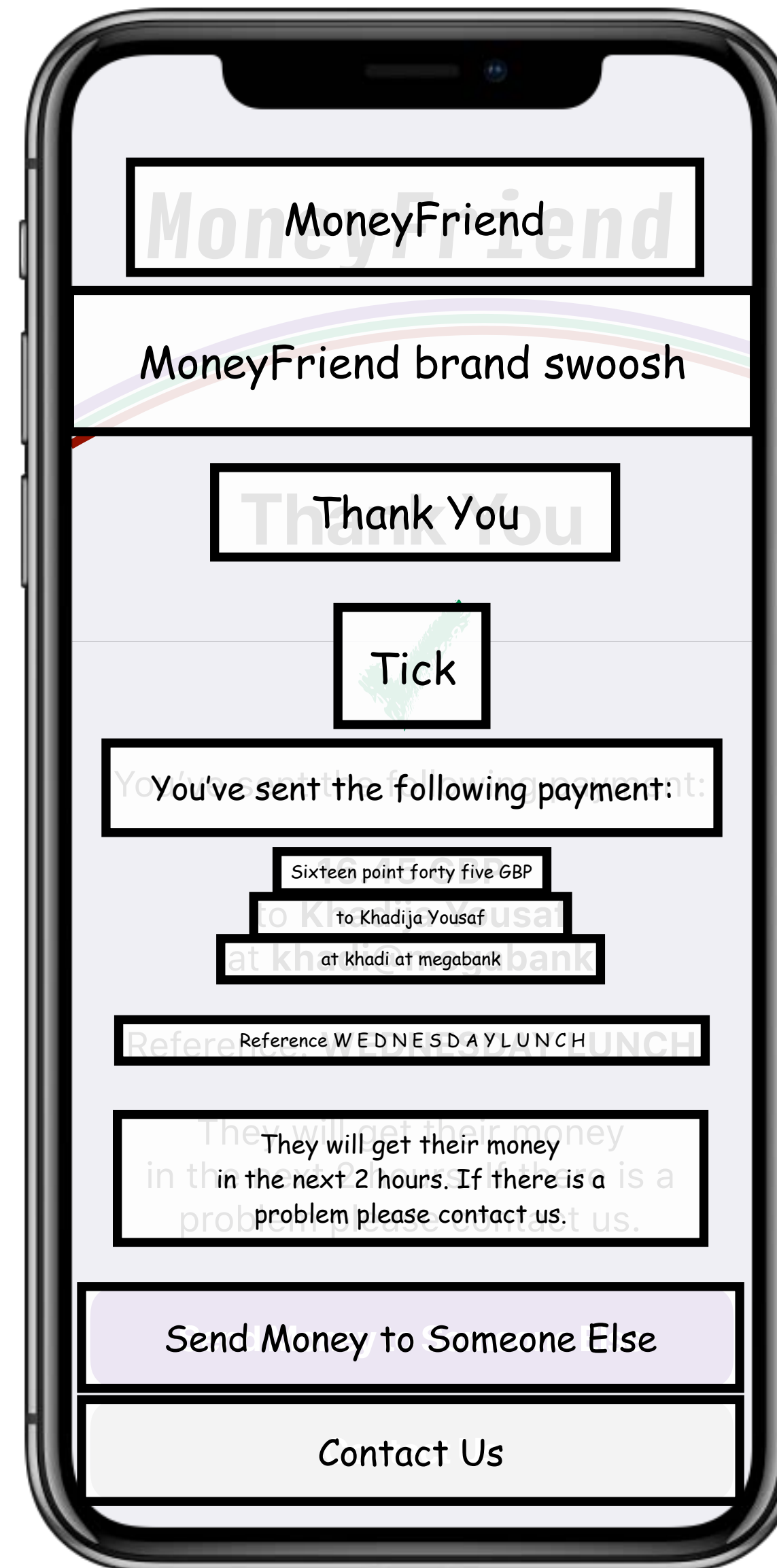
```
<button  
    aria-label=  
        "Contact Us">
```

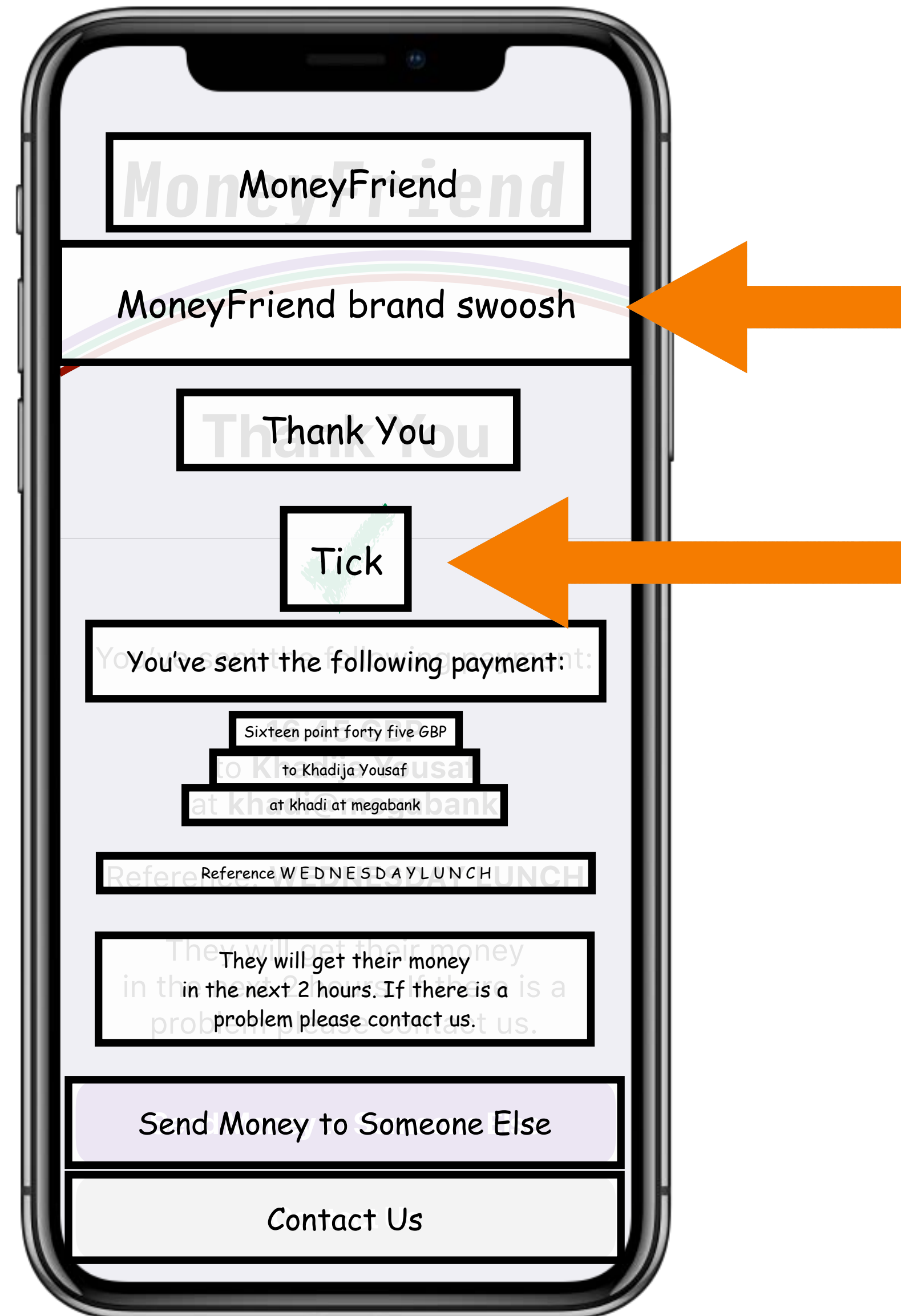
**Important:** If you're using standard elements, you usually don't need this

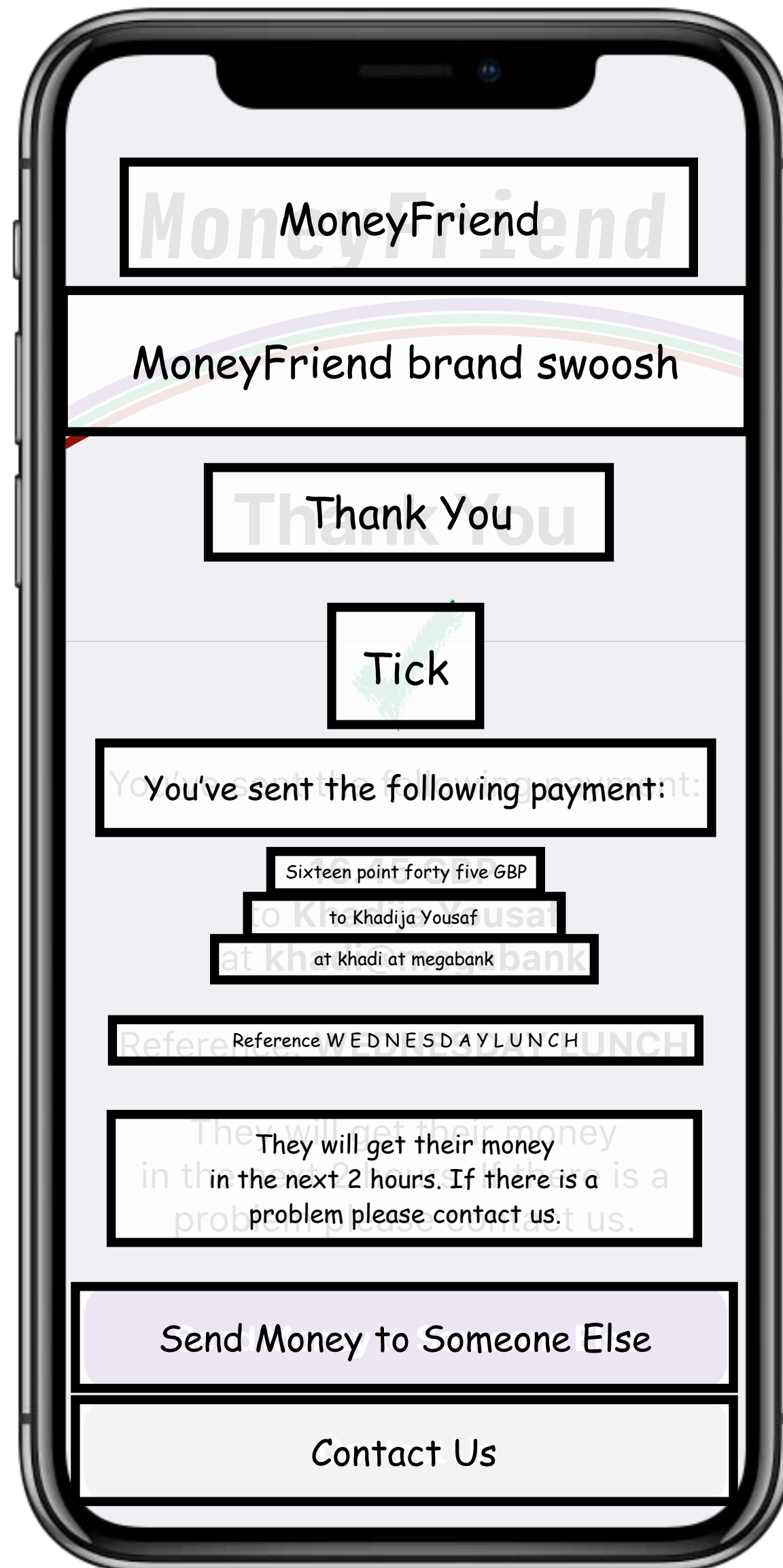




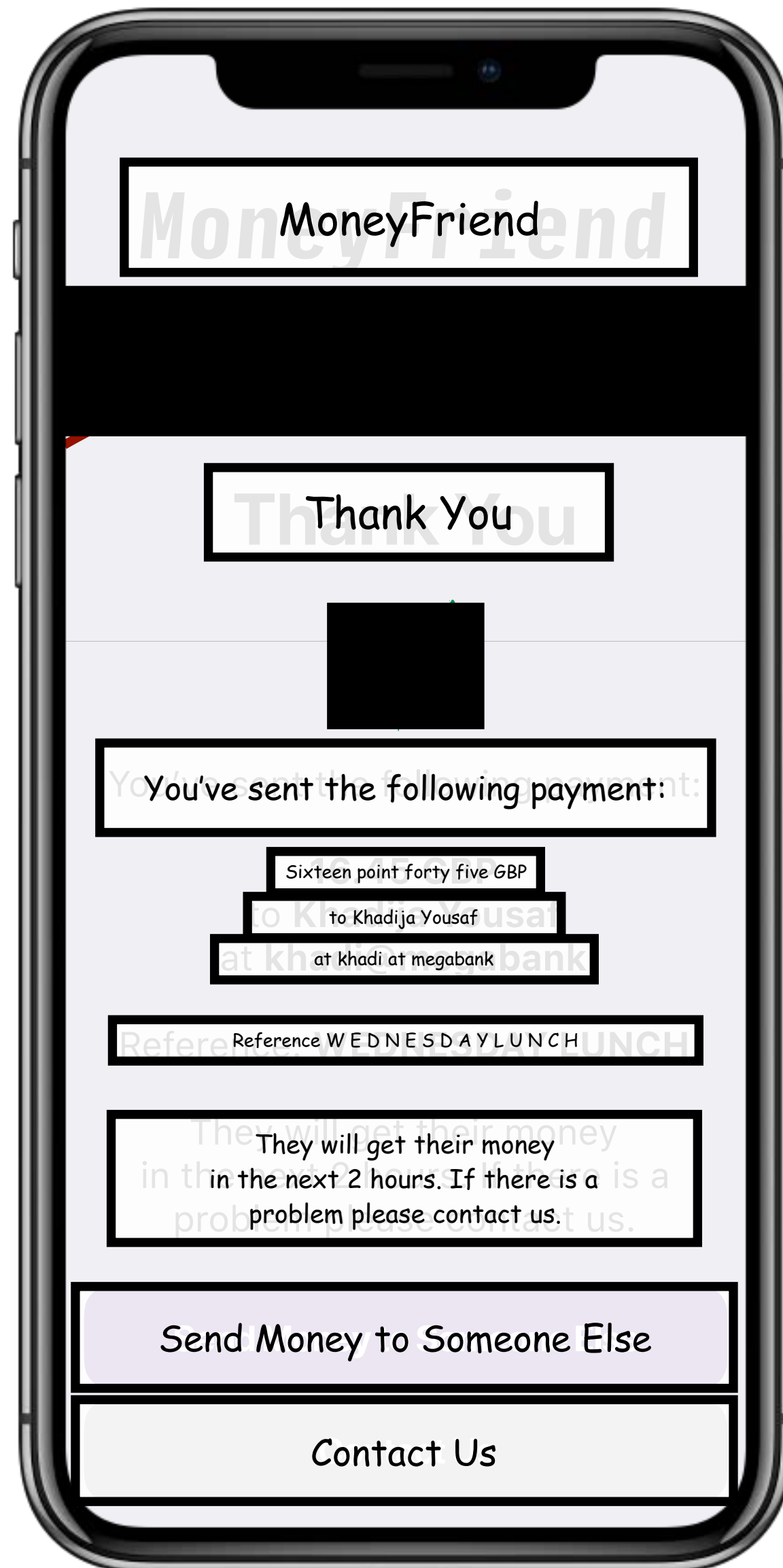
**accessibility  $\neq$   
just giving all the elements labels**











Swift

```
brandSwooshView
    .isAccessibilityElement
    = false
```

HTML

```
<img
    src=
        "brand-swoosh.png"
    aria-hidden=
        "true">
```

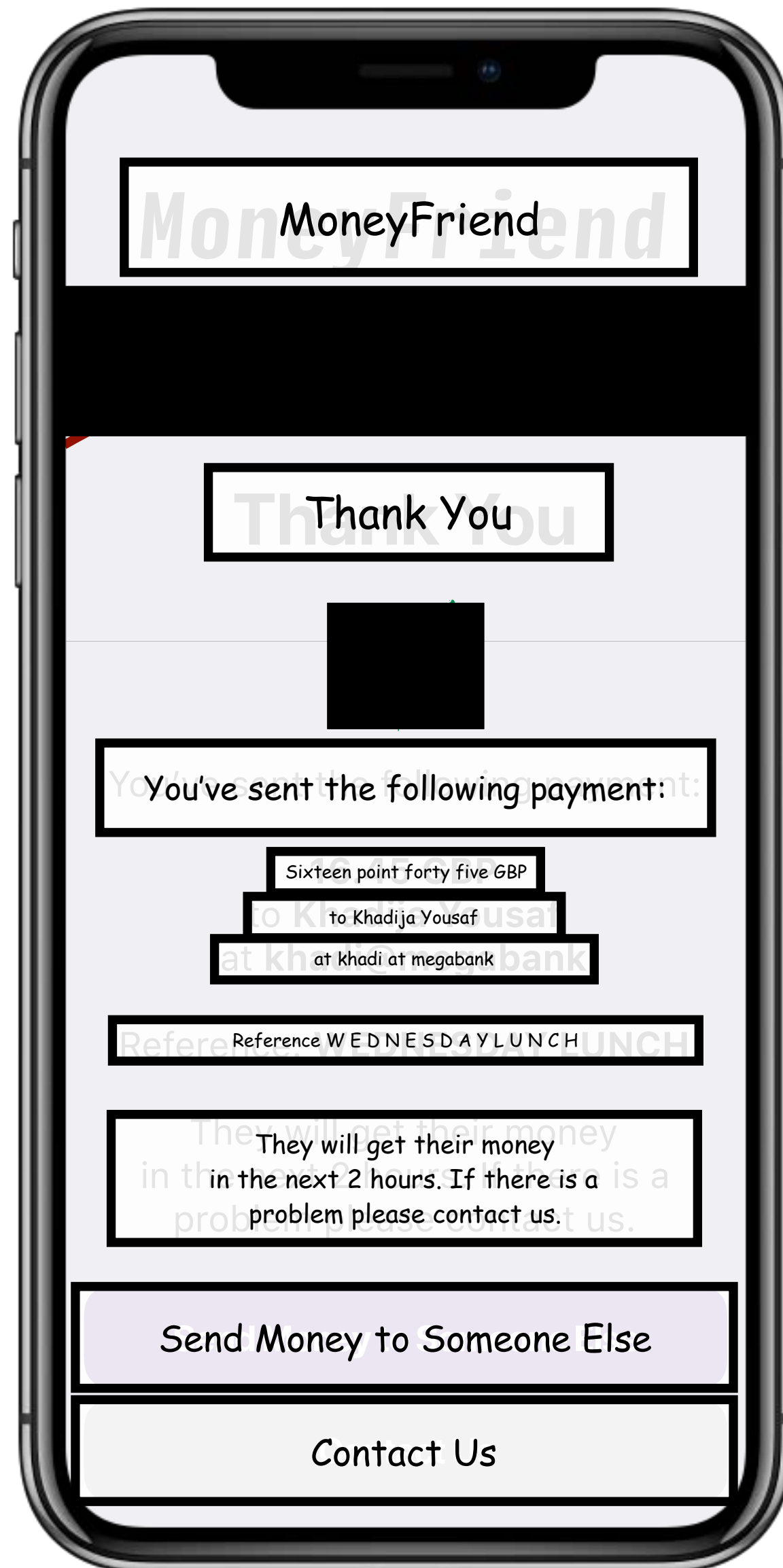
```

```

```

```

```
body {  
    background-image:  
        url( 'brand-swoosh.png' );  
}
```



Swift

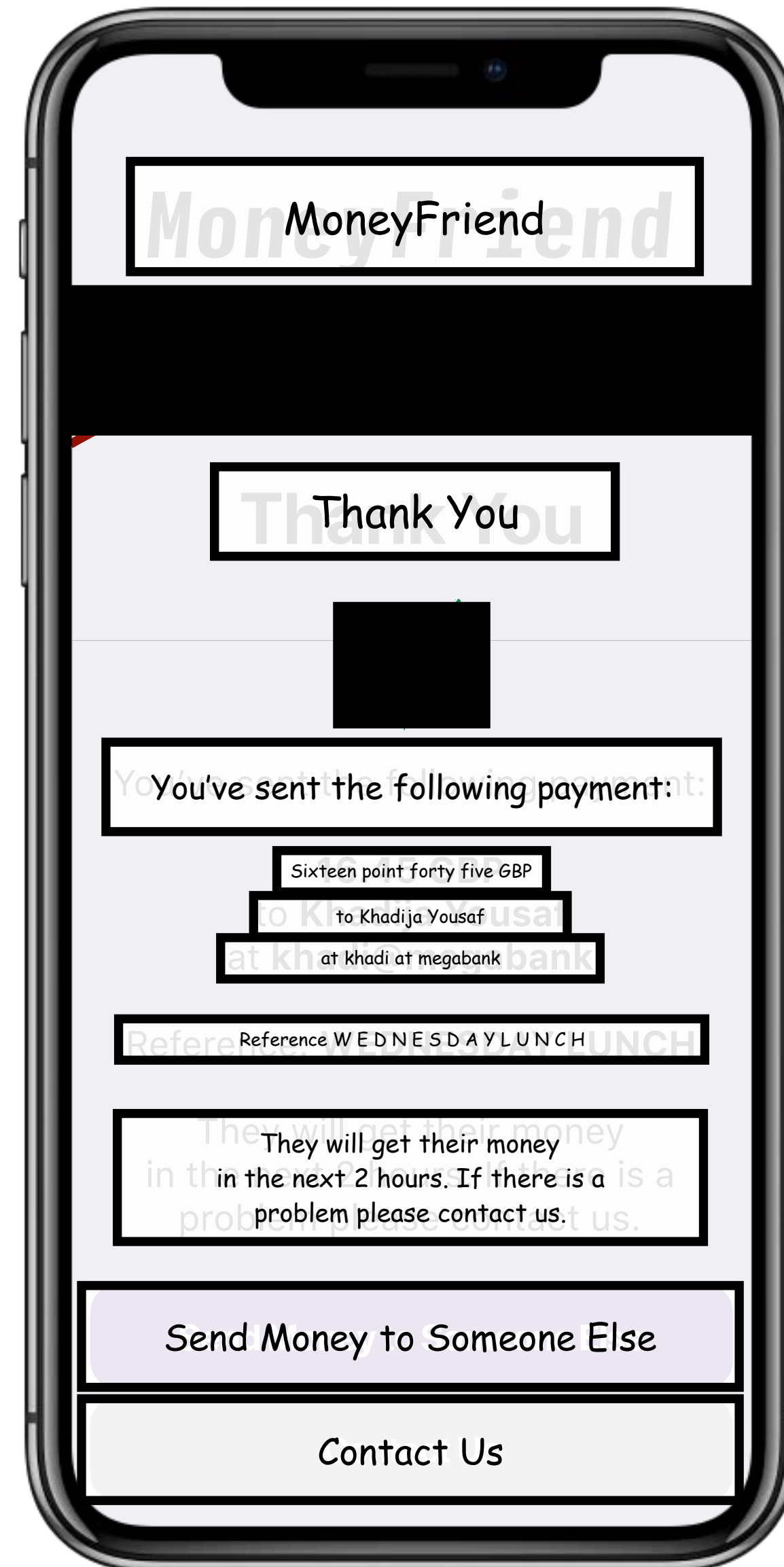
```
brandSwooshView
    .isAccessibilityElement
    = false
```

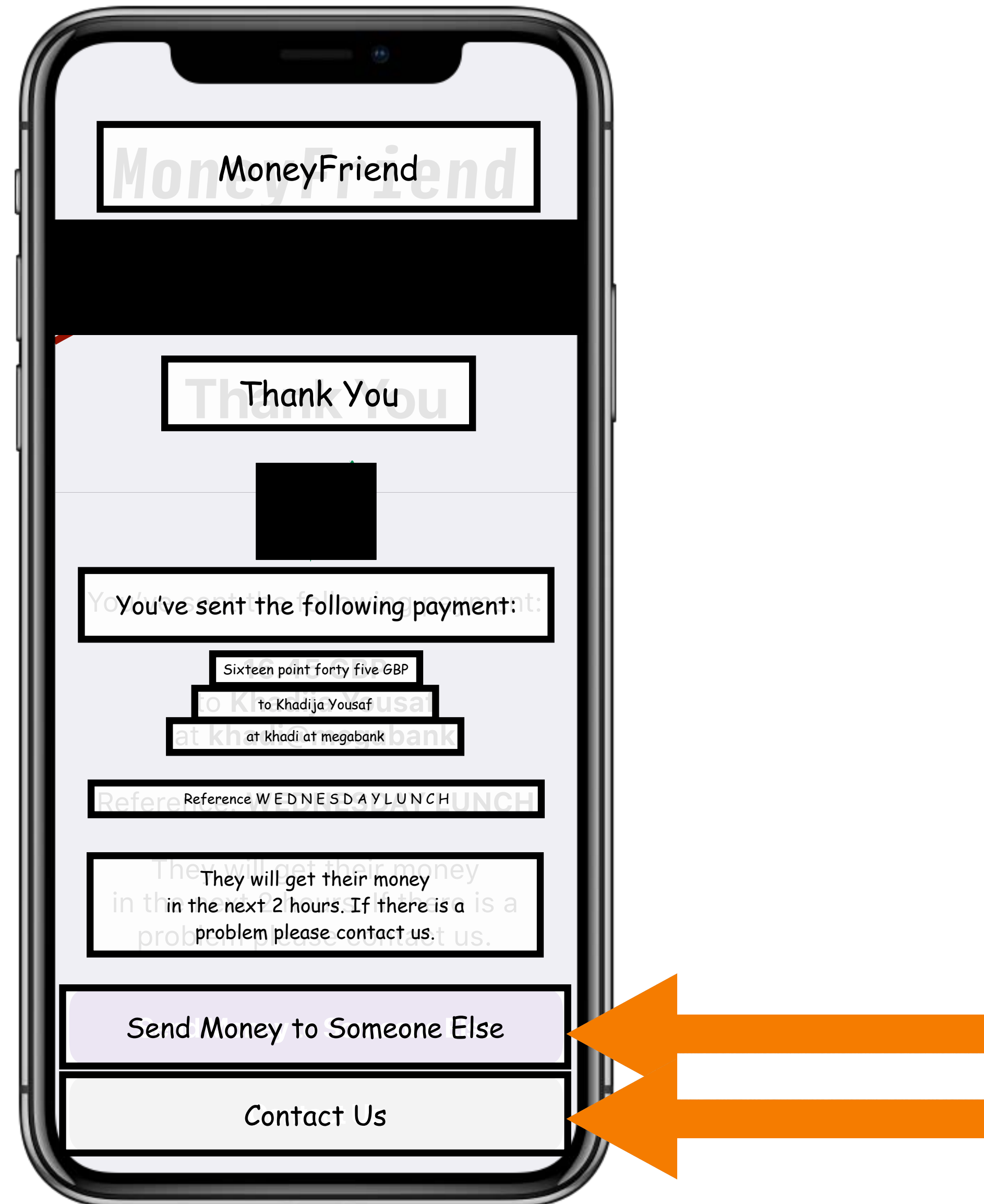
HTML

```
<img
    src=
        "brand-swoosh.png"
    aria-hidden=
        "true">
```

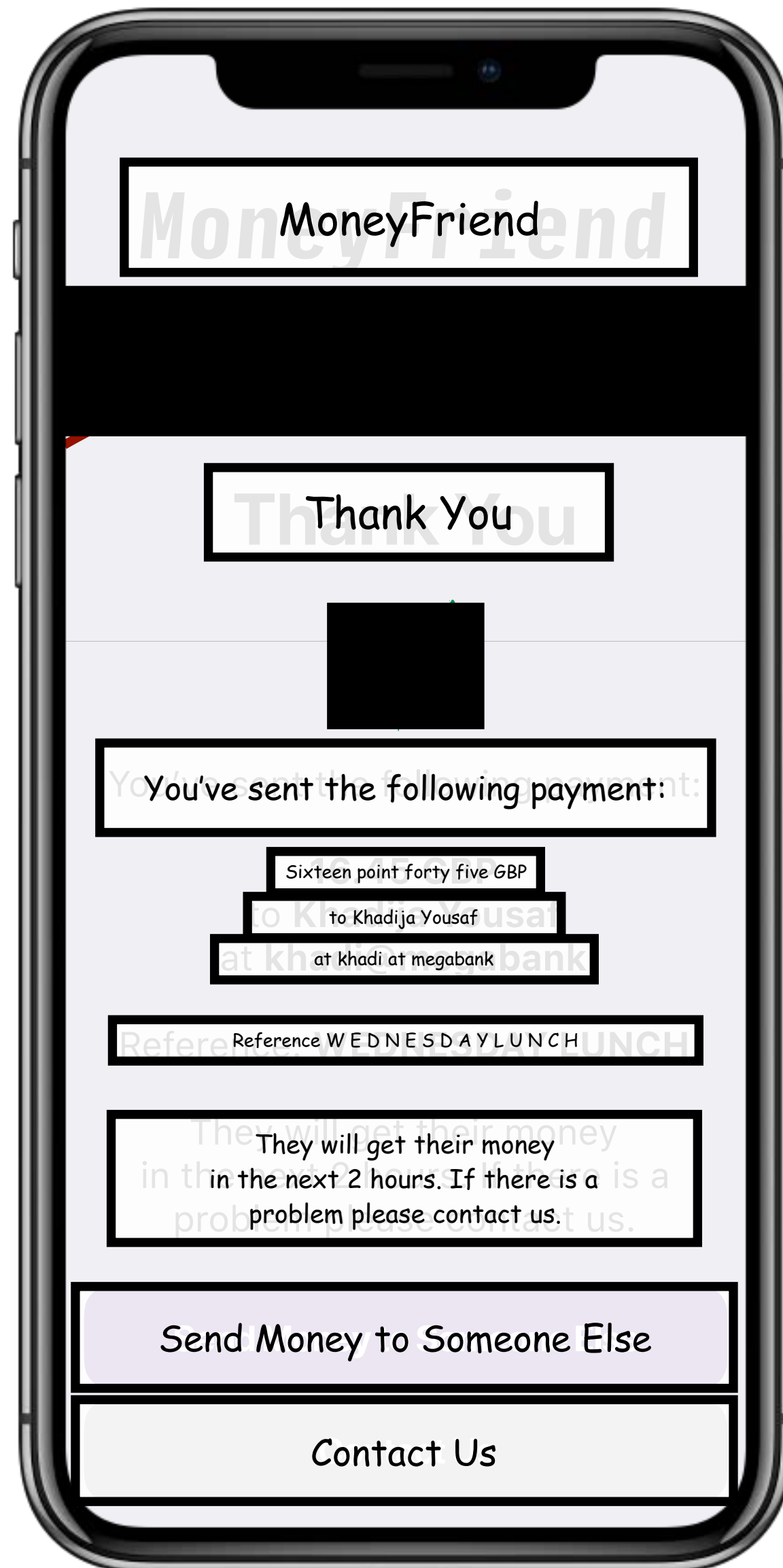
**accessibility  $\neq$   
giving all the elements labels *and*  
removing irrelevant ones**

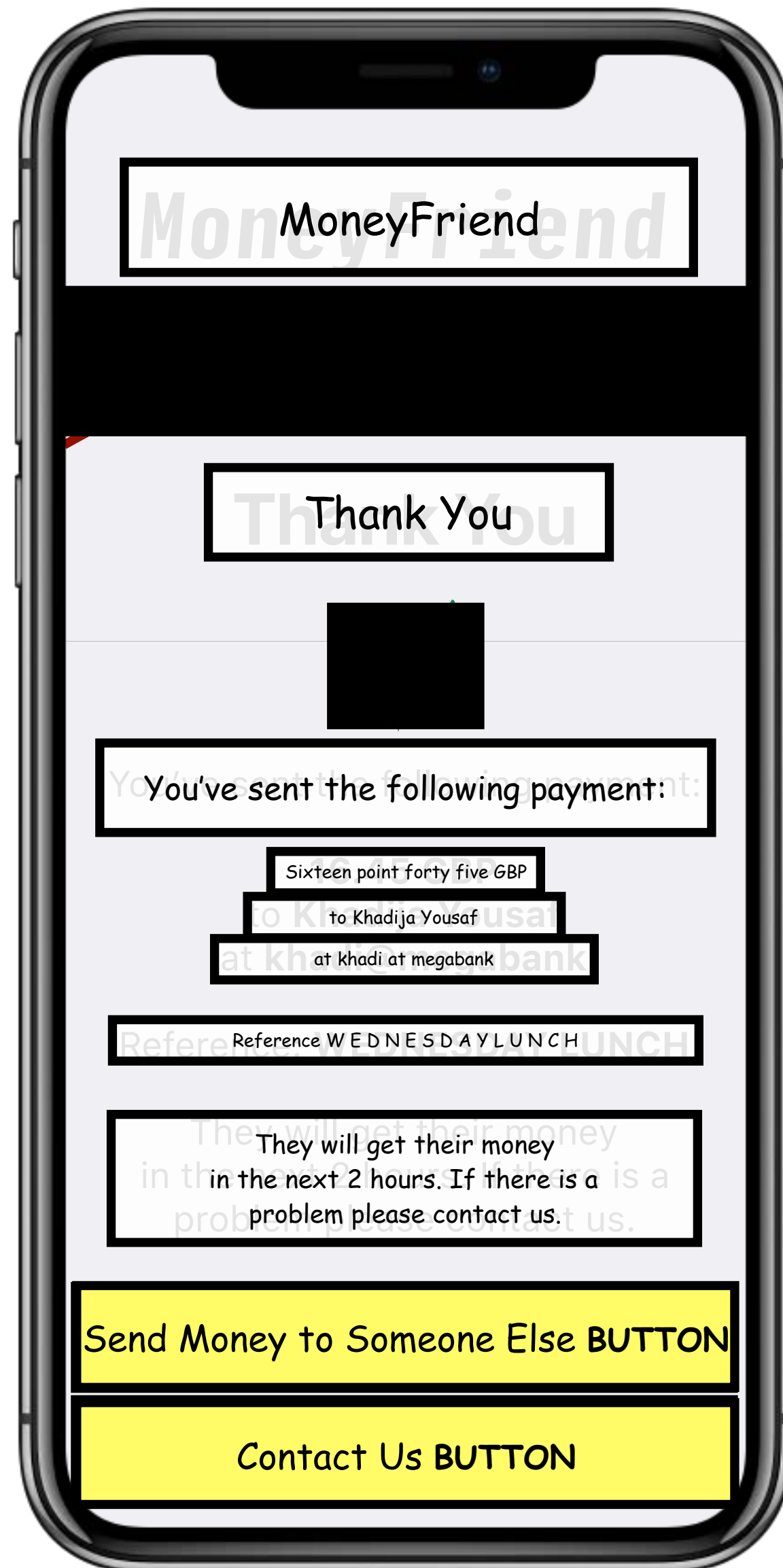












Swift

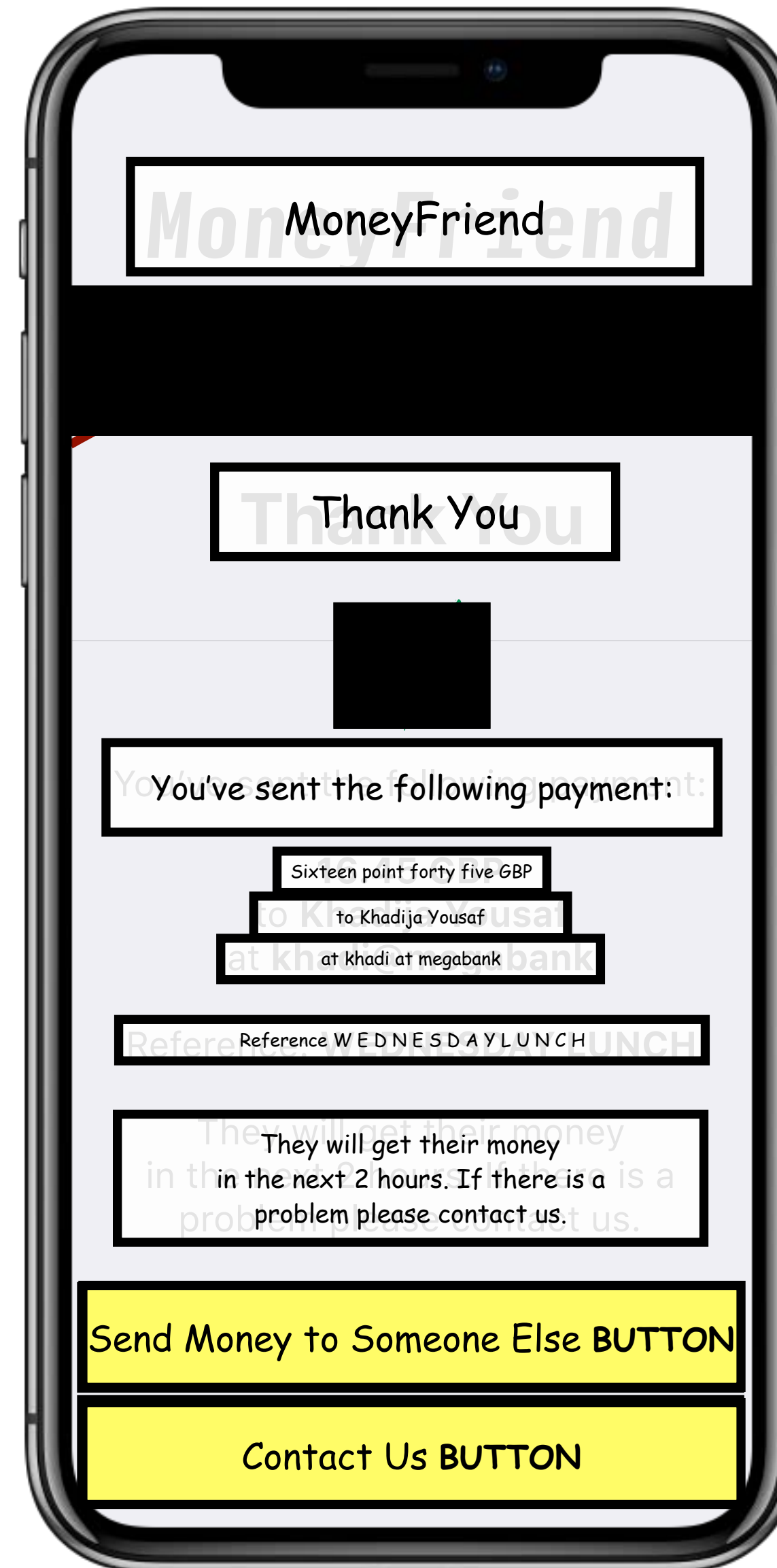
```
sendMoneyButton  
    .accessibilityTraits  
    = .button
```

HTML

```
<a aria-role="button">  
    Send Money to Someone  
    Else  
</a>
```

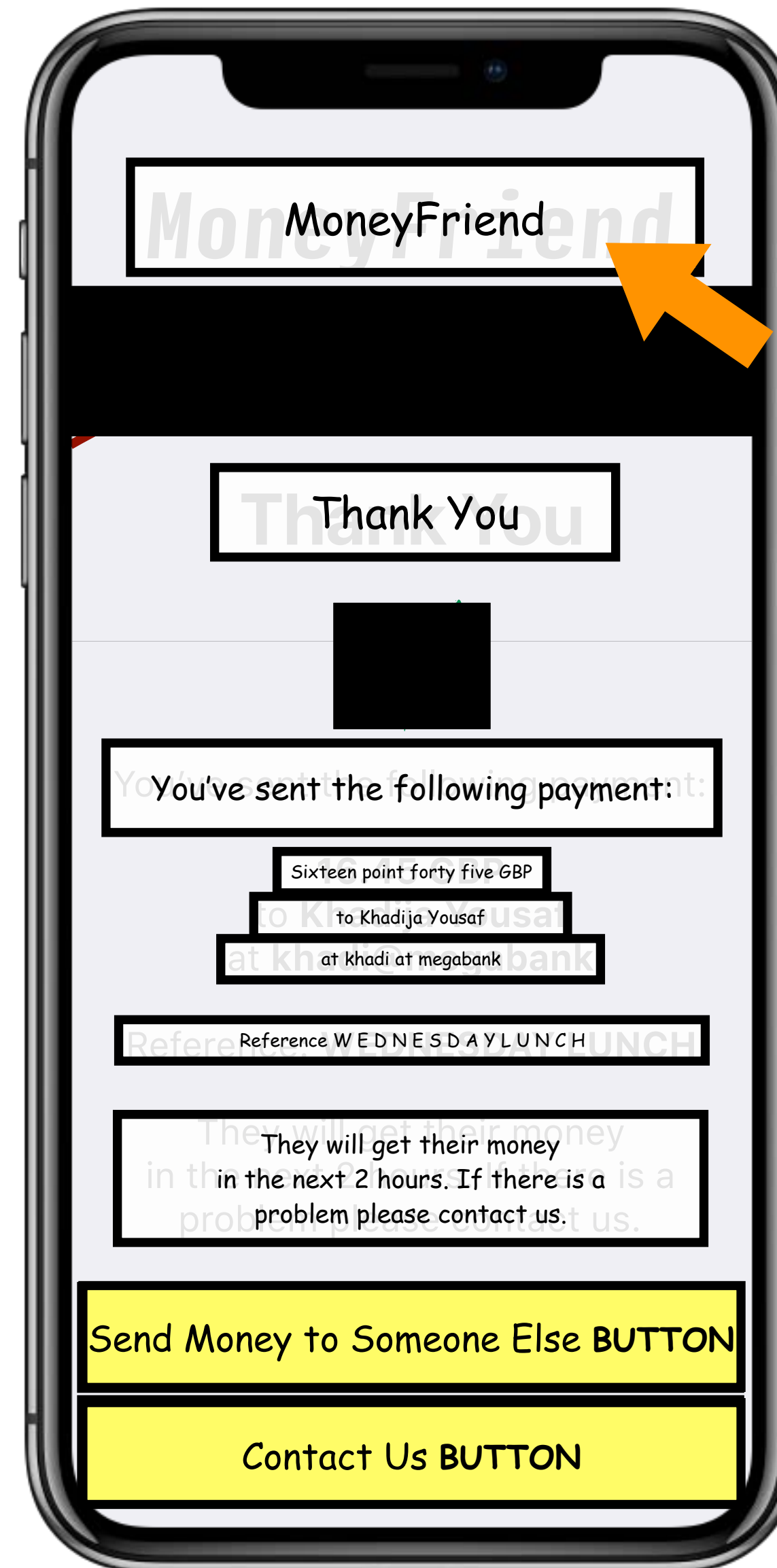
**Important:** If you're using standard buttons, you don't need this...  
so use the standard elements 😊



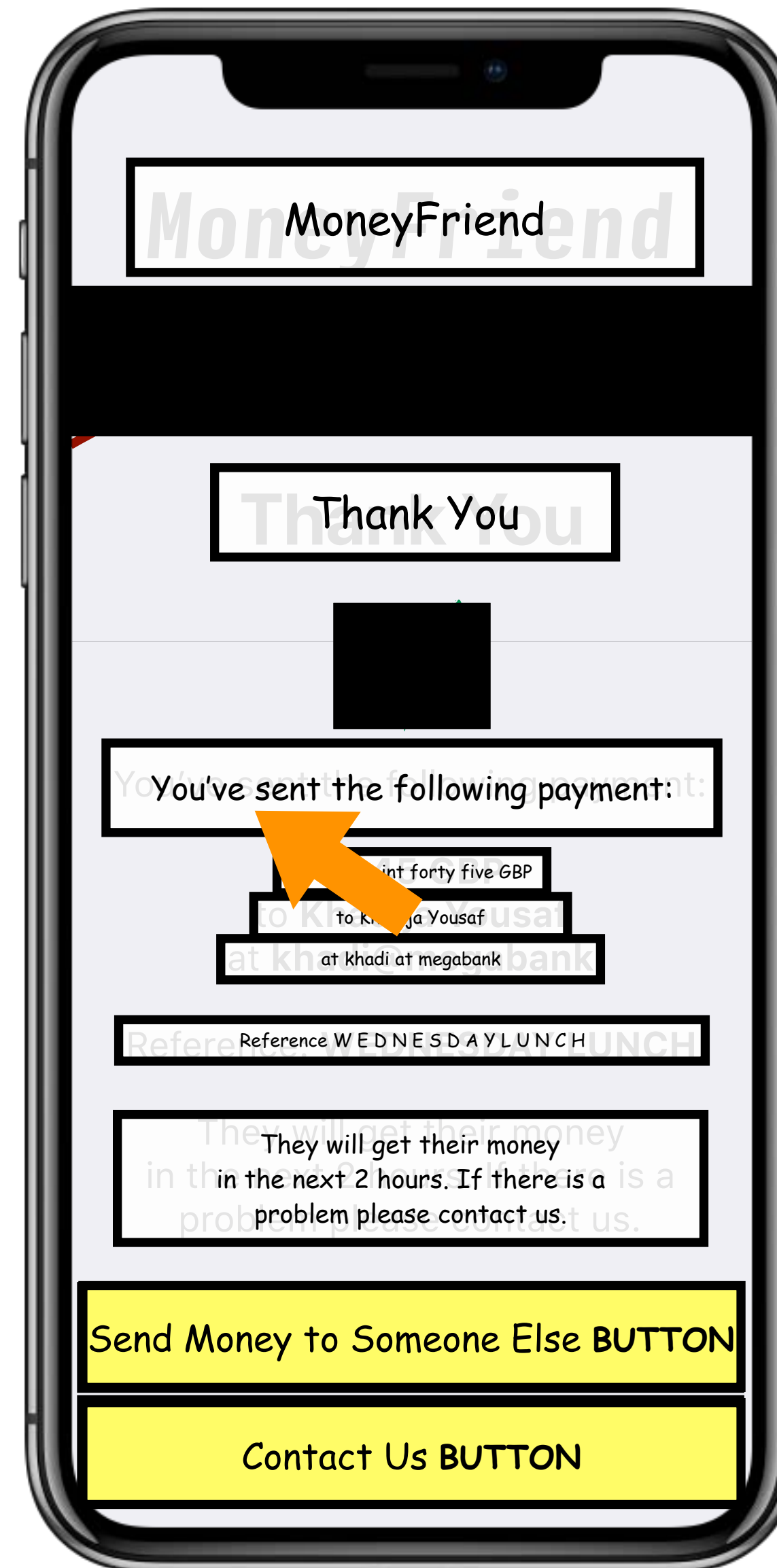


**accessibility  $\neq$   
giving all the elements labels *and*  
removing irrelevant ones *and*  
setting all the traits/behaviours**

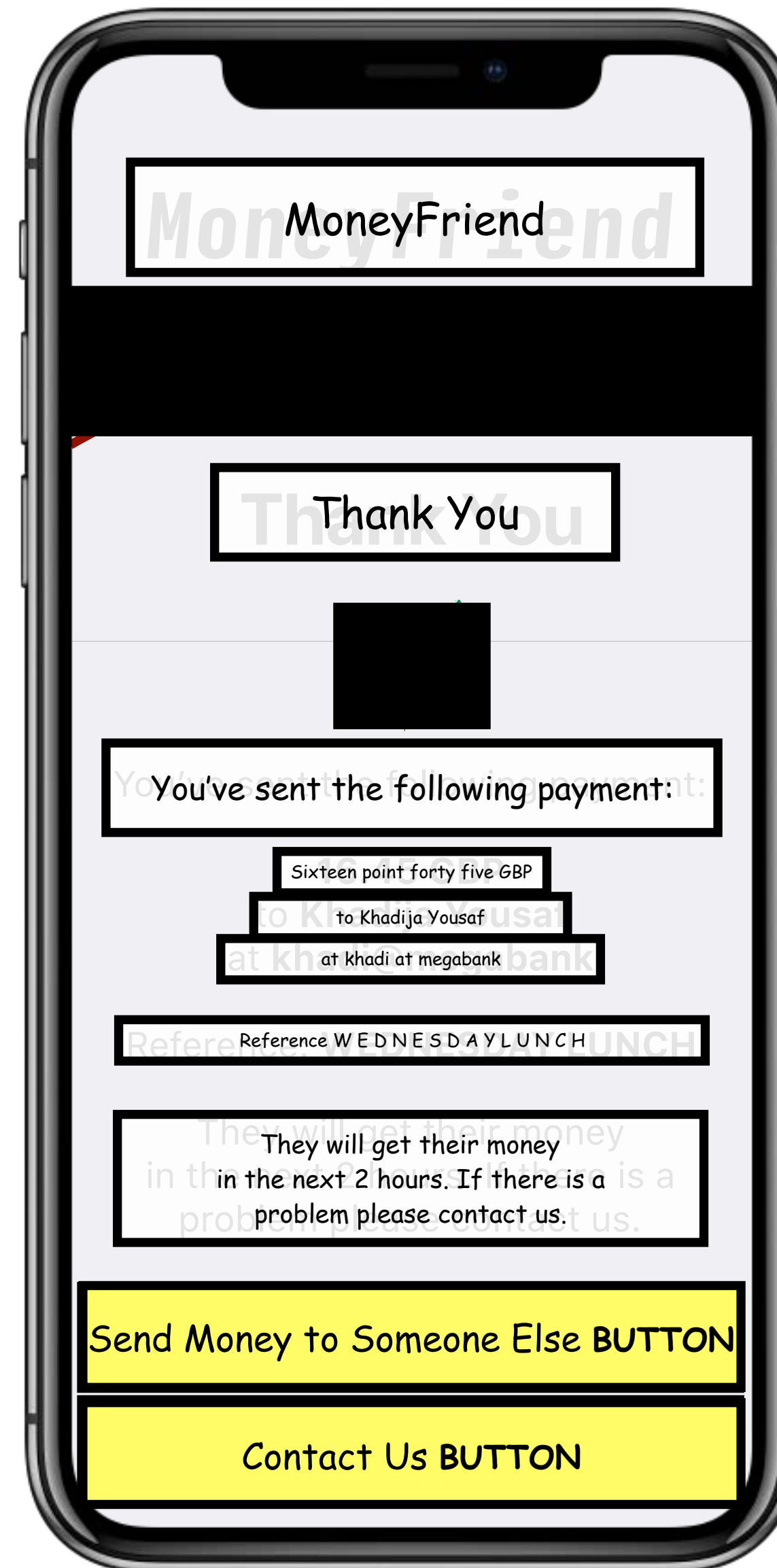




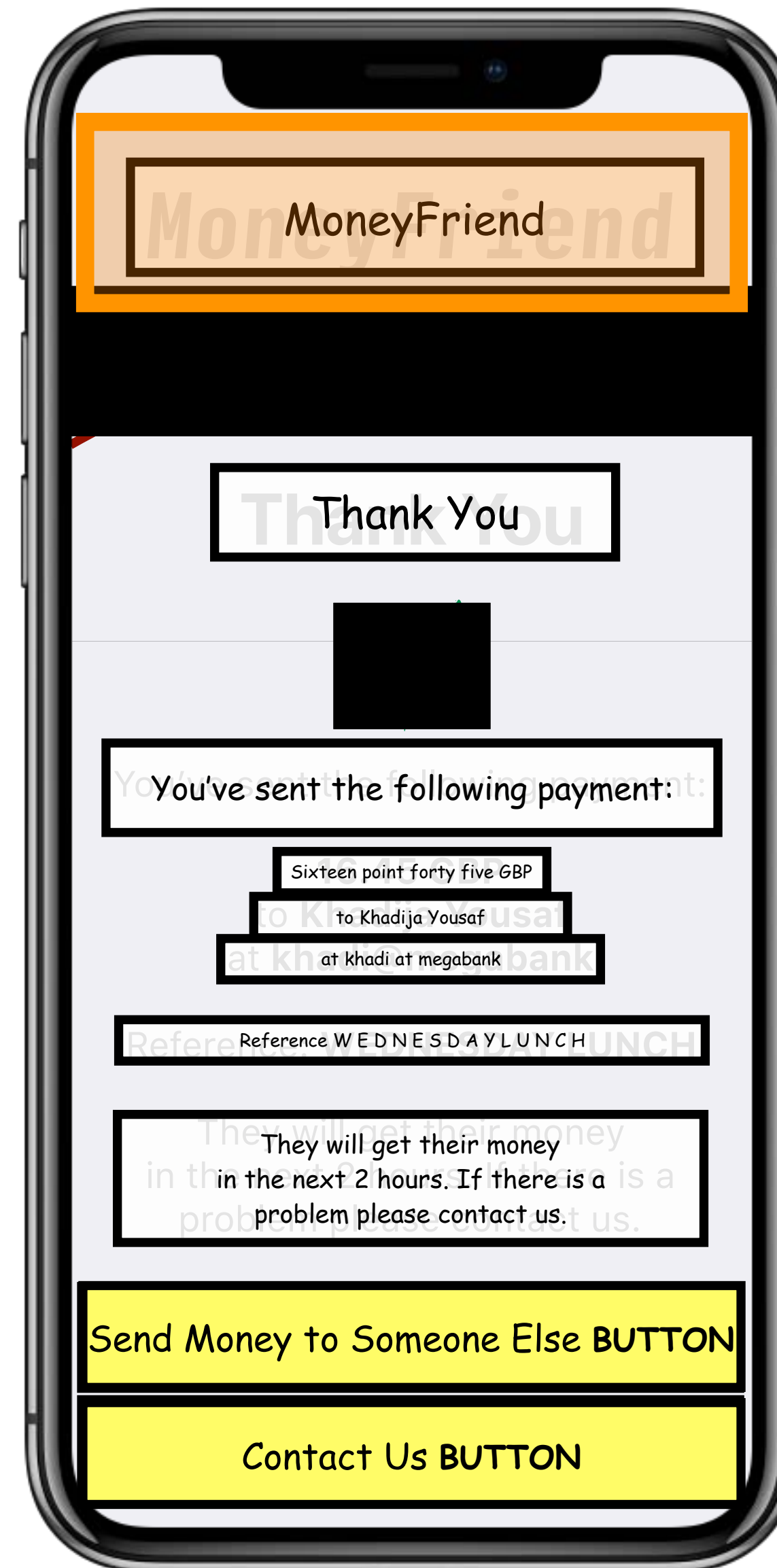




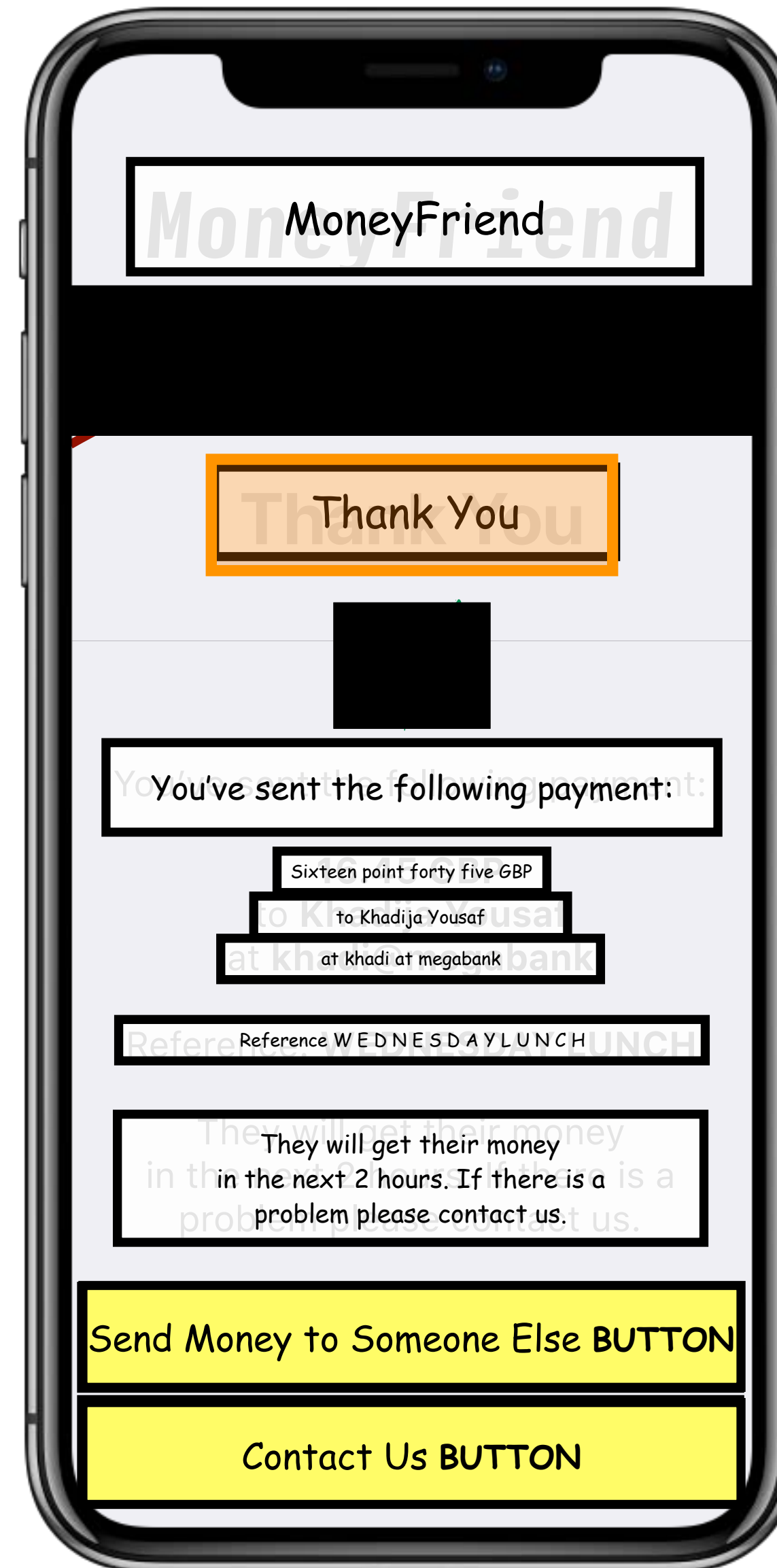


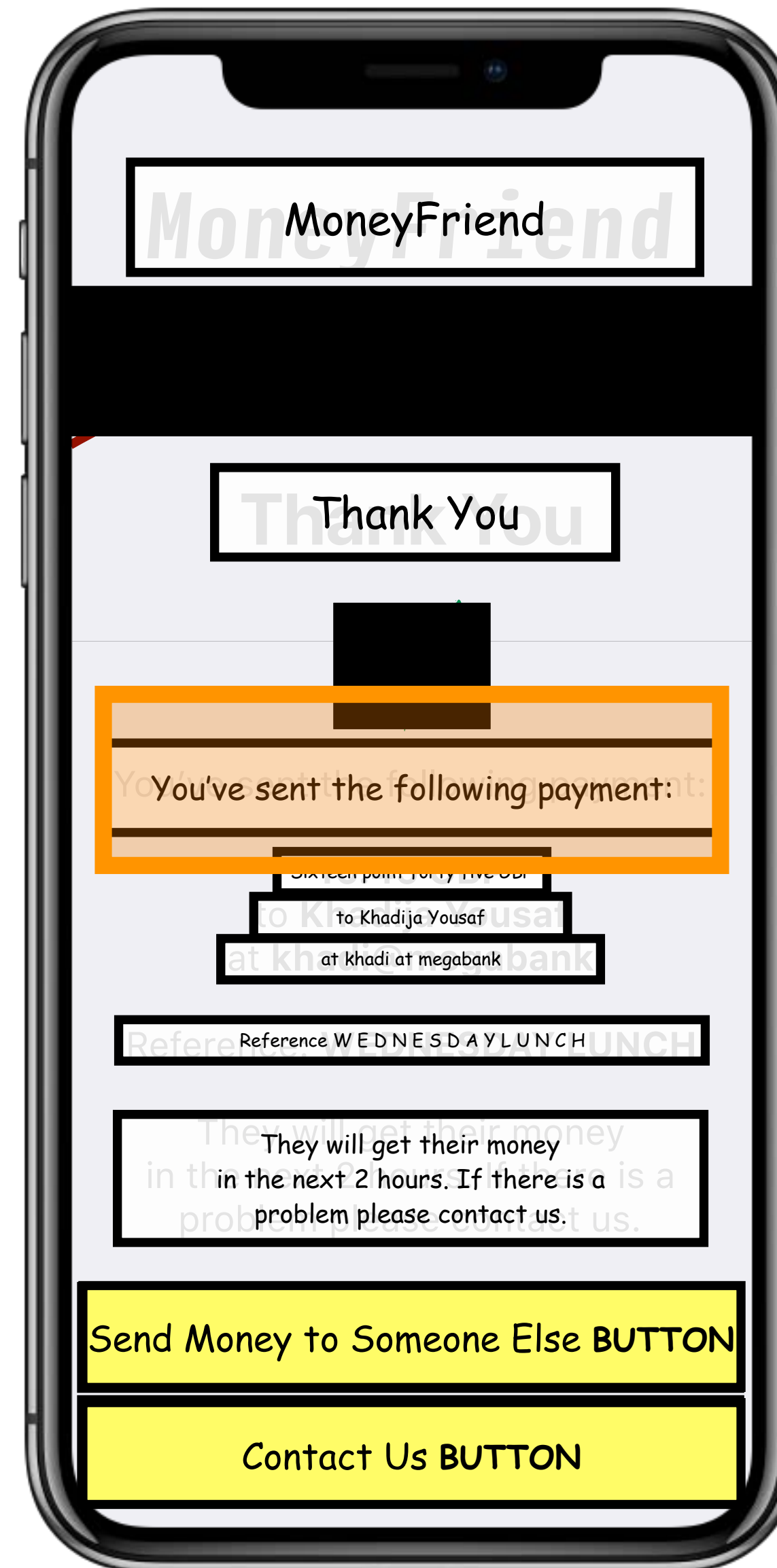




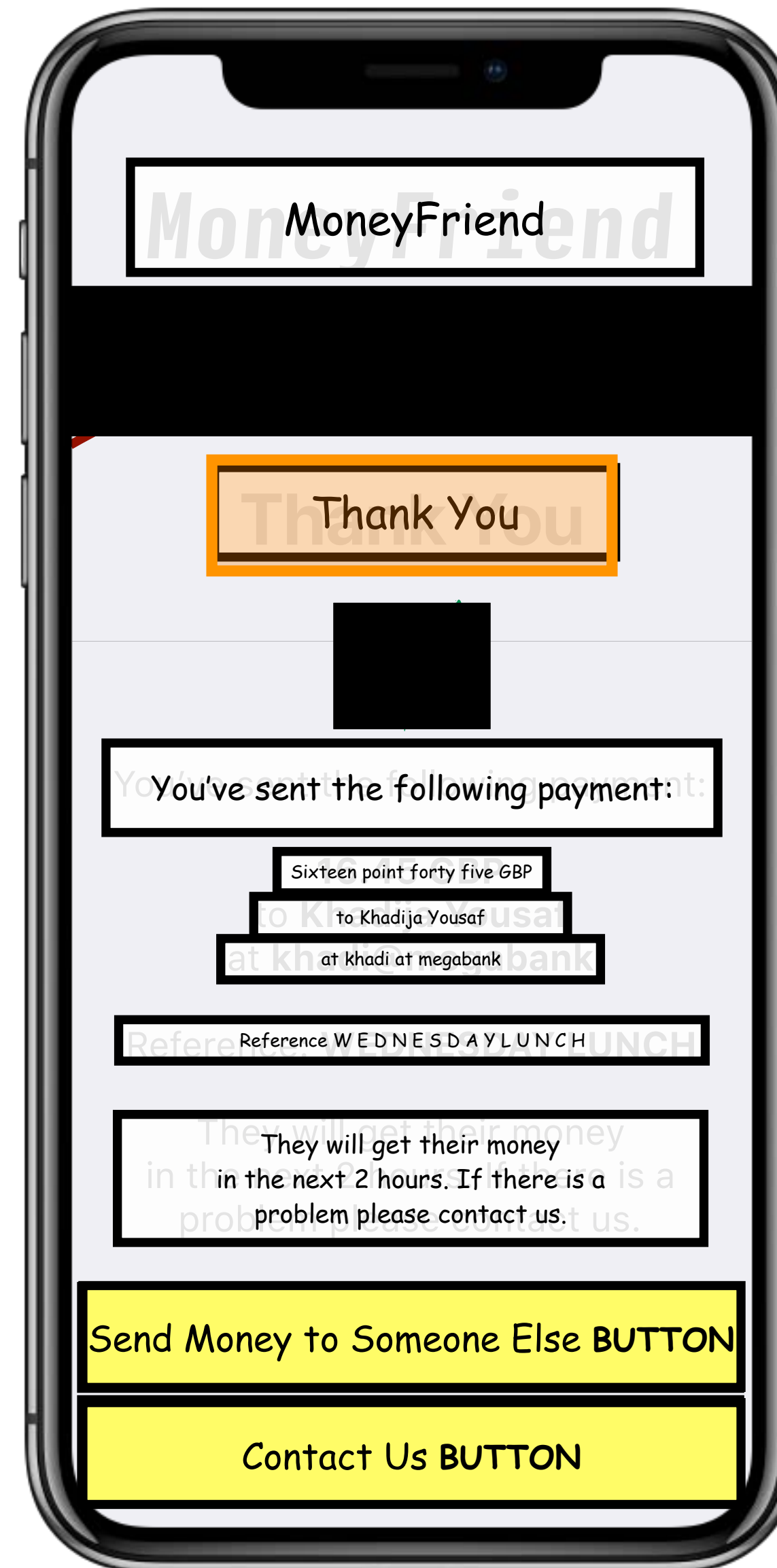












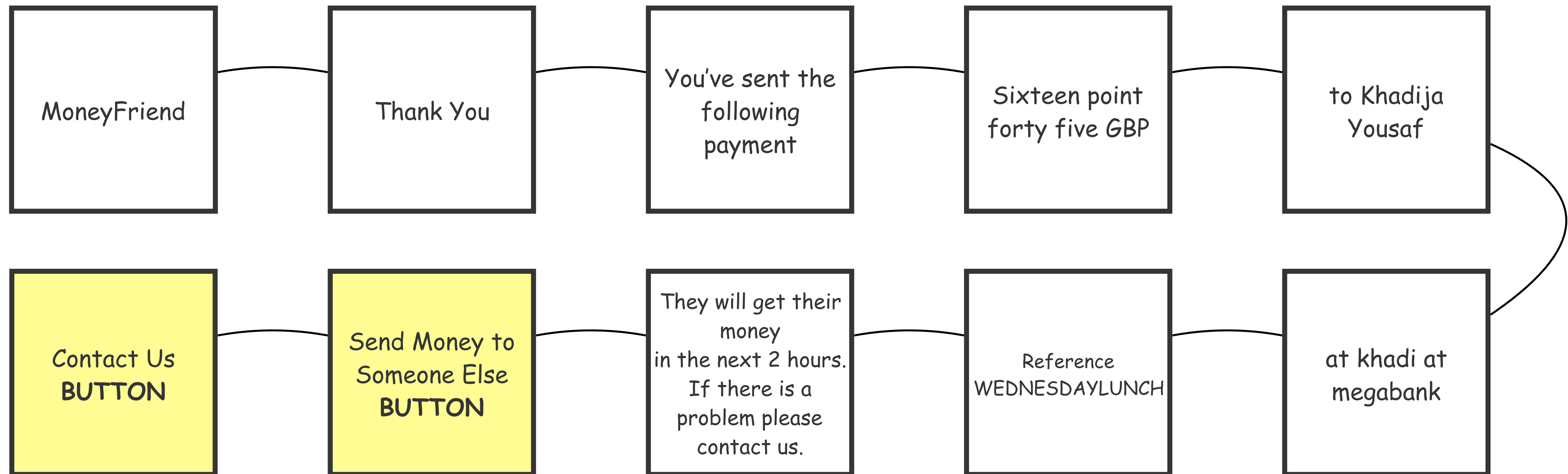






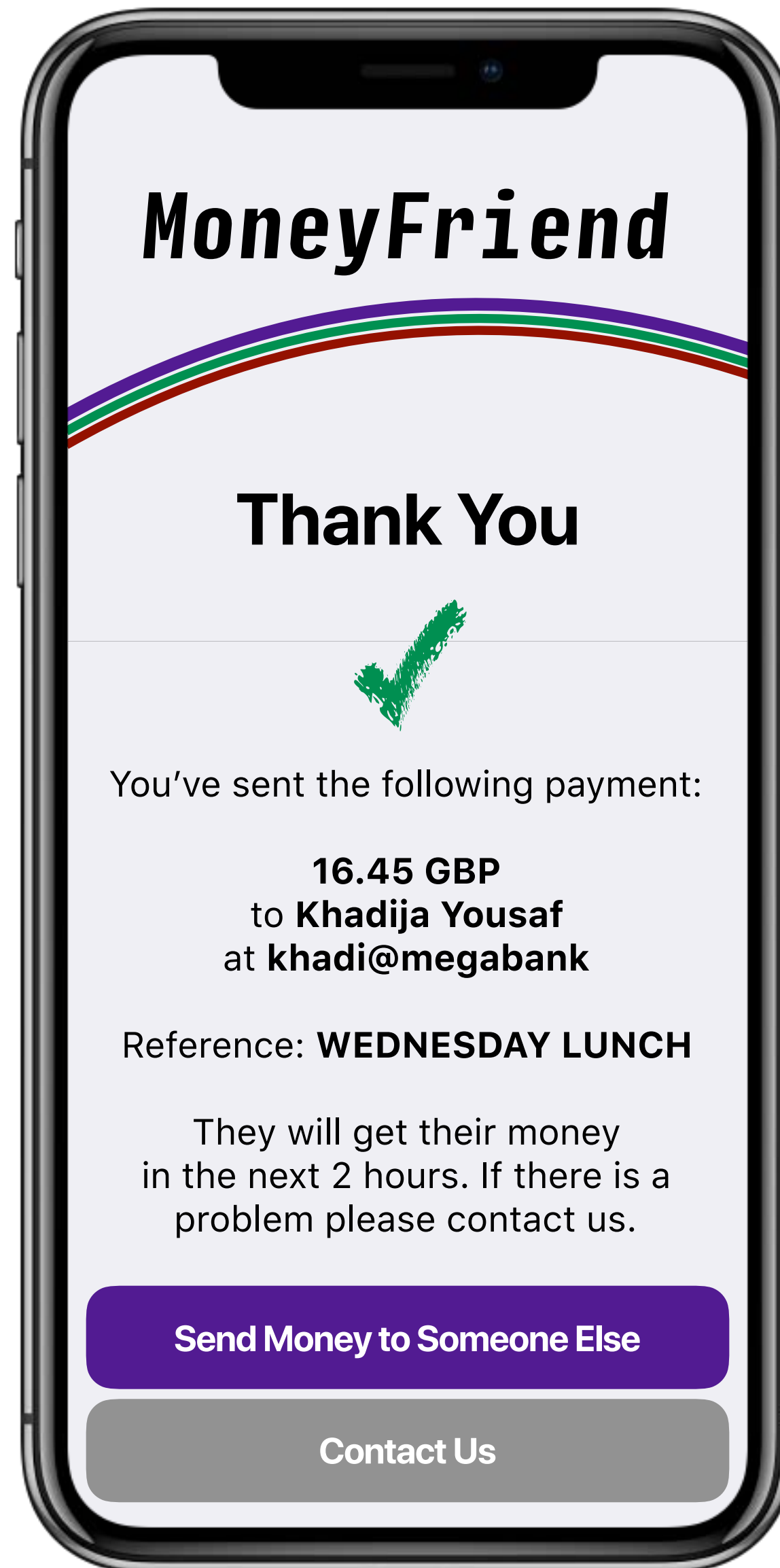
Image © David Monniaux, Wikimedia Commons

*Sausages, Antennagate, Brexit*

@jorodev

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Triple tap  
× 3





Triple tap  
× 3



We could all do with examining how the system unfairly benefits us personally...  
An uncomfortable truth dawned on me as I lugged my bike up and down flights of stairs in commuter-town train stations [...] no ramps, no lifts. Before I'd had my own wheels to carry, I'd never noticed this problem.

-Reni Eddo-Lodge

*Why I'm No Longer Talking To White People About Race*

'Essential' Marlon James, Winner of the Man Booker Prize 2015

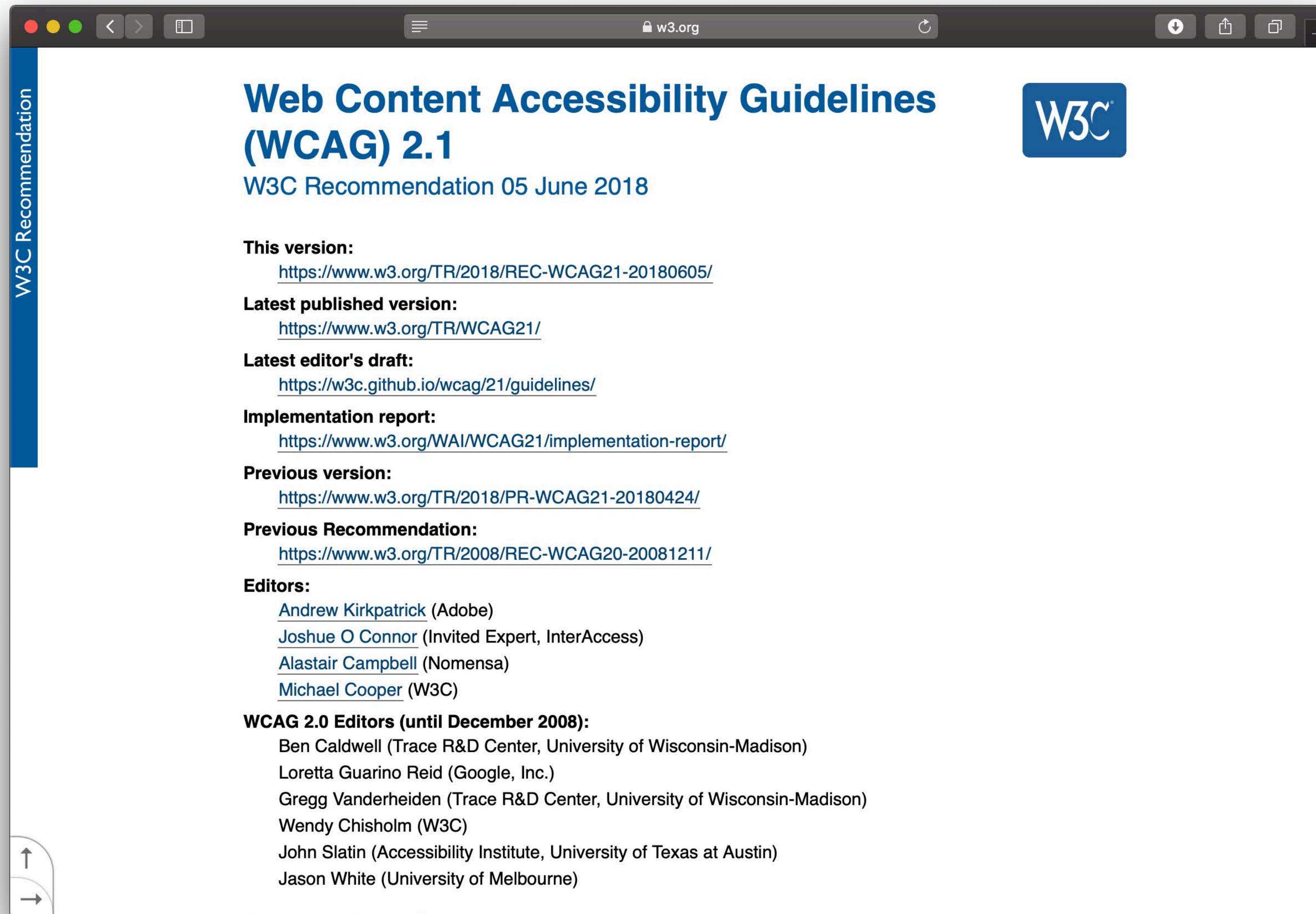
**Reni Eddo-Lodge**

**WHY I'M  
NO LONGER  
TALKING  
TO WHITE  
PEOPLE  
ABOUT  
RACE**

THE  
BAILLIE  
GIFFORD  
PRIZE FOR  
NON-FICTION  
2017  
LONGLISTED

B L O O M S B U R Y   C I R C U S



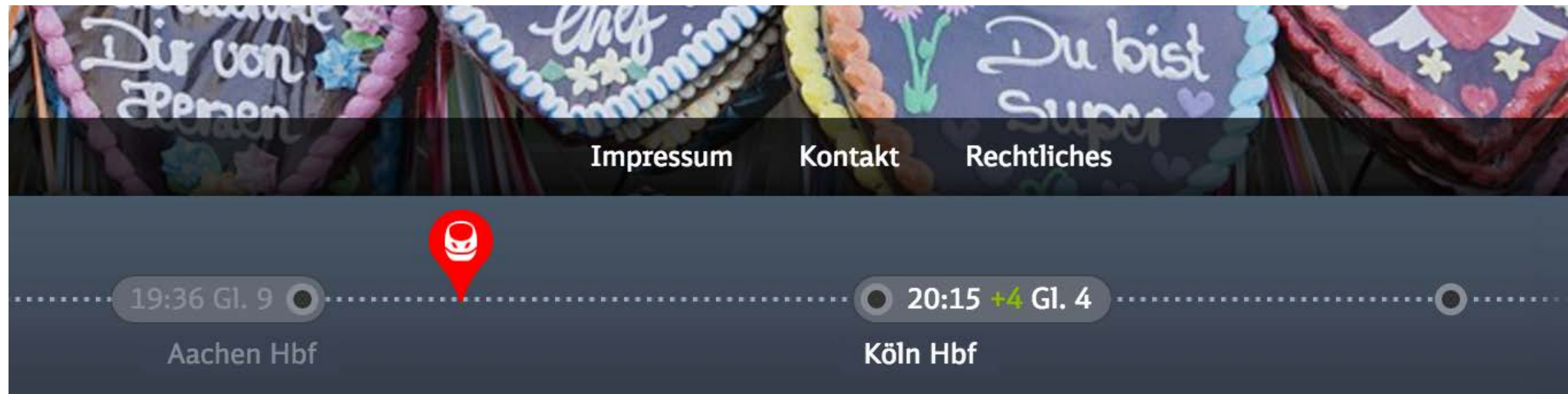




**accessibility  $\neq$   
just getting your app to work with  
a screenreader**

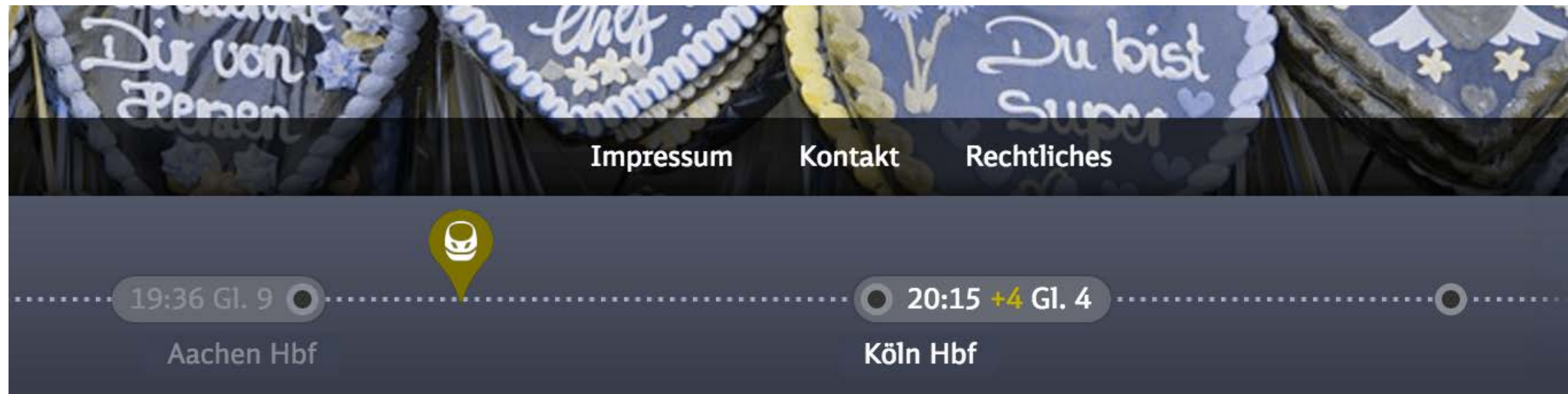


# Colourblindness (colour vision deficiency, CVD)

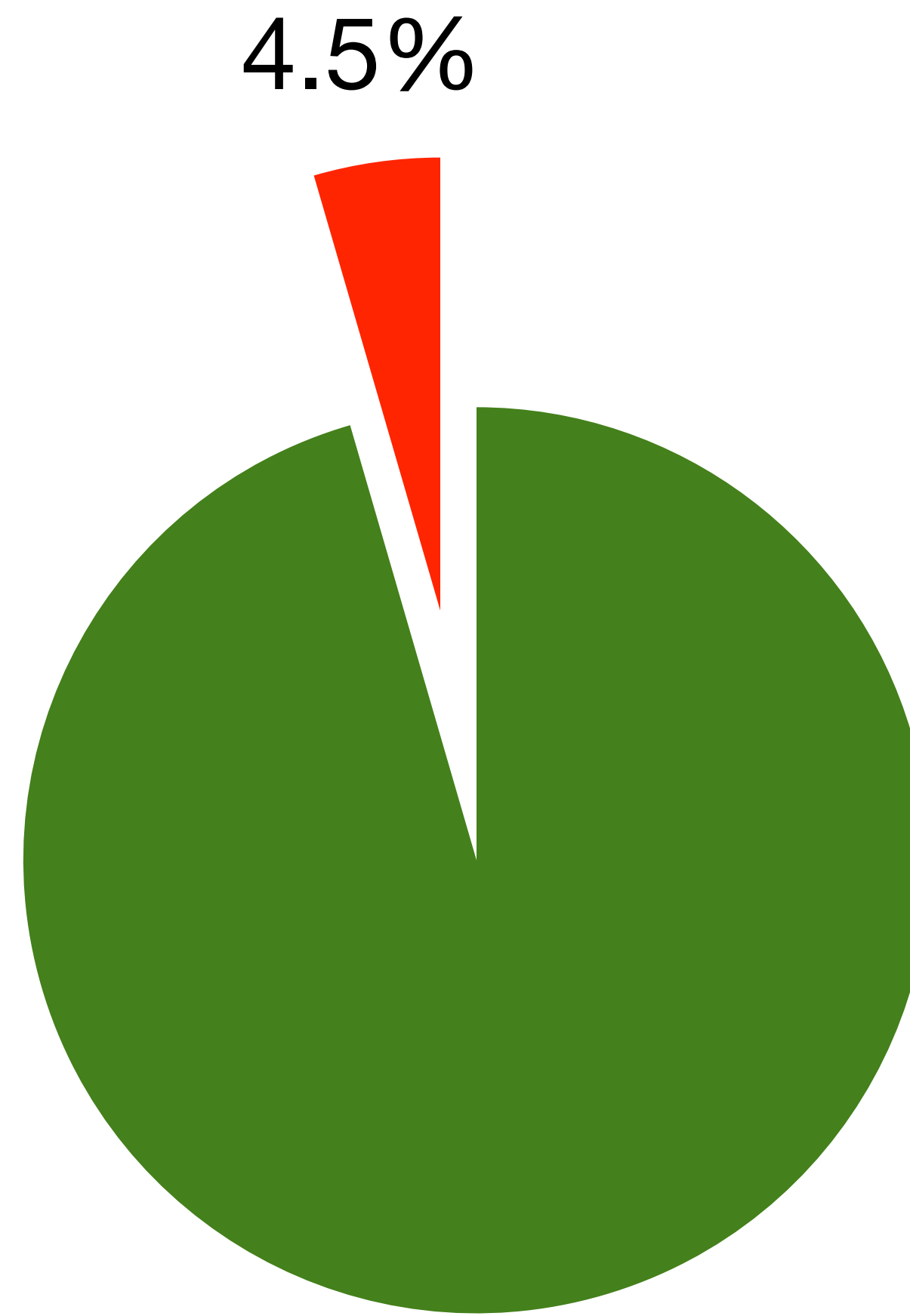




# Colourblindness (colour vision deficiency, CVD)







4.5% of the UK population  $\approx$  2.7 million people  
(source: <http://www.colourblindawareness.org/colour-blindness/>)





8% men = (1 in 12)

(source: <http://www.colourblindawareness.org/colour-blindness/>)

**Is a red-green colourblind person  
disabled?**



# Contrast

don't make your slides look like this...

and test them on screens with different  
contrast ratios too

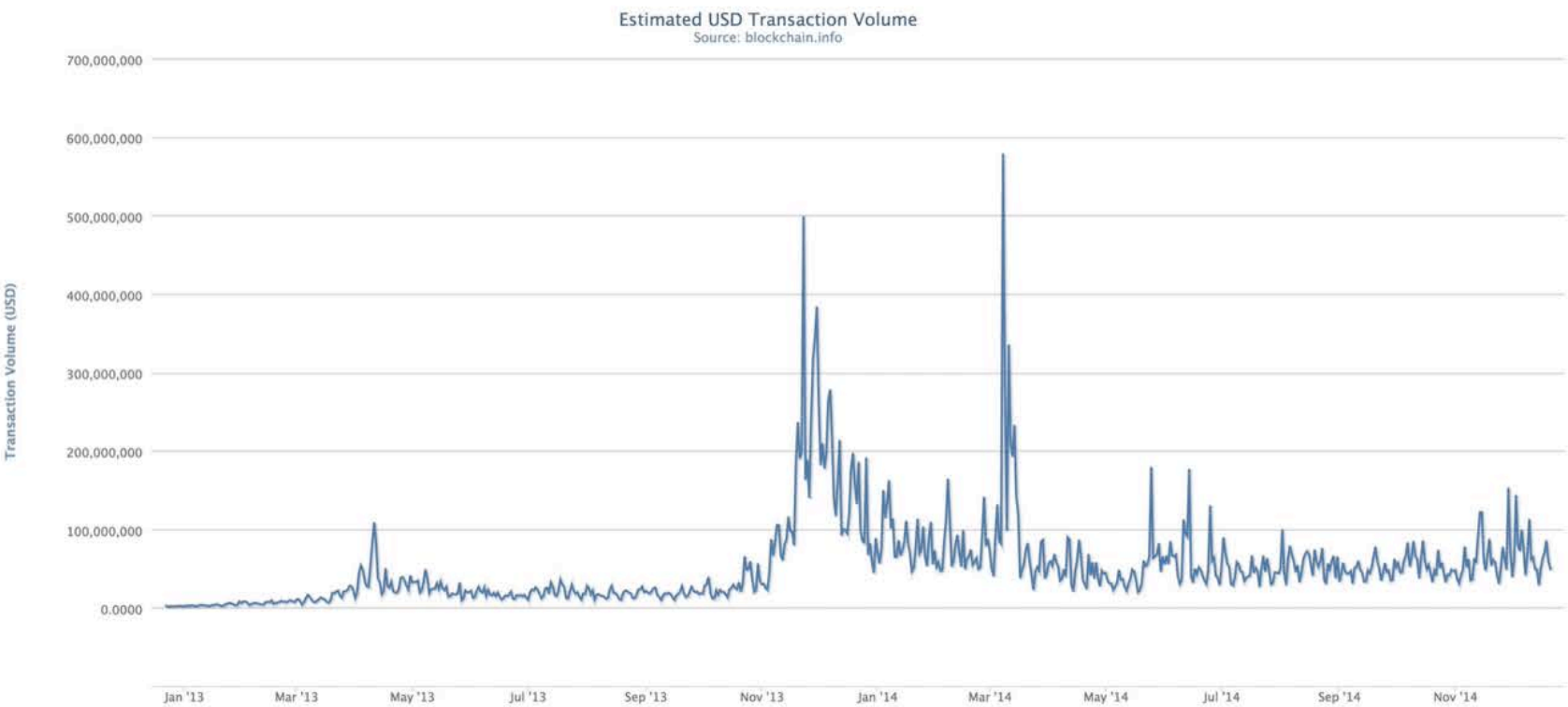
**accessibility ≠  
just designing for  
blind and partially sighted people**



DECEMBER 21, 2014

# Bitcoin adoption in 2015

The chart related to bitcoin that I find most interesting is not price, but instead Estimated USD Transaction Volume from Blockchain.info:



The reason I find this chart useful is that it seems a decent proxy for the amount of value being transacted through the network irrespective of bitcoin price fluctuations.

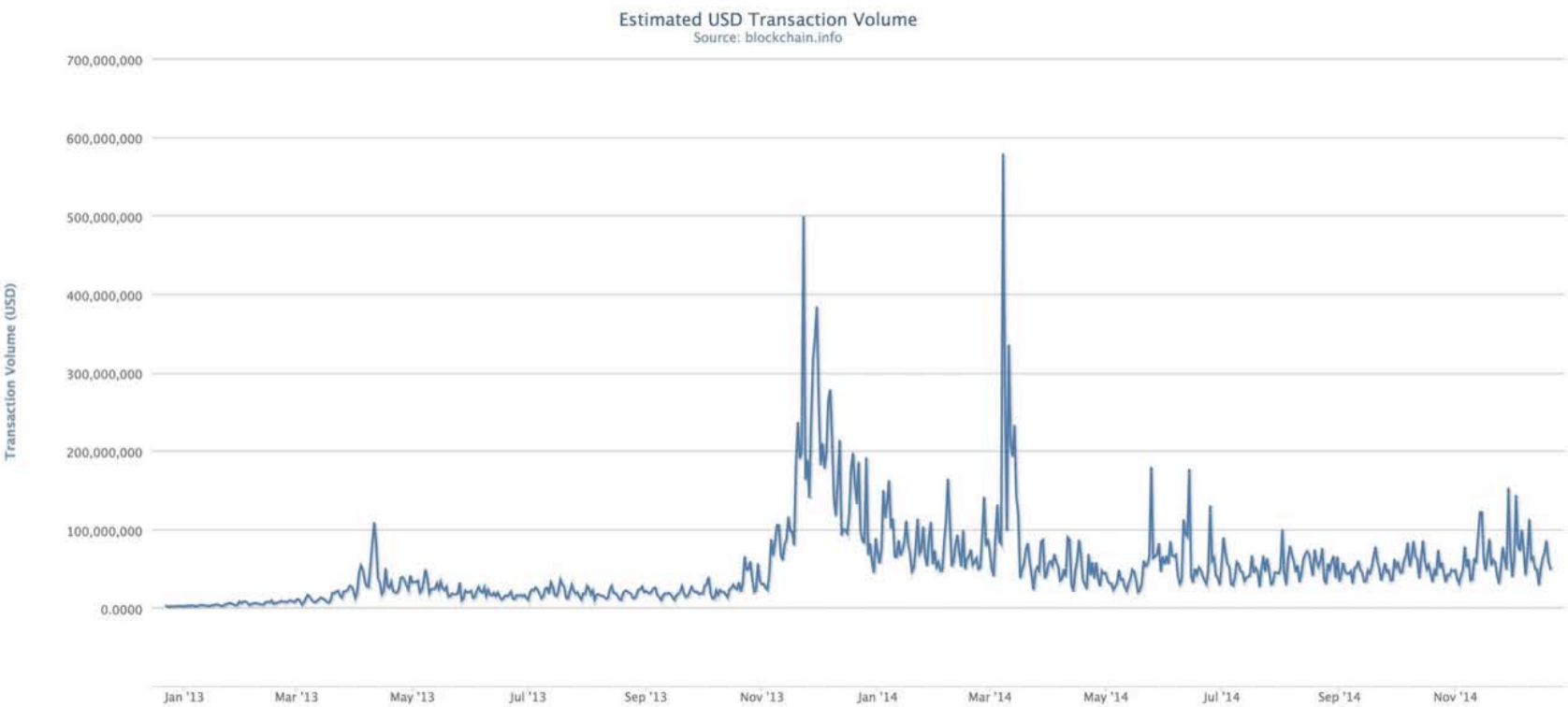
By way of comparison, here is a chart of the USD market price of bitcoin over the same period:



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Is someone who experiences  
tremors disabled?



Image: Apple

*Sausages, Antennagate, Brexit*

@jorodev

© Zuhlke 2019





Image: Apple

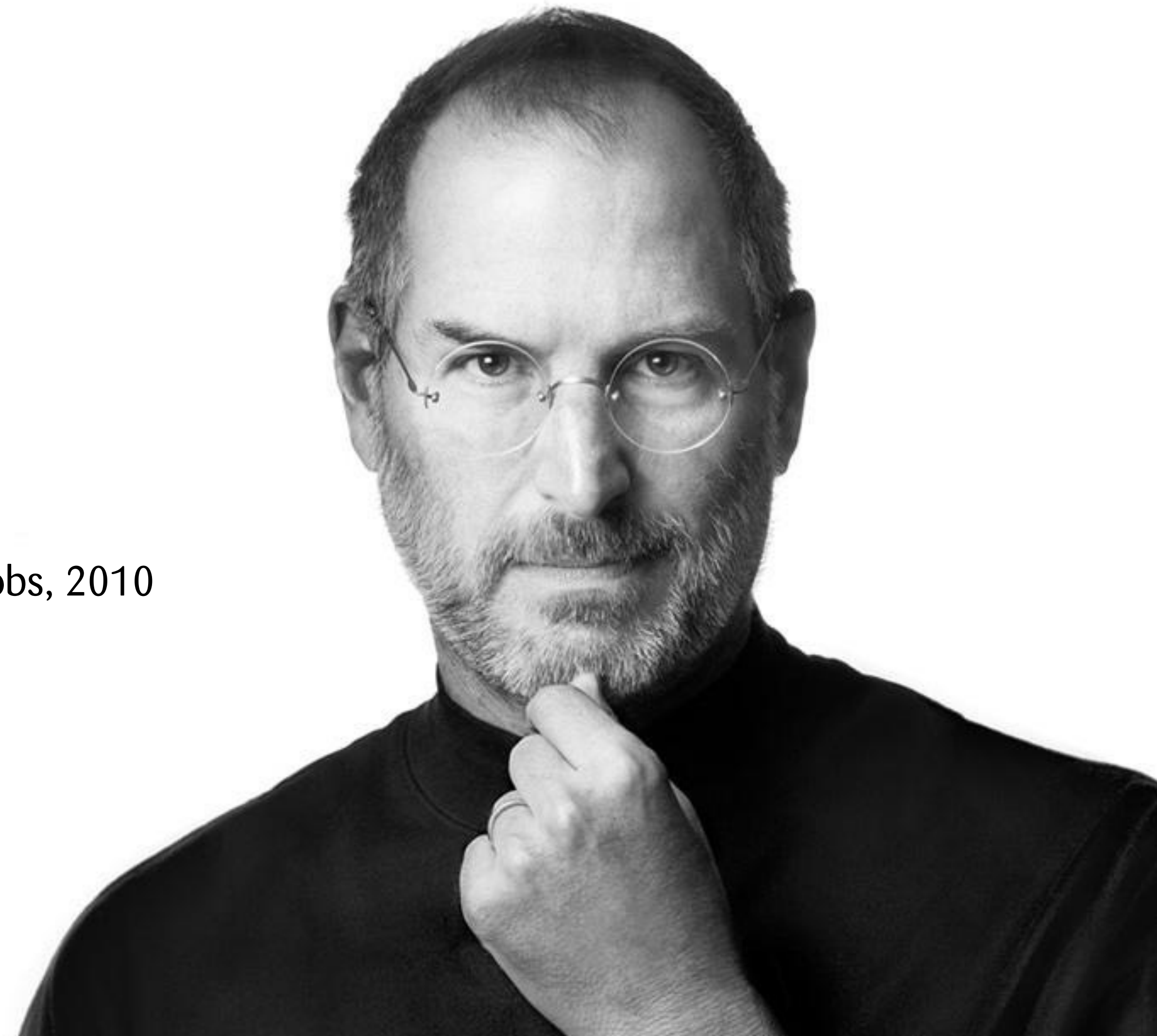
*Sausages, Antennagate, Brexit*

@jorodev

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**“There is no Antennagate!”**

–Steve Jobs, 2010





Is a left-handed person disabled?

Ten percent (10%) of the population are dyslexic; 4% severely so. Dyslexia is identified as a disability as defined in the Equality Act 2010. Many of the dyslexic people across the UK, whether adults or children, are unable to fulfil their potential as a large percentage of the population still do not understand what dyslexia is, the difficulties which the condition presents and do not know how best to support them. Dyslexia is not an obvious difficulty; it is hidden. As a result, dyslexic people have to overcome numerous barriers to make a full contribution to society.

# Dyslexia

(reading disorder)

Text: British Dyslexia Association



Ten percent (10%) of the population are dyslexic; 4% severely so. Dyslexia is identified as a disability as defined in the Equality Act 2010. Many of the dyslexic people across the UK, whether adults or children, are unable to fulfil their potential as a large percentage of the population still do not understand what dyslexia is, the difficulties which the condition presents and do not know how best to support them. Dyslexia is not an obvious difficulty; it is hidden. As a result, dyslexic people have to overcome numerous barriers to make a full contribution to society.

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**Dyslexia**  
(reading disorder)

Text: British Dyslexia Association





**Completely erase disk named "The Mac  
512" (internal drive)?**

**Do It**

**Cancel**





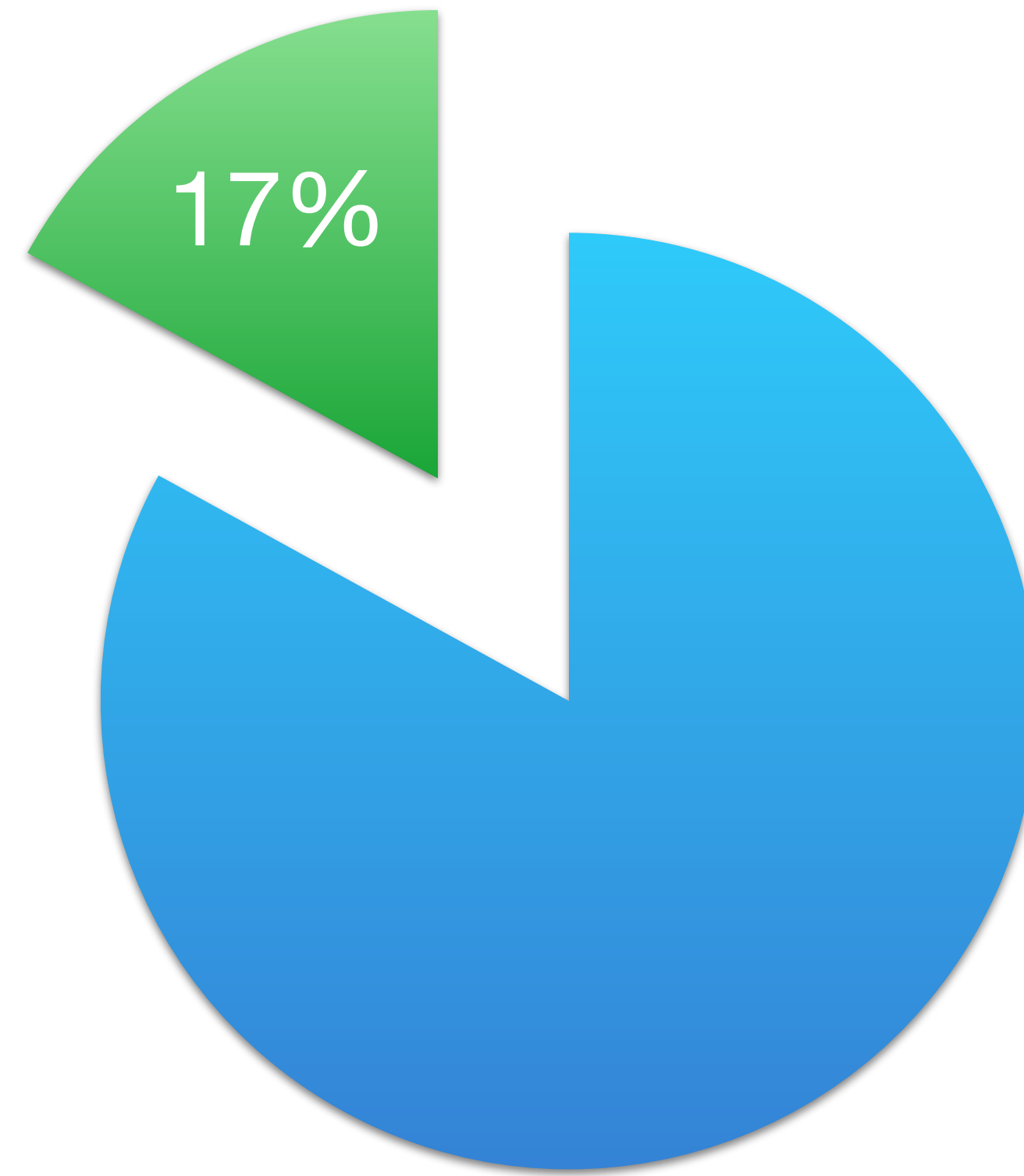
Completely erase disk named "The Mac  
512" (internal drive)?

OK

Cancel







# 17% of U.S. schoolchildren are dyslexic

(source: <https://www.understood.org/en/learning-attention-issues/child-learning-disabilities/dyslexia/dyslexia-by-the-numbers>)

# Is a dyslexic person disabled?



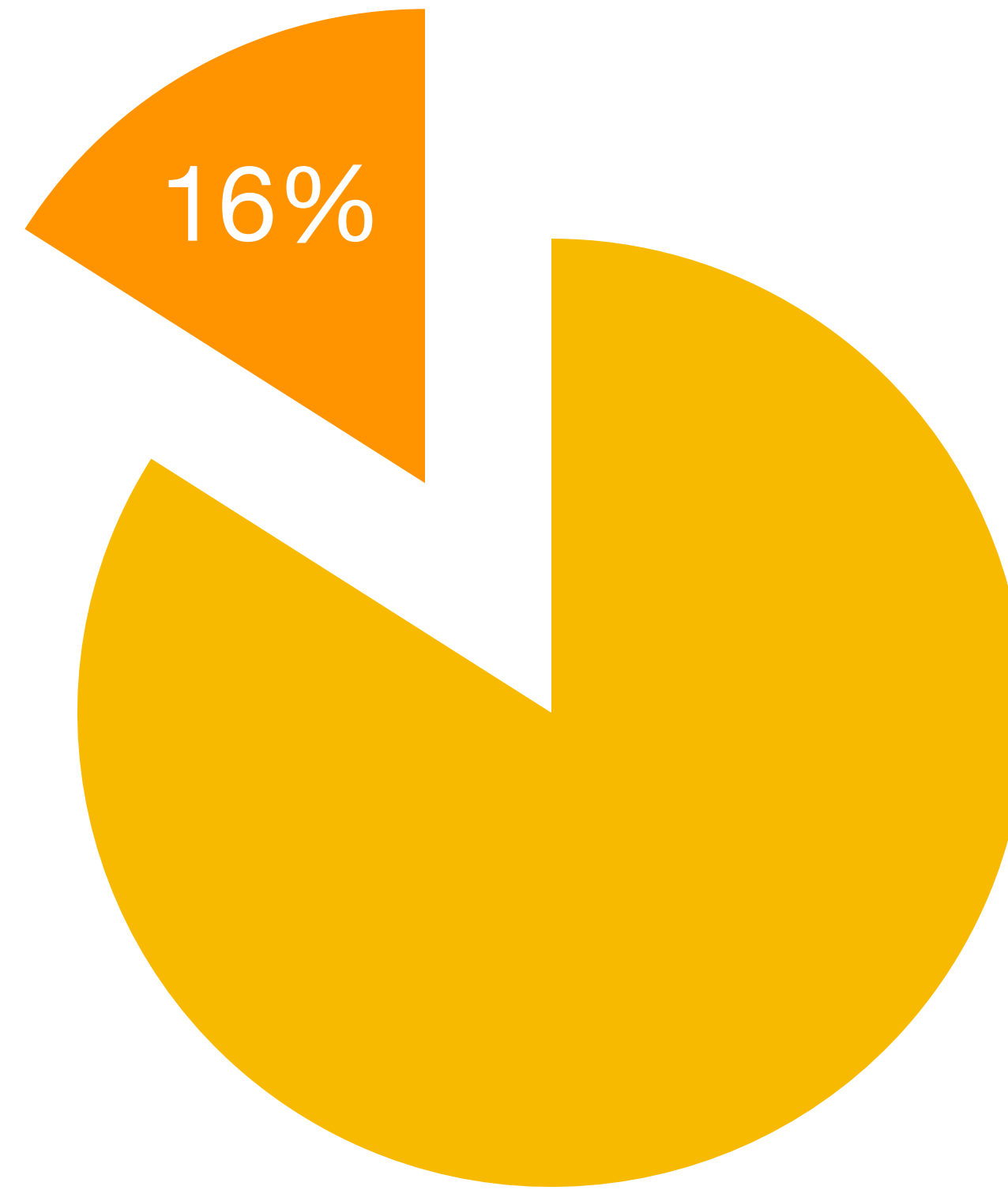


# Neuro-Diversity & Software Development

Dr. Sal Freudenberg

<https://youtu.be/yiGAfjGrrVs>





**16% functionally illiterate adults in the UK  $\approx$  5.2 million**

(source: [http://www.literacytrust.org.uk/adult\\_literacy/illiterate\\_adults\\_in\\_england](http://www.literacytrust.org.uk/adult_literacy/illiterate_adults_in_england))



https://xkcd.com/simplewriter/


https://xkcd.com/simplewriter/ x

JR Zühlke

← → ↻

https://xkcd.com/simplewriter/

☆ ⋮

 **SIMPLE WRITER**  
*WRITE LIKE UP GOER FIVE AND THING EXPLAINER*


**PUT WORDS HERE**  
“Hal~~l~~oa! Below there!”  

When he heard a voice ~~thus~~ calling to him, he was standing at the door of his box, with a ~~flag~~ in his hand, ~~furled~~ round its short ~~pole~~. One would have thought, considering the ~~nature~~ of the ground, that he could not have ~~doubted~~ from what ~~quarter~~ the voice came; but instead of looking up to where I stood on the top of the ~~steep~~ cutting nearly over his head, he turned himself about, and looked down the Line. There was something ~~remarkable~~ in his ~~manner~~ of doing so, though I could not have said for my life what. But I know it was

**YOU USED SOME LESS SIMPLE WORDS**  

Hal~~l~~oa ~~thus~~ ~~flag~~ ~~furled~~ ~~pole~~ ~~nature~~ ~~doubted~~ ~~quarter~~ ~~steep~~ ~~remarkable~~ ~~manner~~ ~~attract~~ ~~foreshortened~~ ~~trench~~  
~~steeped~~ ~~glow~~ ~~sunset~~ ~~shaded~~ ~~repetition~~ ~~idle~~ ~~vague~~ ~~vibration~~ ~~violent~~ ~~pulsation~~ ~~oncoming~~ ~~vapour~~ ~~height~~ ~~rapid~~  
~~skimming~~ ~~landscape~~ ~~refurling~~ ~~inquiry~~ ~~regard~~ ~~motioned~~ ~~level~~ ~~distant~~ ~~dint~~ ~~closely~~ ~~rough~~ ~~zigzag~~ ~~descending~~ ~~notched~~  
~~extremely~~ ~~unusually~~ ~~precipitate~~ ~~clammy~~ ~~oozier~~ ~~recall~~ ~~singular~~ ~~reluctance~~ ~~compulsion~~

# Referendum on the United Kingdom's membership of the European Union

**Vote only once** by putting a cross  in the box next to your choice

Should the United Kingdom remain a member of the European Union or leave the European Union?

**Remain a member of the European Union**


☐

**Leave the European Union**

☐



# Referendum on the United Kingdom's membership of the European Union

**Vote only once** by putting a cross  in the box next to your choice

Should the United Kingdom remain a member of the European Union or leave the European Union?

**Remain** a member of the European Union

☐

**Leave** the European Union

☐

**Is a person who is  
functionally illiterate disabled?**





**Your new Hotmail address:**

**Postcode:**



**Your new Hotmail address:**

**Already Taken**

**Postcode:**

**tommy@hotmail.co.uk**

@jorodev





**Your new Hotmail address:**

**Postcode:**



**Your new Hotmail address:**

**tommy.atkins5@hotmail.co.uk**

**Postcode:**





**Your new Hotmail address:**

**tommy.atkins5@hotmail.co.uk**

**Postcode:**

**Not Valid**

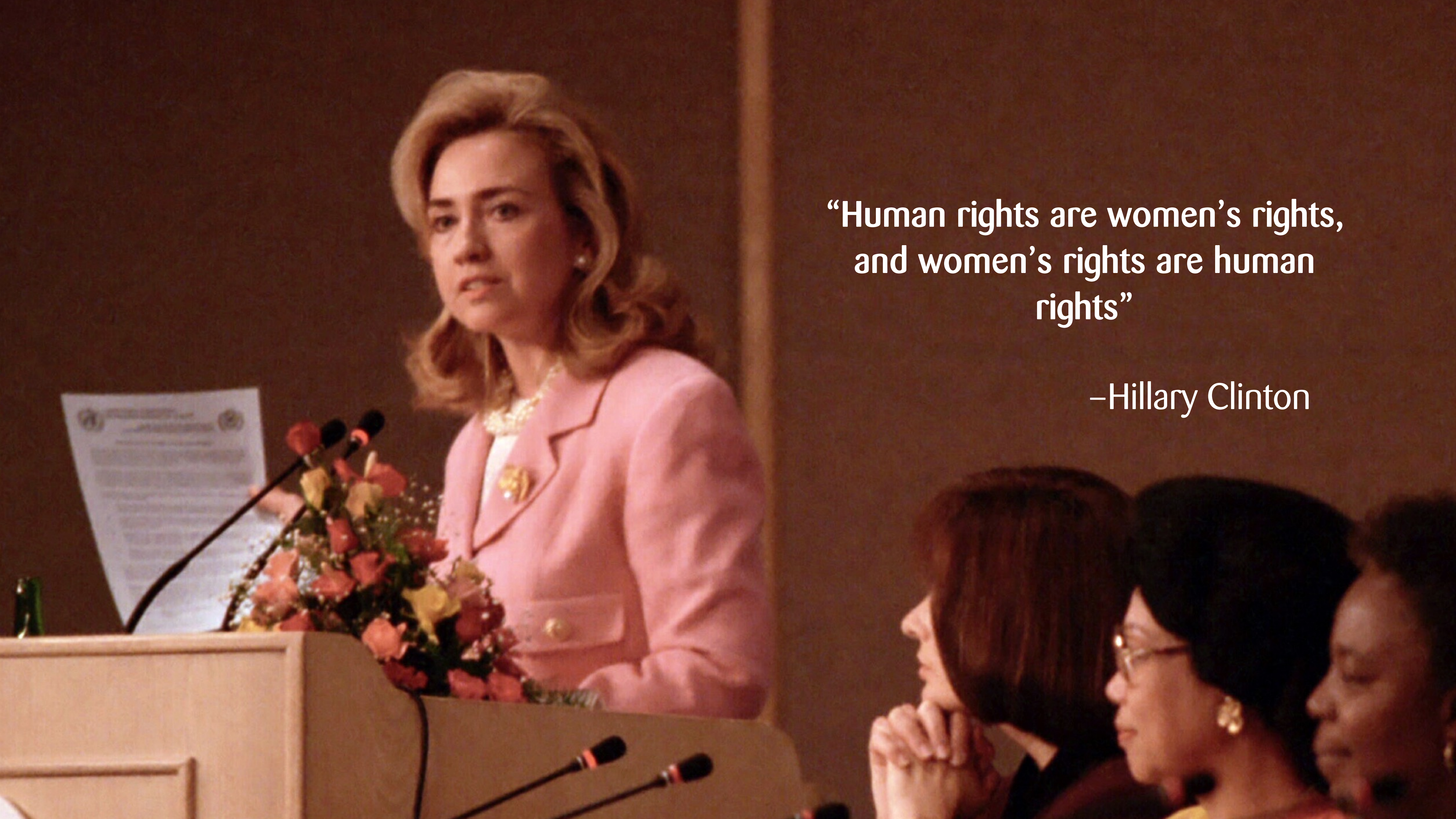
**gui5**

**Is a person who is  
not computer literate disabled?**







A photograph of Hillary Clinton speaking at a podium. She is wearing a pink blazer and a gold necklace. A large bouquet of red and yellow flowers is on the podium. In the foreground, the backs of three audience members' heads are visible. The background is a plain, light-colored wall.

“Human rights are women’s rights,  
and women’s rights are human  
rights”

–Hillary Clinton



# Accessibility



*For the related design concept, see [Universal design](#). For the logical notion, see [Accessibility relation](#). For accessibility on the internet, see [Web accessibility](#).*

*For Wikipedia's accessibility policy, see [Wikipedia:Accessibility](#).*

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# disability

- affects more people than you think
- is caused by barriers that we put in place
- if it doesn't affect you now, it will in the future



**accessibility *is* usability *is* accessibility**

# Sausages, Antennagate, and Brexit

## An introduction to building accessible apps

written and presented by Jonathan Rothwell  
[jonathan.rothwell@zuhlke.com](mailto:jonathan.rothwell@zuhlke.com) / @jorodev

Thank you for coming 💜