

A stylized illustration of a diverse crowd of people, all wearing face masks. The people are depicted in various colors (orange, teal, brown, blue) and are shown from the chest up, looking in different directions. The background is a solid dark blue.

FACE MASK DETECTION SYSTEM

USER MANUAL

Ananya Adivi

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01 ACKNOWLEDGEMENTS

First of all, I would just like to say that I am grateful to everyone who has helped me gain the opportunity to create this project and be able to enhance my own skills. Thank you to my parents, mentors, fellow peers (and YouTube videos) for helping me work towards achieving greater things.



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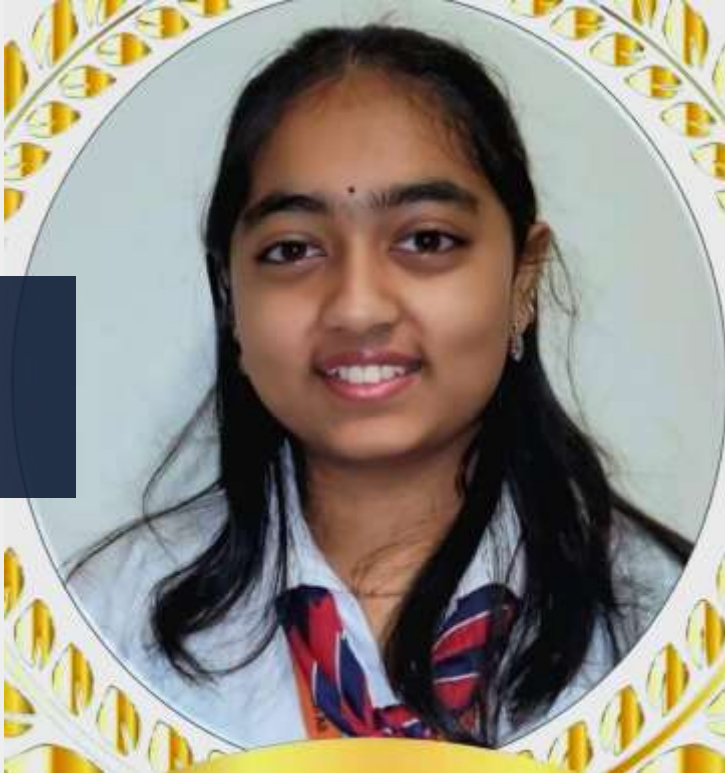
ABOUT ME!

Hello!

My name is Ananya Adivi and I'm 17 years old,
and I'm currently in Year 12.
I'm from Hyderabad, India, but I'm brought up
in Dubai, UAE.

I have a number of interests like Art and
Reading, but Coding is something I put a lot of
effort in learning.

This opportunity has led me to learn various
things about AI and how to implement it in
creating applications, like the one I've focused
on for this project.



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INTERNSHIP JOURNEY

The internship with Clevered has been very helpful in venturing deep into the world of AI.

I've learnt many things, from voice recognition to object detection. With the tools and aid provided in the mentor sessions, I was able to enquire and learn many things that led me to create my project.

The Clevered logo is a teal circle with the word "clevered" in white lowercase letters. A dark blue horizontal bar is positioned behind the right side of the circle.

clevered

04 | ABOUT MY APPLICATION

My app focuses on Face Mask Detection. I've used object detection as my subject to implement. Face Mask Detection caught my eye, as it was a necessary system during COVID-19. I was always intrigued to find out how the system was created, and this project portrays my interest in the subject.

Main Menu

My app consists of two main parts:

- Detecting if a person in an image is wearing a mask
- Live face mask detection

These two functions are important to my project as they showcase the main goal of the project. They are very straightforward and easy to use.

The background image shows a crowd of people, likely in a public space, with various face mask detection overlays. Green bounding boxes around faces are labeled "Wearing Mask" in green text. A red bounding box on the left is labeled "Not Wearing Mask" in red text. The overall scene is dimly lit, suggesting an indoor or evening setting.

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HOW TO OPERATE MY APPLICATION

Function 1 - DETECT MASK
Function 2 - LIVE DETECTION
Demo

FUNCTION 1

DETECT MASK



This function takes the selected image and runs the code written to detect the mask

FUNCTION 2

REAL TIME DETECTION



This function opens the web camera from the user's device and detects whether the person is wearing a face mask or not.

It is important to note that the code does not work properly if there is no proper lighting*

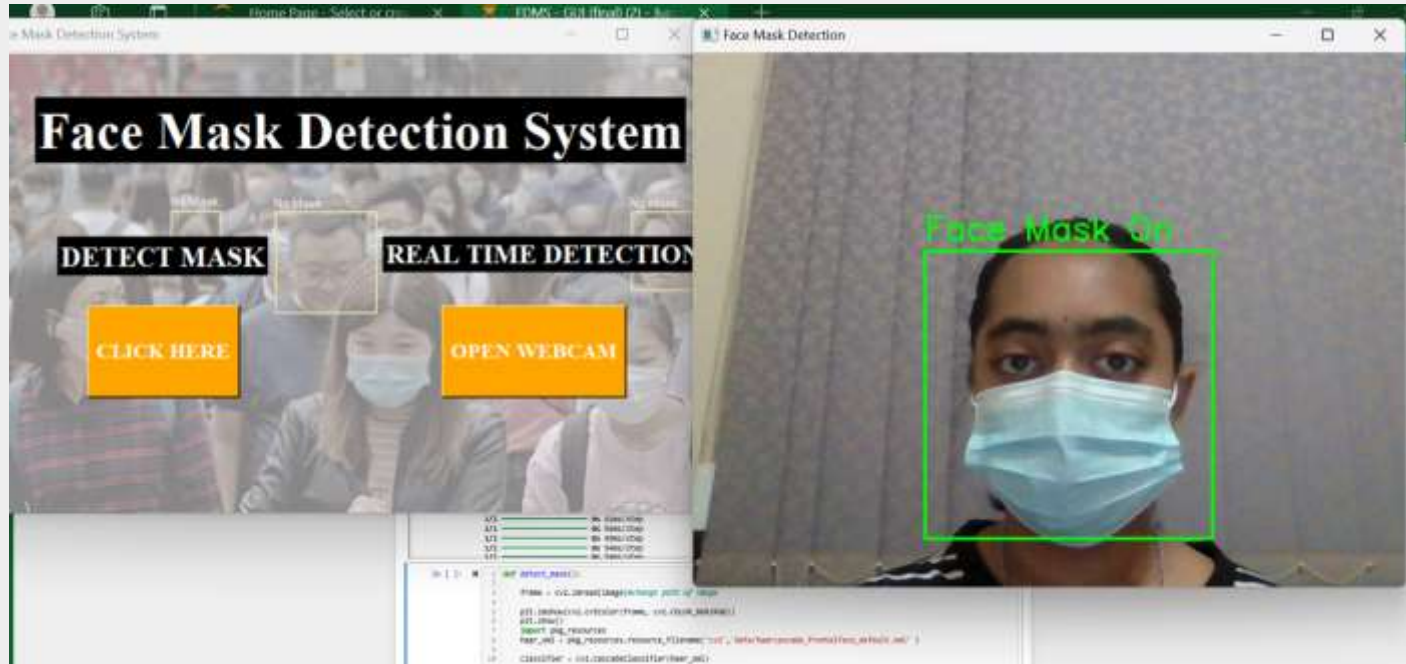
DEMO - REAL TIME DETECTION

WITHOUT MASK



DEMO - REAL TIME DETECTION

WITH MASK



DEMO - DETECT MASK

USING AN IMAGE - WITHOUT MASK



OUTPUT:



IMAGE CHOSEN:



DEMO - DETECT MASK

USING AN IMAGE - WITH MASK

OUTPUT:

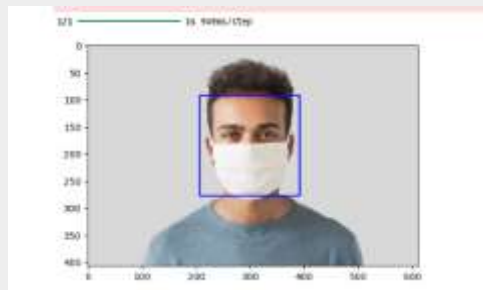
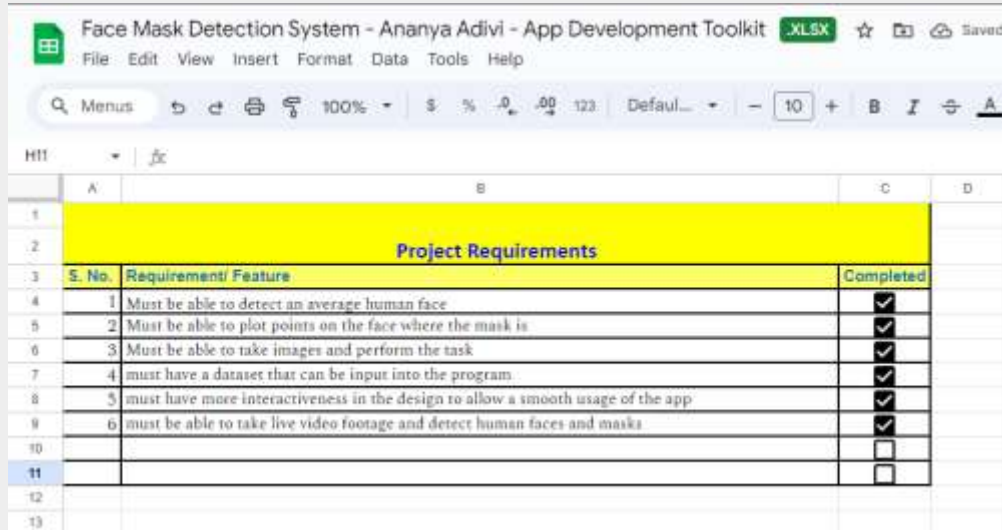


IMAGE
CHOSEN:



06 | APP DEVELOPMENT TOOL-KIT

PROJECT REQUIREMENTS & DESIGN USER INTERFACE



S. No.	Requirement/ Feature	Completed
1	Must be able to detect an average human face	<input checked="" type="checkbox"/>
2	Must be able to plot points on the face where the mask is	<input checked="" type="checkbox"/>
3	Must be able to take images and perform the task	<input checked="" type="checkbox"/>
4	must have a dataset that can be input into the program.	<input checked="" type="checkbox"/>
5	must have more interactiveness in the design to allow a smooth usage of the app.	<input checked="" type="checkbox"/>
6	must be able to take live video footage and detect human faces and masks	<input checked="" type="checkbox"/>
		<input type="checkbox"/>
		<input type="checkbox"/>

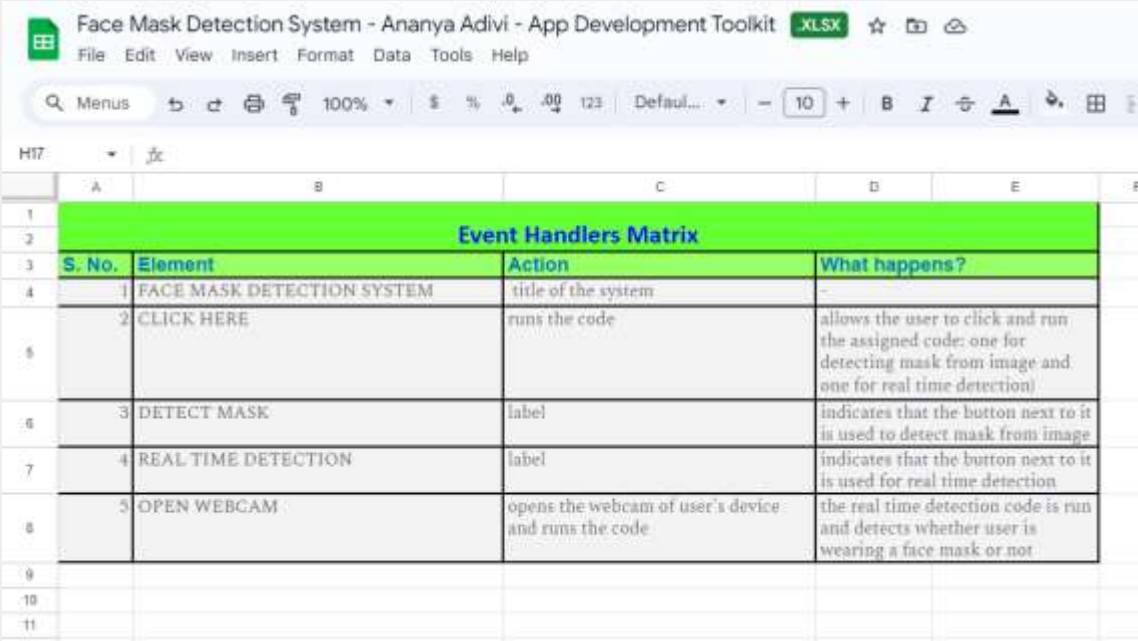


Link for Tool-Kit spreadsheet:

<https://docs.google.com/spreadsheets/d/1AC4uODQuCjYJdXQMbvCZCrb-XGS6ODy7/edit?usp=sharing&ouid=115856861494110766051&rtpof=true&sd=true>

06 | APP DEVELOPMENT TOOL-KIT

EVENT HANDLERS



The screenshot shows a Google Spreadsheet interface. The title bar reads 'Face Mask Detection System - Ananya Adivi - App Development Toolkit' with an '.XLSX' icon. The menu bar includes 'File', 'Edit', 'View', 'Insert', 'Format', 'Data', 'Tools', and 'Help'. The toolbar shows various icons for editing and viewing, including a search bar with 'Menus', zoom level '100%', and font settings. The spreadsheet content includes a table titled 'Event Handlers Matrix' with the following data:

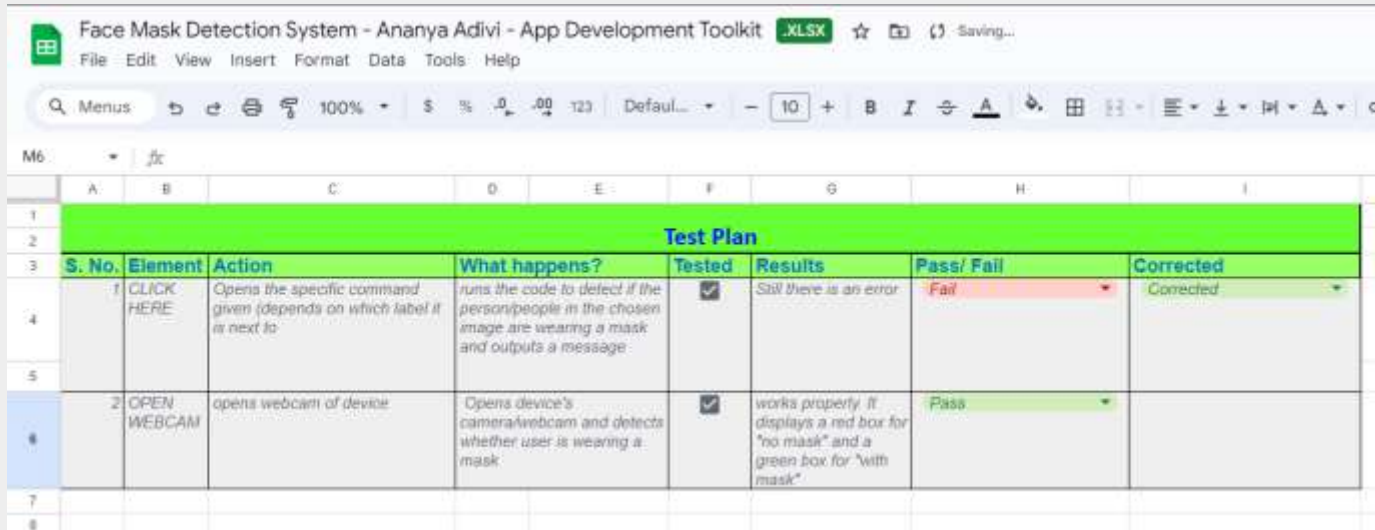
S. No.	Element	Action	What happens?
1	FACE MASK DETECTION SYSTEM	title of the system	-
2	CLICK HERE	runs the code	allows the user to click and run the assigned code: one for detecting mask from image and one for real time detection
3	DETECT MASK	label	indicates that the button next to it is used to detect mask from image
4	REAL TIME DETECTION	label	indicates that the button next to it is used for real time detection
5	OPEN WEBCAM	opens the webcam of user's device and runs the code	the real time detection code is run and detects whether user is wearing a face mask or not

Link for Tool-Kit spreadsheet:

<https://docs.google.com/spreadsheets/d/1AC4uODQuCjYJdXQMbvCZCrb-XGS6ODy7/edit?usp=sharing&ouid=115856861494110766051&rtpof=true&sd=true>

06 | APP DEVELOPMENT TOOL-KIT

TEST PLAN



The screenshot shows a Google Spreadsheet interface. The title bar reads 'Face Mask Detection System - Ananya Adivi - App Development Toolkit .XLSX'. The menu bar includes File, Edit, View, Insert, Format, Data, Tools, and Help. The toolbar shows various icons for editing and viewing, including a search bar with 'Menus', zoom in/out buttons, a percentage dropdown set to 100%, and a font size dropdown set to 10. The spreadsheet grid has columns A through I and rows 1 through 8. Row 1 is highlighted in green and contains the text 'Test Plan' in blue. Row 2 is a header row with the following columns: S. No., Element, Action, What happens?, Tested, Results, Pass/ Fail, and Corrected. Row 3 contains the first test case: S. No. 1, Element CLICK HERE, Action Opens the specific command given (depends on which label it is next to), What happens? runs the code to detect if the person/people in the chosen image are wearing a mask and outputs a message, Tested (checked), Results Still there is an error, Pass/ Fail Fail, and Corrected Corrected. Row 4 contains the second test case: S. No. 2, Element OPEN WEBCAM, Action opens webcam of device, What happens? Opens device's camera/webcam and detects whether user is wearing a mask, Tested (checked), Results works properly! It displays a red box for "no mask" and a green box for "with mask", Pass/ Fail Pass, and Corrected (empty).

S. No.	Element	Action	What happens?	Tested	Results	Pass/ Fail	Corrected
1	CLICK HERE	Opens the specific command given (depends on which label it is next to)	runs the code to detect if the person/people in the chosen image are wearing a mask and outputs a message	<input checked="" type="checkbox"/>	Still there is an error	Fail	Corrected
2	OPEN WEBCAM	opens webcam of device	Opens device's camera/webcam and detects whether user is wearing a mask	<input checked="" type="checkbox"/>	works properly! It displays a red box for "no mask" and a green box for "with mask"	Pass	

Link for Tool-Kit spreadsheet:

<https://docs.google.com/spreadsheets/d/1AC4uODQuCjYJdXQMbvCZCrb-XGS6ODy7/edit?usp=sharing&ouid=115856861494110766051&rtpof=true&sd=true>

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CONTACT ME!

If you have any further queries or suggestions, please contact me via the following email:

ananya_adivi@outlook.com



THANK YOU! :)