

BackSmashers Crowd Alert Project



By Lucas Mah, Joachim
Santiago and Lily Samoyan

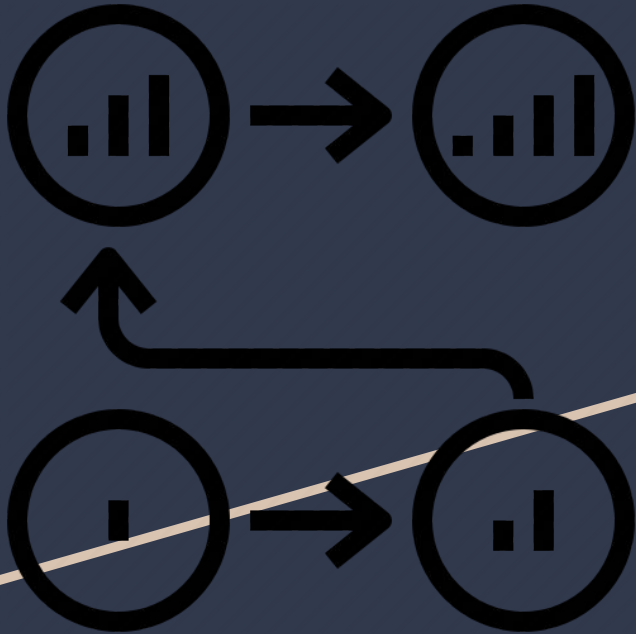


Problem



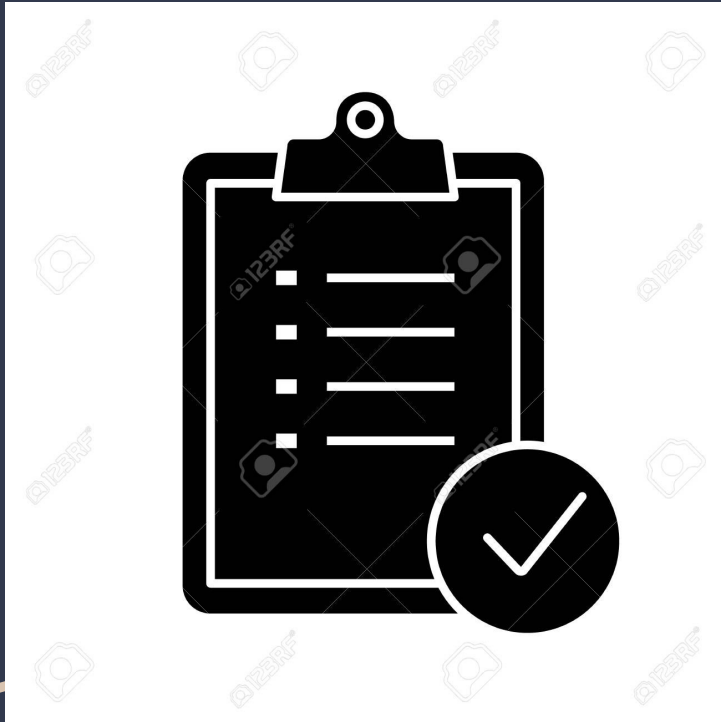
Our group wanted to make a crowd alert app that can detect large groups of people which would support the Center of Disease Control and Prevention guidelines. We added the ability to upload a photo or take a photo and decide whether a crowd was detected or not based on whether the tags detected a key word such as “people”. People who ignore CDC guidelines motivated us to create this project because they were adding fuel onto the fire by spreading the virus at a much more rapid pace.

Approach



Before starting our app, our group held zoom calls to brainstorm and come up with ideas on how we would go about working on our project. We decided that we could have both an english and spanish version for our app to appeal to a larger audience. As we worked on the coding blocks of our app, we eventually got stuck on what “tags” meant and how to utilize it. We then scheduled a zoom call with Professor Bulusu and a T.A to sort it out.

Tasks



We divided up the tasks in our group. Lily did most of the coding parts of the app to complete the required functions of the app like the crowd alert function after uploading/taking a photo and touched up the translations. Joachim did most of the UI aspects of the app and translated the english speech to spanish, while Lucas created the presentation part of the project and also assisted in brainstorming ideas.

Heart-Humanity



We learned in more detail about what the different code blocks meant. We experimented throughout the process to see what works which made us more comfortable on Thinkable in general. For example, we learned how to use the image recognizer function in Thinkable.

Finally, we learned how important it is to communicate among the group members and instructors for assistance and new ideas. The people that would benefit from this app is anyone who is unsure whether an image/photo is considered to be a crowd or not which will help protect them against COVID-19 more by mitigating the spread/contact of it.

Future use

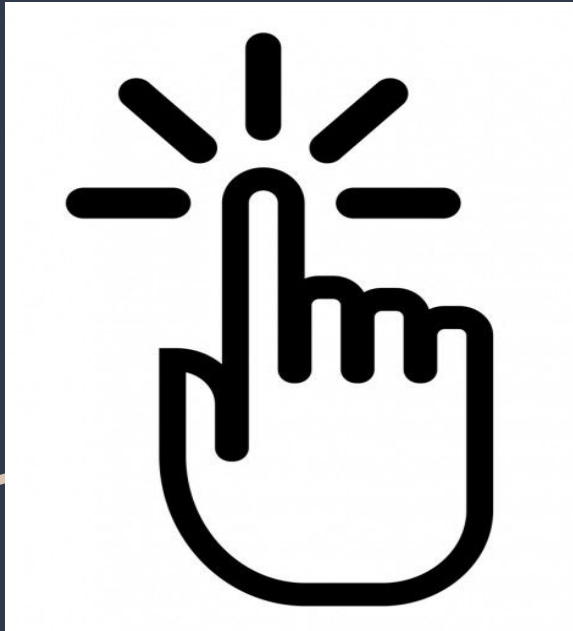


Although this app was initially designed in response to the COVID-19 pandemic, our app could still have use long past when the vaccine is introduced.

Not everyone will get the vaccine when it is introduced and will still choose to follow social distancing guidelines. So our app could still be useful then.

Our app could also be repurposed for identifying other entities in pictures while still maintaining its bi-lingual feature

Project Details



Project Assignment: Option 1: Crowd Alert... Crowds are dangerous right now! We need an app to detect a large group of people.

Project Statement: Many people have been gathering in large groups regardless of the current pandemic. This app will be used to encourage limited gatherings and mitigate the spread of COVID. It will start keeping people in society safe from those who may have gathered in groups without them knowing, therefore minimizing the infection rate of COVID-19. This can be used in many locations, and the purpose is to identify people in groups in multiple places.

Thunkable Link:

<https://x.thunkable.com/copy/fff30739b99f8ce2722e20482939b4d9>

- Design
- Blocks
- Control
- Logic
- Math
- Text
- Lists
- Color
- Device
- Objects
- Variables
- Functions
- Text_To_Speech1
- Photo_Library1
- Image_Recognizer1
- Camera1
- Caduceus1
- TOP LABEL
- Caduceus2
- Crowd Alert/Caduceus top
- Image That Pops Up
- Caption/Photo Desc
- Caption/Photo Label
- Column2
- Feedback From Photo
- Take Picture

```

when Take Picture Click
do
  in Camera1 call take photo
  with outputs
    Photo
    DidUserCancel
    Error
  then do
    from Feedback From Photo set Visible to true
    from Image That Pops Up set Picture to Photo
    in Image_Recognizer1 call Upload
    image Photo
    with outputs
      tags
      description
      confidenceLevel
      error
    then do
      from Caption/Photo Desc set Text to description
      from Caption/Photo Label set Text to join tags
      if does description contain people
      do
        from Caption/Photo Desc set Color to red
        in Text_To_Speech1 call Speak
        text Unsafe, this gathering does not follow CDC guide...
        wait 1 seconds
        in Text_To_Speech1 call Speak
        text Inseguro, esta reunión sigue las reglas de las CDC
      else if not does description contain people
      do
        from Caption/Photo Desc set Color to green
        in Text_To_Speech1 call Speak
        text SAFE, this gathering follows CDC guidelines.
        wait 1 seconds
        in Text_To_Speech1 call Speak
        text SEGURO, esta reunión sigue las reglas de los CDC
    end
  end
end
  
```

```

when Upload Picture Click
do
  in Photo_Library1 call select photo
  with outputs
    Photo
    DidUserCancel
    Error
  then do
    from Feedback From Photo set Visible to true
    from Image That Pops Up set Picture to Photo
    in Image_Recognizer1 call Upload
    image Photo
    with outputs
      tags
      description
      confidenceLevel
      error
    then do
      from Caption/Photo Desc set Text to description
      from Caption/Photo Label set Text to join tags
      if does description contain people
      do
        from Caption/Photo Desc set Color to red
        in Text_To_Speech1 call Speak
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        wait 1 seconds
        in Text_To_Speech1 call Speak
        text Inseguro, esta reunión sigue las reglas de las C...
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      do
        from Caption/Photo Desc set Color to green
        in Text_To_Speech1 call Speak
        text SAFE, this gathering follows CDC guidelines
        wait 1 seconds
        in Text_To_Speech1 call Speak
        text SEGURO, esta reunión sigue las reglas de los CDC
      end
    end
  end
end
  
```

Talking: Gabriel Joachi...