

Sym✓

Deliverable 8 Presentation

CS 692 - Computer Science Project II
Professor Henry Wong

Team Member Roles



Briana Figueroa: Frontend Developer/Designer

- Coded several pages of the application
- Designed page layouts and various graphics
- Made our web application mobile-friendly



Swapnil Kadekar: Machine Learning Engineer

- Developed original machine learning algorithm
- Designed backend architecture
- Researched and formulated datasets for training, and performed statistical analysis



Morgan Franklin: Cloud Engineer

- AWS Administrator
- Provisioned code collaboration and cloud services
- Documented test cases and co-authored technical paper



Alan Singleton: Full-Stack Developer

- Incorporated APIs such as Google Maps and Dialogflow
- Optimized application code for modularity
- Developed logic for advance prediction pages



Sayema Islam: Product Owner/Lead Developer

- Originator of SymCheck
- Reviewed code for accuracy and assisted with debugging
- Authored technical documentation and maintains project's GitHub repository and Wiki



Jasmine Washington: Scrum Master/Project Manager

- Led team meetings and kept team on task
- Assisted with frontend and backend development
- Co-authored technical paper and maintains project's GitHub repository and Wiki

Agenda



Team
Members



Project
Description

Requirements
Personas



Design
Architecture

Front-end
Technologies
AWS Services
Back-end
Technologies



Sprint 1-7
Recap

Statistics
Artifacts
Burndown Charts
Deliverables



Sprint 8

Statistics
Artifacts
Test Cases
Burndown Chart
Deliverables



Retrospectives



GitHub Wiki



Conclusion

Project Description

What is SYM✓?



- An image-based, self-diagnosis web application
- A patient's uploaded image is analyzed by an original algorithm
 - This algorithm was developed, tested, and is run using TensorFlow's Keras library
- SymCheck diagnoses two (2) illnesses: chickenpox (*varicella*) and pink eye (*conjunctivitis*)
- SymCheck helps in saving patients time by avoiding potentially unnecessary healthcare visits
- The use of SymCheck can help in mediating the spread of COVID-19 by reducing traffic in Urgent Care and other healthcare facilities
- Application does not require account creation or login, nor answering long series of monotonous questions (image-based)

Persona 1:

Cindy the Single, Working Mother



- **Background Profile:**

- Cindy is a 32-year old single mother with 2 boys: Adrian (4 years old) and Simon (6 years old). She also has a full-time job as a business analyst, working around 80 hours a week.
- Simon has recently developed a rash on his chest. Cindy called the family's pediatrician to seek a quick diagnosis, but they are reluctant to diagnose him without a physical visit.

- **How can SymCheck help?**

- Cindy could very much use an application to get a cursory diagnosis of her son's symptoms from the comfort of her own home or work-desk. This would allow her to potentially save an unnecessary visit and follow recommendations listed on the SymCheck site, or even shorten a visit to the doctor by simply having him verify the result in confidence.

Persona 2:

Ryan the overwhelmed college student

- **Background Profile:**
 - Ryan is a junior at Pace University. Not only is he swarmed with assignments, but he has also just started to notice strange skin lesions on his arm. Although he wants to get his skin checked, he just doesn't have time to waste in his schedule to check in to a doctor's office or urgent care facility if it is not necessary.
- **How can SymCheck help?**
 - Ryan needs a cursory method of diagnosis for his skin abnormality, *without* having to pay a physical visit to some medical facility.
 - Our SymCheck application can solve this dilemma, and if the application identifies his lesions as to being serious or even life-threatening, it can recommend that he definitely needs to prioritize a visit to the doctor or nearest hospital.



Persona 3:

Lisa the Caring Nurse



- **Background Profile:**

- Lisa has 15 years of experience as a Nurse at various urgent care facilities. Now, during global COVID-19 pandemic, many of her patients complain to her about the waiting period to see a doctor.

- **How can SymCheck help?**

- In order to help minimize the number of patients in the office, Lisa seeks an application to help her patients determine whether or not their illness symptoms require immediate medical attention.
- Given that Lisa wishes to refer her patients to a reliable, and convenient source of diagnosis, the SymCheck application could potentially offer guidance in determining what a patient's symptoms may indicate and thus provide recommendations for at-home remedies.
- The use of SymCheck could thus also help in mediating the spread of COVID-19 by reducing the traffic in Urgent Care facilities.

SymCheck Requirements

Upload Image

- .png and .jpg/.jpeg files only

Receive Image-based Results

- Quicker results for the patient

Receive Advanced Results

- More accurate results for the patient

Find Nearest Emergency Room

- Accurate geolocation for nearby hospitals/healthcare facilities

Interactive Chatbot

- Quick replies to commonly asked questions

Design Architecture: *Front-end Technologies & AWS Services*

Front-end Technologies



- Presentation and dynamic coding languages that affect the content, style and interactivity of our web application



Google Maps

- An API that creates a custom and searchable map based on a user's location



Dialogflow

- A natural language AI platform that makes it easy to design and integrate a chatbot into a web application

AWS Services



AWS Elastic Beanstalk

- Easy service for deploying and scaling web applications



AWS Cloud9

- Cloud-based integrated development environment (IDE) that allows us to write, run, and debug SymCheck



AWS Certificate Manager (ACM)

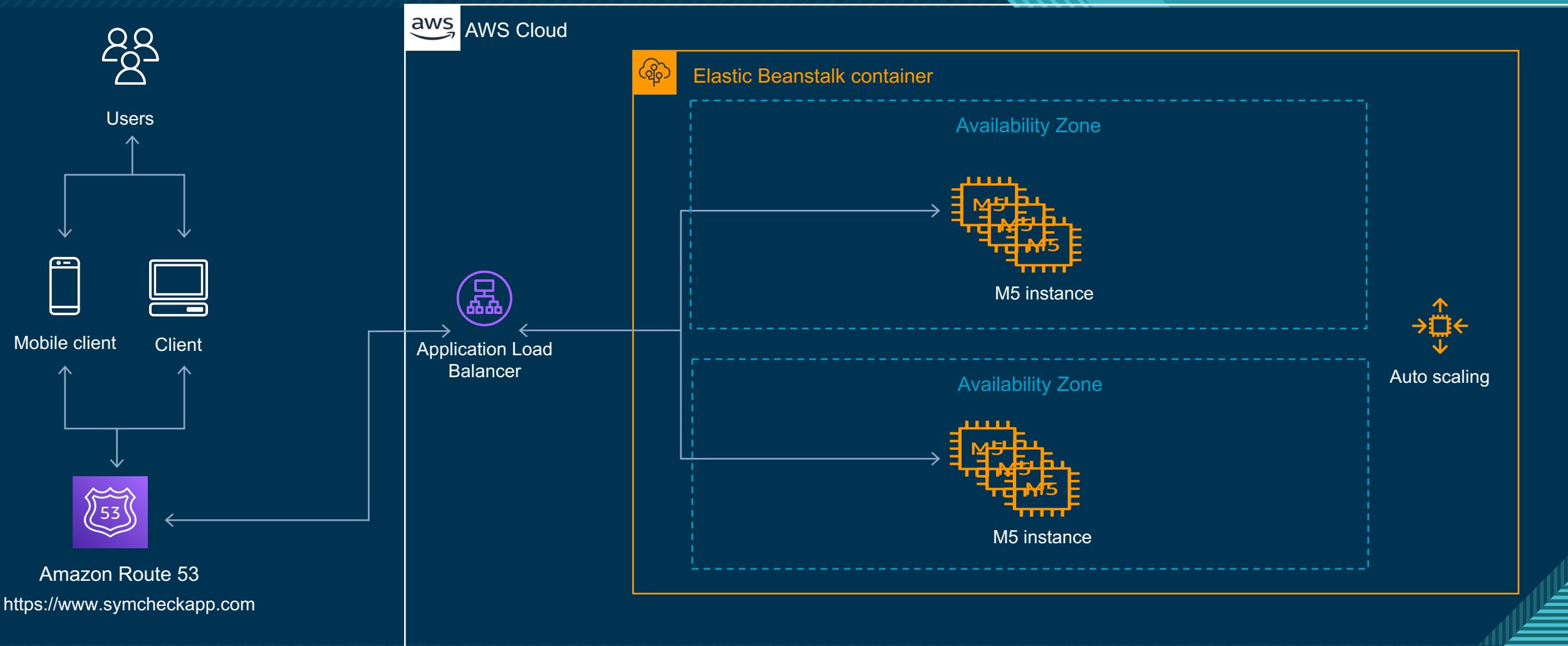
- A service that allows us to easily provision and deploy Secure Sockets Layer/Transport Layer Security (SSL/TLS) certificates.



Amazon Route 53

- A highly available and scalable cloud Domain Name System (DNS) web service.
- www.symcheckapp.com

SymCheck AWS Diagram

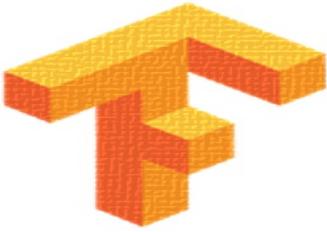


Design Architecture: *Back-end Technologies*

Back-end Technologies

django

- Server-side web application framework that is written in Python
- Allows simple design and rapid development



TensorFlow

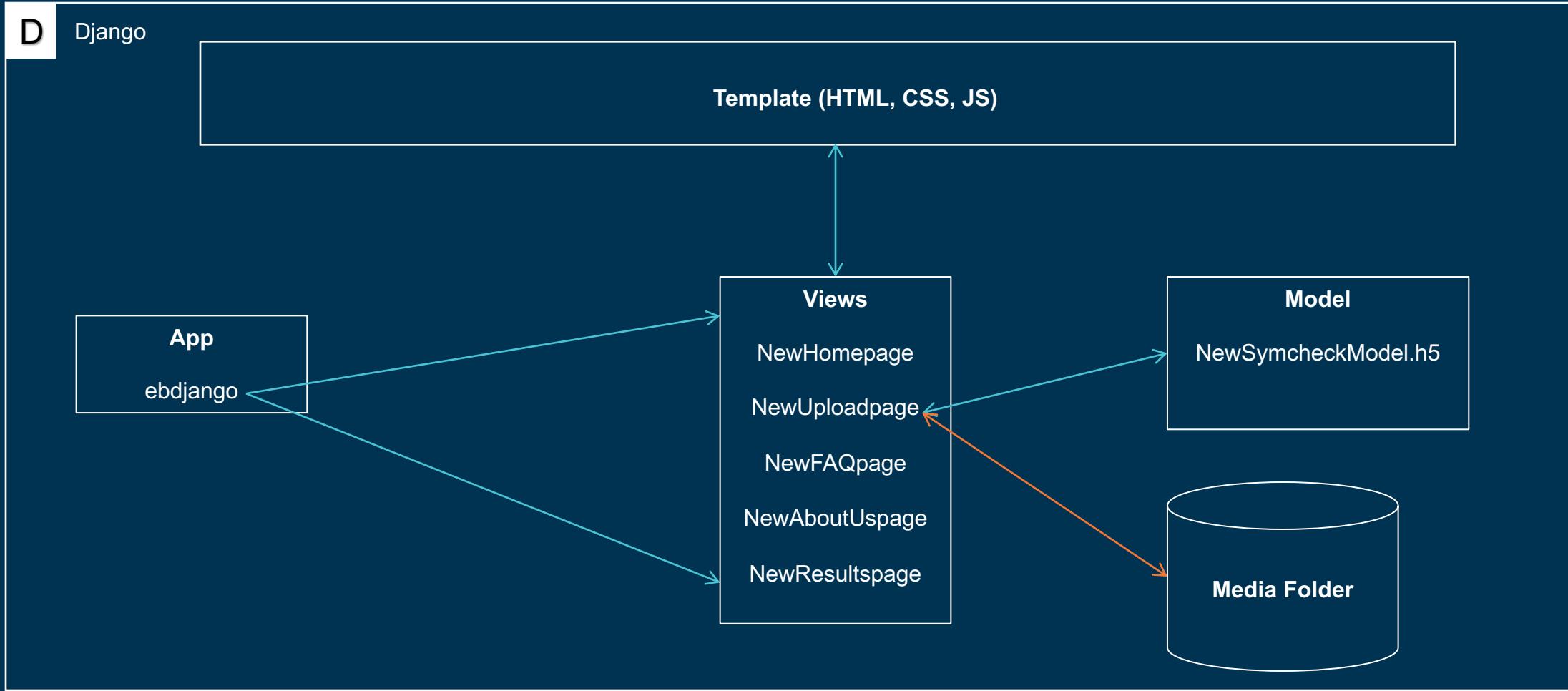
- Open-source library for various machine learning models
- Uses Python for its frontend API and executes applications in C++



Keras

- A high-level API embedded within TensorFlow
- User-friendly, and provides "out-of-the-box" implementations of common network structures

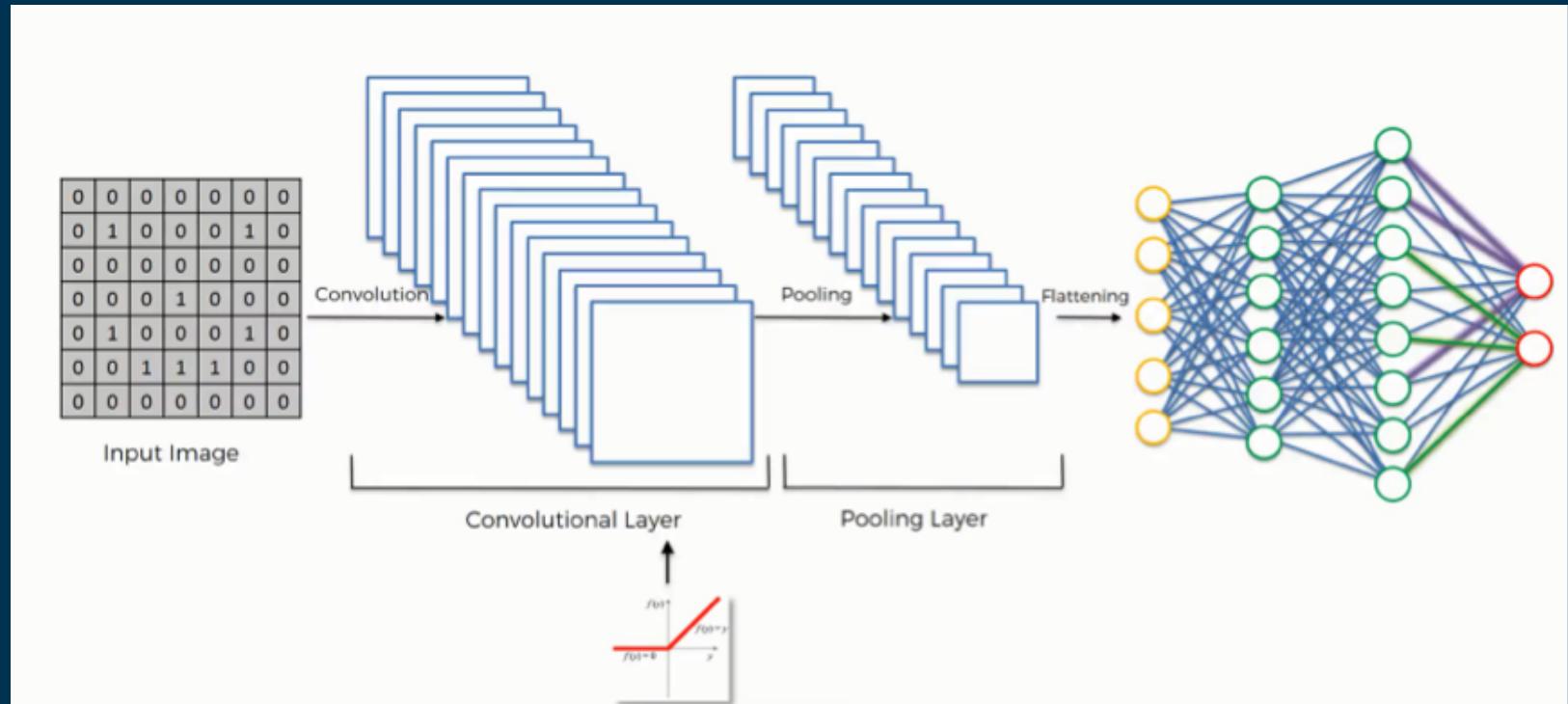
SymCheck Django Diagram



Machine Learning Algorithm

CNN -

- A Convolutional Neural Network (CNN) is a Deep Learning algorithm which can take in an input image, assign importance like learnable weights and biases to various aspects in the image and be able to differentiate one from the other.
- The pre-processing required in a CNN is much lower as compared to other classification algorithms. with enough training, CNN have the ability to learn the characteristics.



Model Evaluation



- Model Evaluation is an integral part of the model development process. It helps to find the best model that represents our data and how well the chosen model will work in the future.
- Training and Validation accuracy
 - Training – 85.63%
 - Validation – 88.68%

Sprint 1-3 Recap

100%

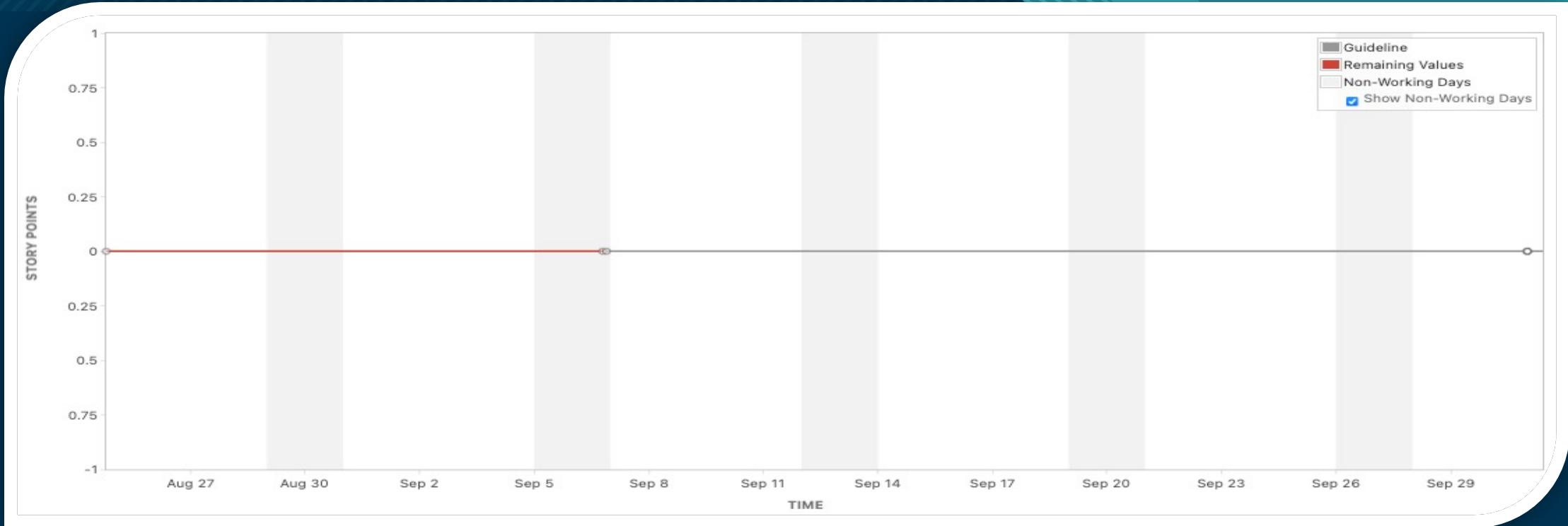
Completed Artifacts

Sprint 1 Artifacts

Type	Key	Summary	Story Points	Priority	Status
Task	<u>HID-46</u>	Create a significant business application idea	N/A	Highest	Done
Task	<u>HID-1</u>	Project Survey	N/A	Highest	Done
Task	<u>HID-49</u>	Establish weekly meetings	N/A	Medium	Done
Task	<u>HID-48</u>	Establish team roles	N/A	Medium	Done
Task	<u>HID-47</u>	Set up development tools (GitHub and Jira)	N/A	Medium	Done
Task	<u>HID-45</u>	Create Deliverable 1 Presentation	N/A	Medium	Done

- We established team dynamics and our application idea

Sprint 1 Burndown Chart



- We did not have any user stories documented

100%

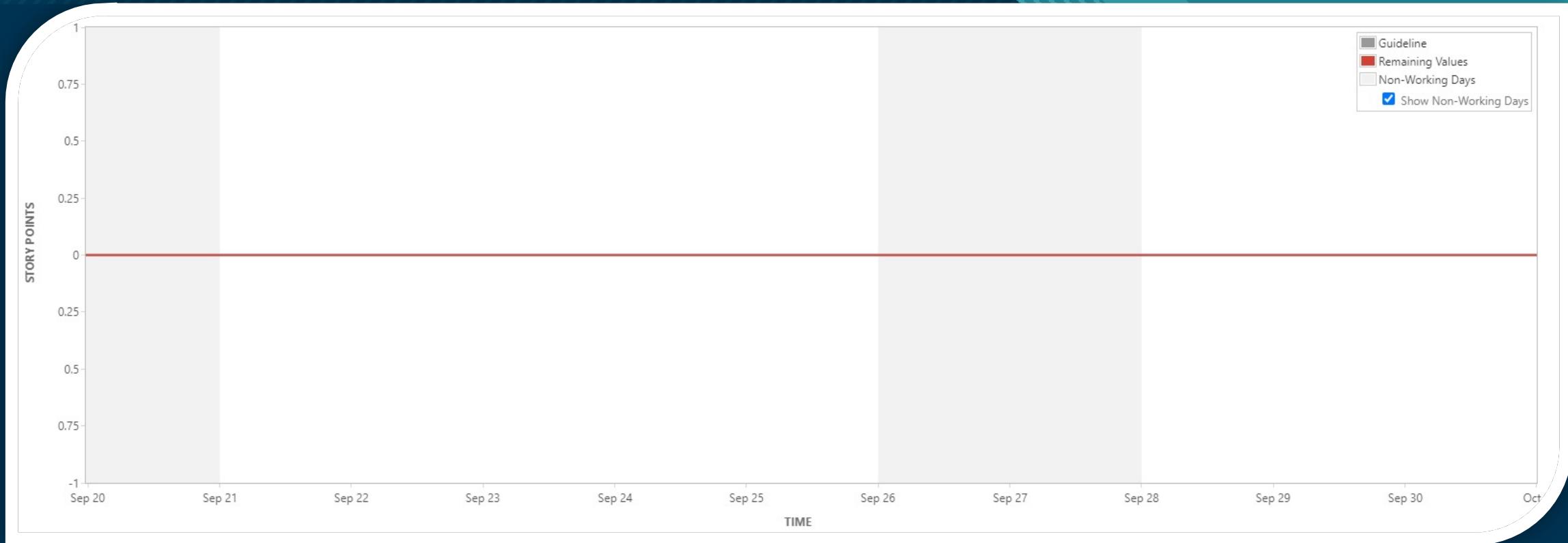
Completed Artifacts

Sprint 2 Artifacts

Type	Key	Summary	Story Points	Priority	Status
Task	<u>HID-13</u>	Create mock-up web designs	N/A	Highest	Done
Task	<u>HID-12</u>	Complete Deliverable 2 PowerPoint Presentation	N/A	High	Done
Task	<u>HID-11</u>	Complete Acceptance Criteria	N/A	High	Done
Task	<u>HID-10</u>	Research Django Framework	N/A	High	Done
Task	<u>HID-9</u>	Complete Test Cases	N/A	High	Done
Task	<u>HID-8</u>	Complete User Stories	N/A	High	Done

- We documented our user stories, acceptance criteria and test cases
- We drafted our first SymCheck designs

Sprint 2 Burndown Chart



- We did not have any user stories documented

Sprint 3 Artifacts

67%

Completed Artifacts

4

Velocity

Type	Key	Summary	Story Points	Priority	Status
Story	HID-44	As a patient, I want to get in touch with the creators of the SymCheck application so that I can provide the creators of the SymCheck application with suggestions/comments, ask them questions, commend them for their product, etc.	2	Medium	Done
Story	HID-36	As a patient, I want to return to the homepage so that I can re-read the SymCheck mission statement, disclaimer, etc.	1	Medium	Done
Story	HID-35	As a patient, I want to find the nearest emergency room so that I can seek immediate medical condition for what I deem to be an extremely critical/dire/time-sensitive condition	3	Medium	Moved to Sprint 4
Story	HID-32	As a patient, I want to be sure that my image has been uploaded successfully so that I can be sure that the image will be processed by the application so that I can receive recommendations for my care	3	Medium	Moved to Sprint 4
Story	HID-31	As a patient, I want to upload a photo/image of my symptom/affected area/illness so that the SymCheck application can diagnose me and I can gain insights as to what I might be afflicted with	3	Medium	Moved to Sprint 4
Story	HID-30	As a patient, I want to be diagnosed by the SymCheck web application so that I can gain a cursory understanding of what might be causing my symptoms/what the potential recommendations might be	1	Medium	Moved to Sprint 4
Story	HID-29	As a patient, I want to know that I have reached the correct page to use the SymCheck application so that I can be sure I am uploading my picture to the correct place and receiving the recommendations/care that I desire	1	Medium	Done

Type	Key	Summary	Story Points	Priority	Status
Task	HID-28	Create Google API Account	N/A	Medium	Done
Task	HID-24	Develop illness result page	N/A	Medium	Done
Task	HID-23	Develop illness prediction image upload page	N/A	Medium	Done
Task	HID-22	Develop Home page	N/A	Medium	Done
Task	HID-17	Complete IEEE style technical paper (Deliverable 3)	N/A	Medium	Done

100%

Completed Artifacts

Sprint 3 Test Cases

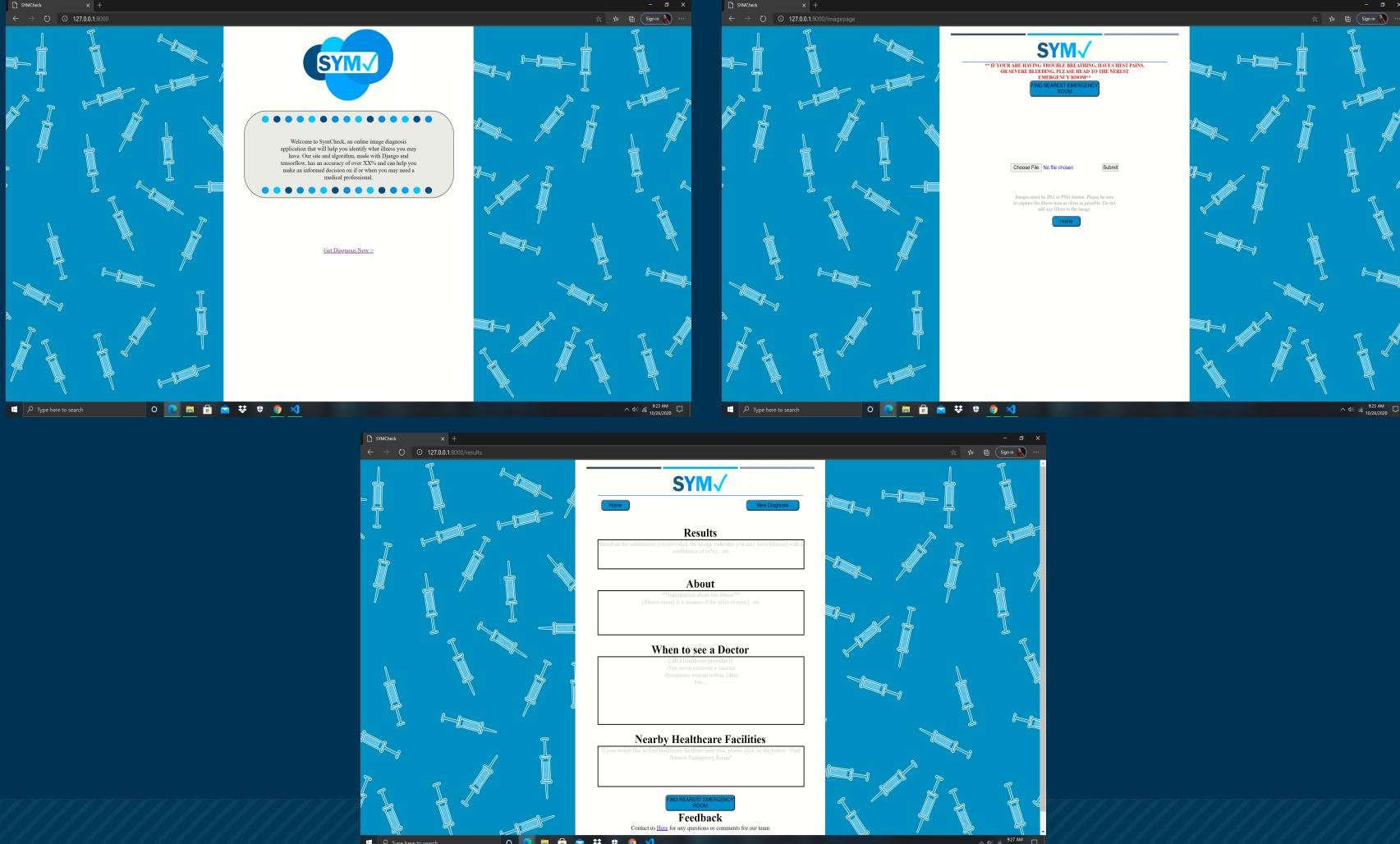
Test Case		For	Key	Test Cases	Expected Results	Actual Results	Pass/Fail
Results	HID-44	Feedback			Patient can send feedback through SymCheck email or social media	In the footer there is a contact us section, where you can send feedback through an email or via social media	Pass
Upload page	HID-36	Return to Homepage Link			Patient should be able to return to the homepage when clicking Home	At the top of the page within the NavBar when selecting Home, you are redirected to the homepage of Symcheck	Pass
Homepage	HID-29	Browse the Website			Patient should be able to access the homepage of the website	Once directed to site, you will first be directed to the homepage of SymCheck	Pass

Sprint 3 Burndown Chart



- We completed our work towards the end of the Sprint.

Sprint 3 Deliverable



- Completed SymCheck welcome page (top-left)
- Progress on image upload page (top-right)
- Established framework for final results page, and completed SymCheck feedback form link (bottom)
- This Sprint also saw the delivery of our first complete Technical Paper draft

Sprint 4-7 Recap



Sprint 4 User Stories

Type	Key	Summary	Story Points	Priority	Status
Story	HID-43	As a patient, I want to be aware of the quality/accuracy of the results given relative to those from a medical facility/medical professional so that I do not forget that all results are simply cursory recommendations based on past data	1	Medium	Done
Story	HID-41	As a patient, I want to receive another diagnosis for another affliction/repeat the diagnosis for this one so that so that I can upload another photo/set of symptoms for a different or the same illness (i.e. for confirmation of the latter)	1	Medium	Done
Story	HID-39	As a patient, I want to know whether or not I should see a doctor so that I can gauge how much of a PRIORITY a visit to a doctor/medical facility is based on the general nature of my symptoms/illness/affliction	5	Medium	Done
Story	HID-38	As a patient, I want to know what information I can obtain about this/any illness I might potentially have so that I can gain an understanding of what might be causing my symptoms, and thus make an informed decision on how best to go forth with my care	5	Medium	Done
Story	HID-37	As a patient, I want to know what my symptoms indicate/what my affliction might be so that I can gain an understanding of what might be causing my symptoms, and thus make an informed decision	5	Medium	Done
Story	HID-35	As a patient, I want to find the nearest emergency room so that I can seek immediate medical condition for what I deem to be an extremely critical/dire/time-sensitive condition	3	Medium	Done
Story	HID-34	As a patient, I want to know if I am in a critical condition or in need of immediate medical attention so that I am able to seek medical care as soon as possible if there is no time to waste!	1	Medium	Done
Story	HID-33	As a patient, I want to submit my image for assessment so that I may receive a[n accurate] determination of my affliction as well as recommendations for care	8	Medium	Done
Story	HID-32	As a patient, I want to be sure that my image has been uploaded successfully so that I can be sure that the image will be processed by the application so that I can receive recommendations for my care	3	Medium	Done
Story	HID-31	As a patient, I want to upload a photo/image of my symptom/affected area/illness so that the SYMCheck application can diagnose me and I can gain insights as to what I might be afflicted with	3	Medium	Done
Story	HID-30	As a patient, I want to be diagnosed by the SYMCheck web application so that I can gain a cursory understanding of what might be causing my symptoms/what the potential recommendations might be	1	Medium	Done

100%

Completed Artifacts

Sprint 4 Tasks

Type	Key	Summary	Story Points	Priority	Status
Task	HID-7	Upload ML algorithm code onto Jira Documents Page	N/A	Highest	Done
Task	HID-55	Finish draft technical paper	N/A	Medium	Done
Task	HID-54	Update GitHub page	N/A	Medium	Done
Task	HID-53	Complete test cases with actual results	N/A	Medium	Done
Task	HID-52	Create installation guide for running our project on localhost	N/A	Medium	Done
Task	HID-51	Create a user manual for using SymCheck application	N/A	Medium	Done
Task	HID-50	Create Deliverable 4 PowerPoint Presentation	N/A	Medium	Done
Task	HID-27	Research Database options (AWS3)	N/A	Medium	Done
Task	HID-24	Develop illness result page	N/A	Medium	Done
Task	HID-23	Develop illness prediction image upload page	N/A	Medium	Done
Task	HID-21	Create a video showing our MVP demo	N/A	Medium	Done
Task	HID-16	Develop Image Classification ML Algorithm	N/A	Medium	Done

100%

Completed Artifacts

Sprint 4 Test Cases (Homepage and Upload page)

Test Case	For	Key	Test Cases	Test Data	Expected Results	Actual Results	Pass/Fail
Homepage		HID-30	Locate the Upload Image Link		Patient should be able to locate the link to access the upload page	Click link Upload Images or the Upload in NavBar to be redirected to upload page	Pass
Upload page		HID-30	Locate the Upload Image Link		Patient should be able to locate the link to upload image	Once redirected to Upload Page the patient can easily find the Upload Image button where they can upload an image for diagnosis	Pass
Upload page		HID-31	Locate the Submit Photo Link		Patient should be able to locate the link to submit photo	Once redirected to the Upload Page beside to the upload image button there is a button to submit the photo	Pass
Upload page		HID-31	Choose file shows up	chickenpox image file	Patient should see choose file option, to upload photo to website	Once you click the choose file button you will be redirected to upload a file from your computer	Pass
Upload page		HID-32	Ability to cancel uploading file		Patient should be able to cancel the file from being uploaded	When selecting the file to upload you are prompted with the option to cancel. If you click cancel the file won't upload to the page.	Pass
Upload page		HID-32	Verify file is uploaded		Patient should not be able to click on the submit button without submitting a file	If you try to select the submit button with uploading an image, you are prompted to please select a file	Pass
Upload page		HID-32	Verify file is correct		Patient should be prompted to verify uploaded file is correct	When uploading the file, the patient can see what image they are uploading and cancel the process if it is not the right image.	Pass
Upload page		HID-33	Submit to website for analysis		Patient should be able to click submit to send correct photo to be analyzed	Once uploading the image click the submit button and the algorithm begins analyzing the photo for results	Pass
Upload page		HID-35	Locate the Nearest ER Link		Patient should be able to locate and click the Nearest ER link to access an interactive map	Under the NavBar, there is the Nearest ER link. Clicking this button, you can access google maps to show hospitals nearby.	Pass

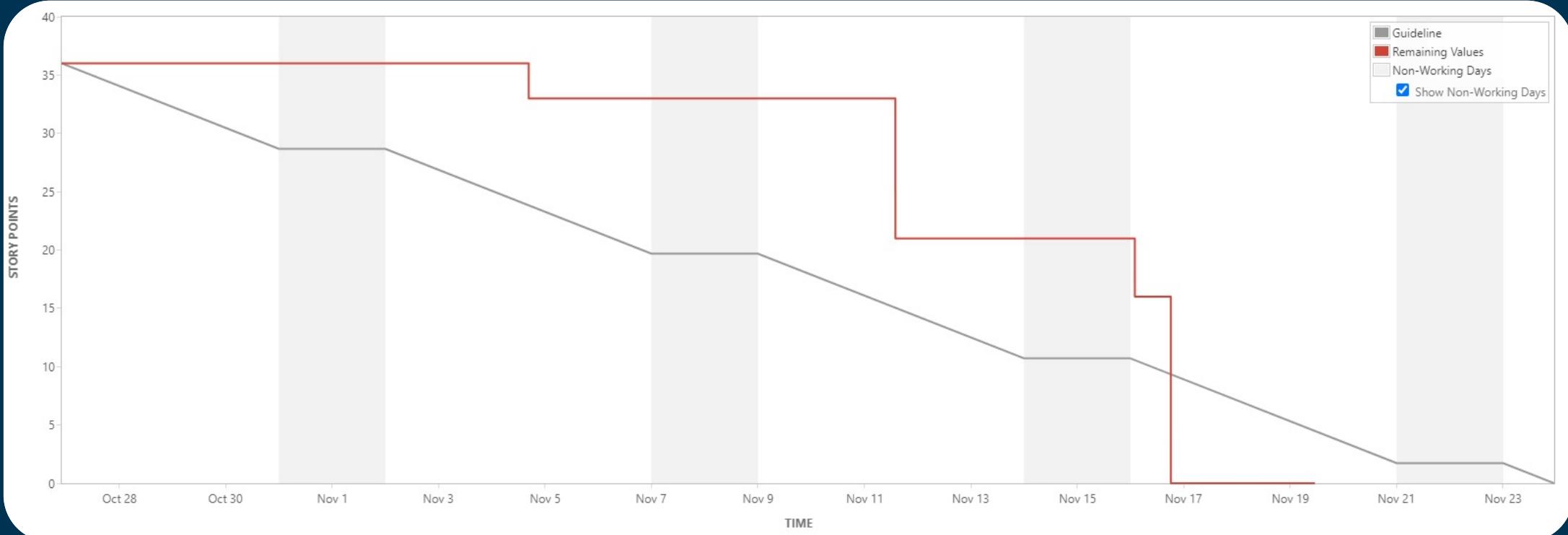
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Completed Artifacts

Sprint 4 Test Cases (Image functionality and Results)

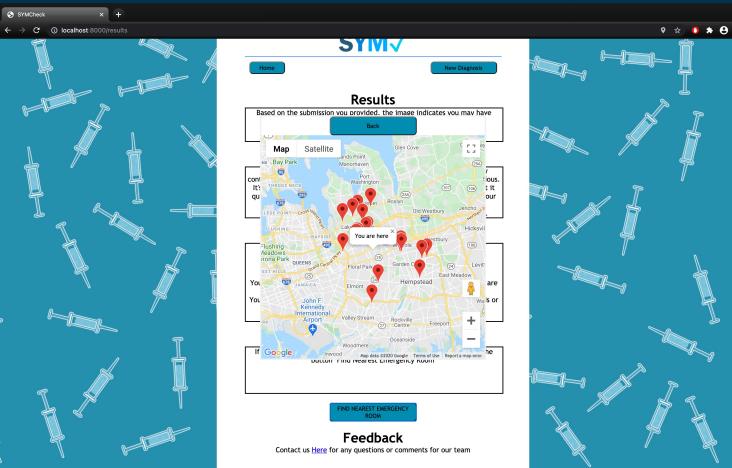
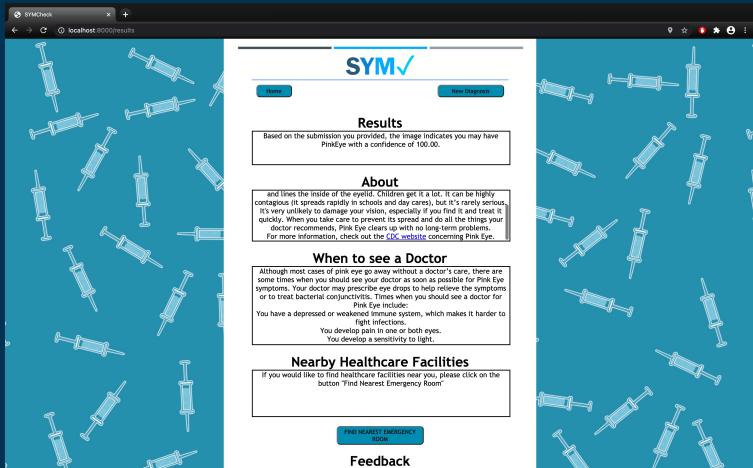
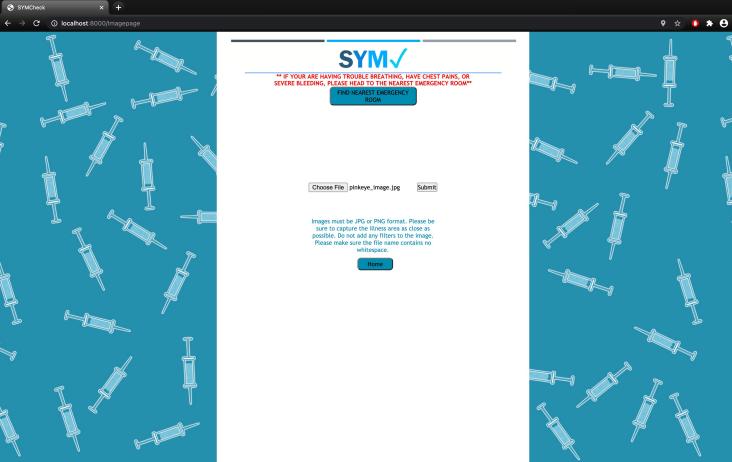
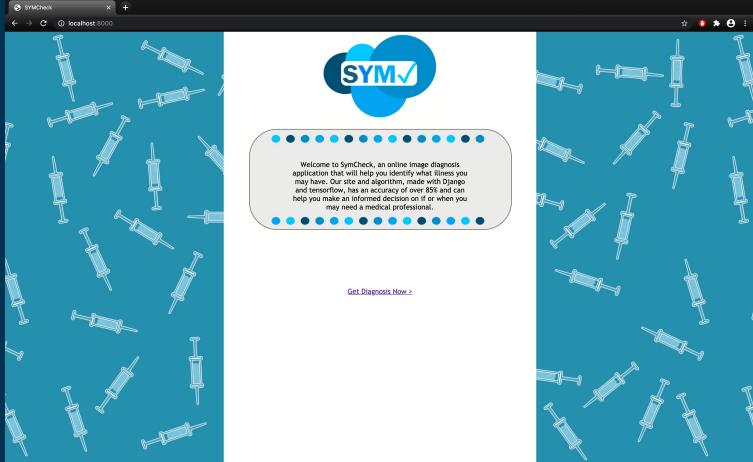
Test Case For	Key	Test Cases	Expected Results	Actual Results	Pass/Fail
Image functionality	HID-32	Check for image file extension	Patient can only upload certain types of file extensions (Verify if incorrect)	When uploading a file you can only open a jpg or png. No other extensions will be allowed to be uploaded	Pass
Image functionality	HID-32	Check for size of the image file	If file is too large to upload, the patient must be notified	If file is too large, it will be resized to fit a specific measurement before being processed in the Machine Learning	Pass
Image functionality	HID-32	Check for height and width	Image should be measuring a certain height	Before preprocessing is done, the image is resized to be 200 length and 200 width. That way the images are processed at the same size.	Pass
Results	HID-37	Results Page	Patient will see results based on Advanced Page	Either after answering advanced prediction questions or skipping to results page you will see the results of the image you uploaded	Pass
Results	HID-37	Results appear after analysis complete	Patient will see percentage that they have the illness	In the Results section it displays the likely hood of the uploaded image being an illness.	Pass
Results	HID-38	About the disease	Patient will see facts about the disease they have been diagnosed with	If the image is likely to be Chickenpox or Pink Eye, then the About box will give information about the illness and a link to the CDC website. If the image is not likely to be chickenpox or Pink Eye, then the section will say that the algorithm isn't detecting an illness	Pass
Results	HID-39	When to see a Doctor	Patient will see when it is best advised to see a doctor	In the When To See A Doctor section, it will state when it is best advised to seek medical attention and includes the symptoms that can occur or become worse	Pass
Results	HID-40	Nearest ER	If selected, patient will be able to access an interactive map	At the top of the page, under the NavBar there is a Nearest Emergency Room section. Where you can click the Nearest Emergency Room button and google maps pops up with Emergency Rooms nearby your location.	Pass
Results	HID-42	Return to Homepage	Patient should be able to return to the homepage when clicking Home	At the top of the page within the NavBar when selecting Home, you are redirected to the homepage of Symcheck	Pass
Results	HID-37	Error Message	Patient should see an error message if there is any issue with their uploaded image.	If the patient deletes their browser history and tries to refresh the page, the results won't exist anymore and this will cause the patient to submit photo again.	Pass

Sprint 4 Burndown Chart



- We consistently completed stories and finished ahead of schedule

Sprint 4 Deliverable



- Completed SymCheck welcome page (top-left)
- Completed image upload page (top-right)
- Completed results page with backend integration (bottom-left)
- Completed Google Maps API integration (image upload, and results pages)
- This Sprint also saw the delivery of our final Technical Paper for semester 1, as well as our completed Installation and User manuals, and GitHub Wiki



Sprint 5 Artifacts



Velocity

Type	Key	Summary	Story Points	Priority	Status
Story	HID-62	As a patient, I want to access the SymCheck application on the web so that I don't have to download and run an instance myself	8	Highest	Done
Story	HID-58	As a patient, I want to interact with the SymCheck Chat Bot so that I could have my questions answered quickly	5	Highest	Done
Task	HID-56	Find more images of Chickenpox, Pink Eye, Normal skin and Normal eye for the ML algorithm	N/A	High	Done
Task	HID-74	Find a coding collaboration tool for easier integration and editing of SymCheck	N/A	Medium	Done
Task	HID-65	Create questions for textual diagnosis and weight priority	N/A	Medium	Done
Task	HID-63	Enhance the SymCheck application by cleaning up code	N/A	Medium	Done
Story	HID-57	As a patient, I want to see the image I uploaded so that I know I chose the intended file	1	Medium	Done
Task	HID-61	Redo all stories, test cases, and acceptance criteria's to reflect proper type of user and verbiage	N/A	Low	Done
Task	HID-60	Link all user stories, test cases, and acceptance criteria together	N/A	Low	Done
Task	HID-66	Create a presentation for Sprint 5	N/A	Lowest	Done

- We hosted our application on Repl.it
- We incorporated Dialogflow into our application as a ChatBot
- We drafted advance prediction questions

100%

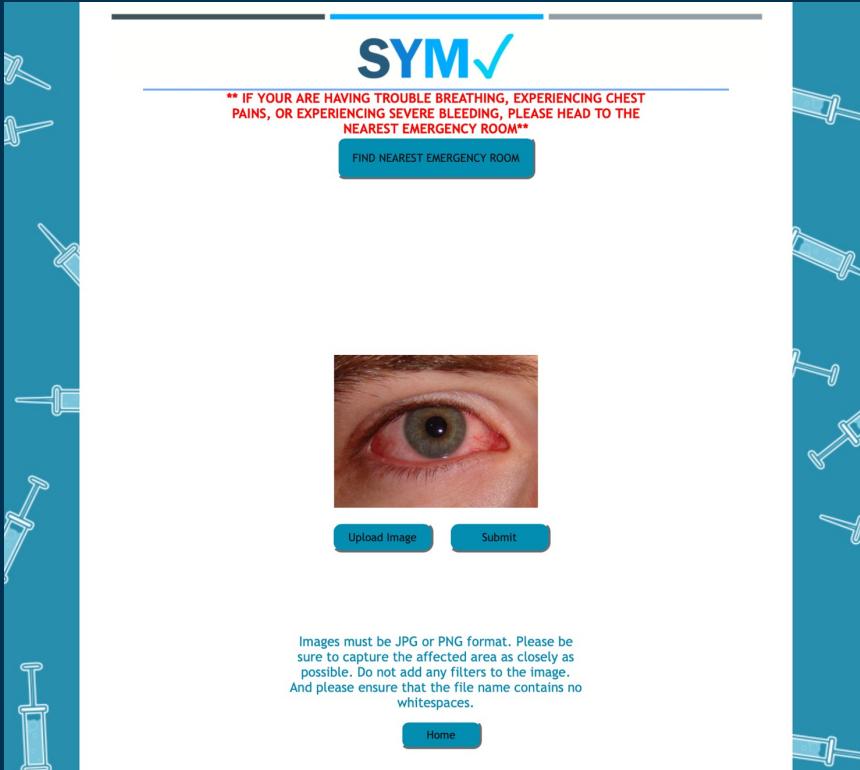
Completed Artifacts

Sprint 5 Test Cases

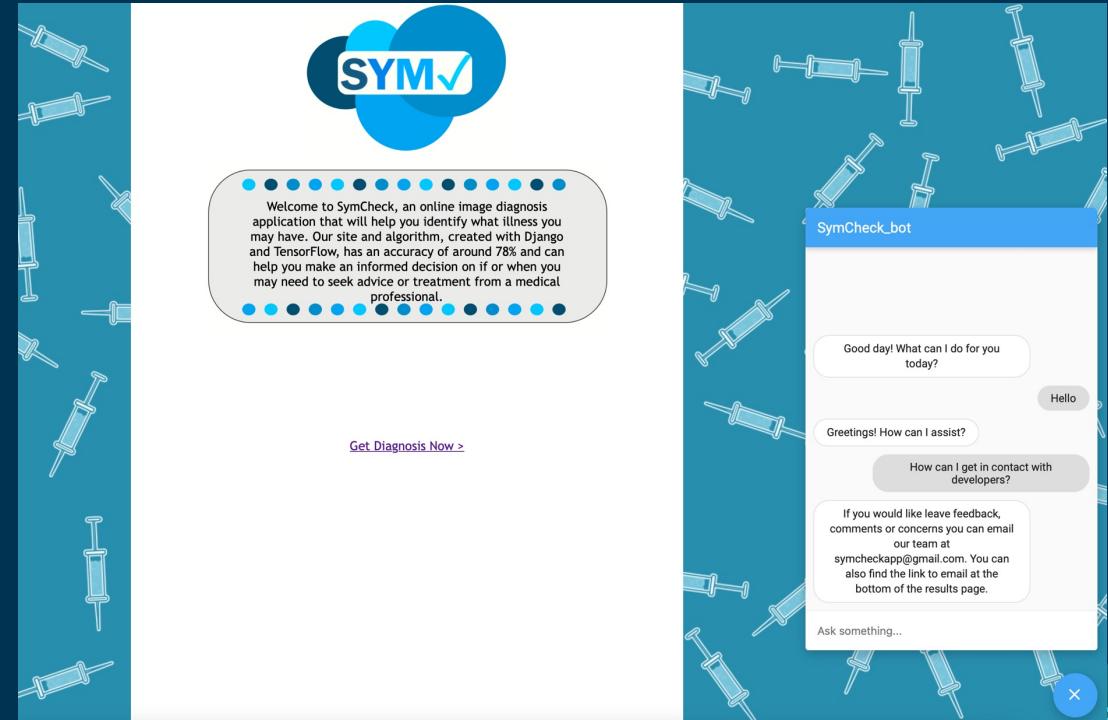
Test Case For	Key	Test Cases	Test Data	Expected Results	Actual Results	Pass/Fail
Homepage	HID-58	Chatbot	Hi, chicken pox, pink eye	Patient can interact with SymBot and receive a response	SymBot responds on all patient inputs such as hello, what is chickenpox, how can I speak to creators of symcheck, etc.	Pass
Image Upload Page	HID-57	Image reflection	pinkeye image file	Patient can see their uploaded image	After you select an image to upload, the page shows you the uploaded image	Pass
Image Upload Page	HID-58	Chatbot	How do I upload an image?	Patient can interact with SymBot and receive a response	SymBot responds on all patient inputs such as hello, what is chickenpox, how can I speak to creators of symcheck, etc.	Pass
Results	HID-58	Chatbot	How can I get in touch with developers?	Patient can interact with SymBot and receive a response	SymBot responds on all patient inputs such as hello, what is chickenpox, how can I speak to creators of symcheck, etc.	Pass
Cloud Access	HID-62	Access via URL	https://symcheck.jazzymaya.repl.co/	Patients can use SymCheck without any issues	Patients can use SymCheck without any issues	Pass

Sprint 5 Deliverables

New Image Page Capability



Chatbot Capability



Sprint 5 Burndown Chart



- We originally planned for 6 story points to be completed
- We added the 8 story point mid sprint which caused the spike
- We finished our work ahead of schedule

Sprint 6 Artifacts

78%

Completed Artifacts

1

Velocity

Type	Key	Summary	Story Points	Priority	Status
Story	HID-59	As a patient, I want to include other symptoms along with my image upload so that I can receive a better diagnosis of my illness	5	Highest	Moved to Sprint 7
Task	HID-84	Find 200 images of ringworm	N/A	High	Done
Task	HID-73	Develop a python script to clear media folder OR implement a database for uploaded pictures	N/A	High	Moved to Sprint 8
Sub-task	HID-86	Come up with FAQ	N/A	Medium	Done
Task	HID-85	Create Mock-ups for new SymCheck Design	N/A	Medium	Done
Story	HID-81	As a patient, I want to access a FAQ page so that I can see answers to common questions that I may have	1	Low	Done
Task	HID-77	Update GitHub wiki	N/A	Low	Done
Task	HID-76	Update Technical Paper	N/A	Low	Done
Task	HID-75	Update installation guide and user manual	N/A	Low	Done
Task	HID-70	Create a presentation for Sprint 6	N/A	Lowest	Done

- We created an FAQ page and designed wireframes for our new SymCheck design
- We found 200 images of ringworm to train our machine learning algorithm
- We moved our advance prediction user story to Sprint 7
- We moved the development of a script or database to clear uploaded images to Sprint 8

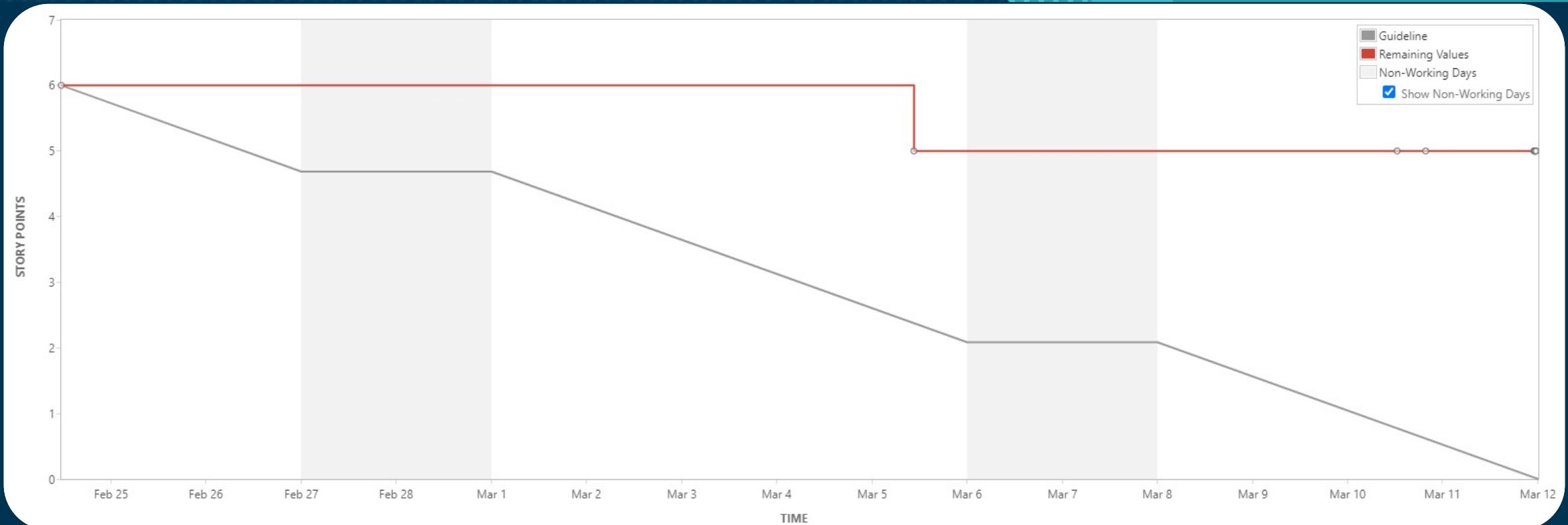
100%

Completed Artifacts

Sprint 6 Test Cases

Test Case For	Key	Test Cases	Expected Results	Actual Results	Pass/Fail
FAQPage	HID-81	Questions and Answers	Patient can see listed questions and respective answers	Patient sees listed questions and respective answers	Pass
FAQPage	HID-81	Return to Home	Patient can return to the homepage	At the top of the page within the NavBar when selecting Home, you are redirected to the homepage of Symcheck	Pass
FAQPage	HID-81	New Diagnosis	Patient can access the image upload page	At the top of the page within the NavBar when selecting Upload, you are redirected to the homepage of Symcheck	Pass
FAQPage	HID-81	Find Nearest ER	Patient can access the interactive map with nearest ERs shown	At the top of the page, under the NavBar there is a Nearest Emergency Room section. Where you can click the Nearest Emergency Room button and google maps pops up with Emergency Rooms nearby your location.	Pass
FAQPage	HID-81	Chatbot	Patient can interact with SymBot and receive a response	SymBot responds on all patient inputs such as hello, what is chickenpox, how can I speak to creators of symcheck, etc.	Pass
FAQPage	HID-81	NavBar	Patient can move to all pages on site using the NavBar	Click any link in NavBar and the user is redirected to the Home, Upload, FAQ, or About Us Page	Pass

Sprint 6 Burndown Chart



- The advance prediction page required more work than anticipated
- We were only able to complete 1 story point because of this

Sprint 6 Deliverable: FAQ Page

Top of Page

The screenshot shows the 'Frequently Asked Questions (FAQ)' section of the SymCheck app. The background features a repeating pattern of white syringes on a blue gradient background. At the top right, there is a navigation bar with 'Home' and 'New Diagnosis' buttons. The main content area has a light gray background with three questions and answers:

- Q.** What diseases does SymCheck diagnose?
A. At this current stage in SymCheck's development, the SymCheck can detect chickenpox and pinkeye through photo recognition, but is looking to expand this in the future.
- Q.** How does my advanced diagnosis question responses attribute to my confidence level?
A. By answering the questions on our advanced diagnosis page, your confidence level could either increase or decrease depending on your response, to give a more accurate diagnosis.
- Q.** What is the best way to reach the developers?
A. If you would like to leave feedback, comments or concerns you can email our team at symcheckapp@gmail.com. You can find the link to email us at the bottom of the page.

Bottom of Page

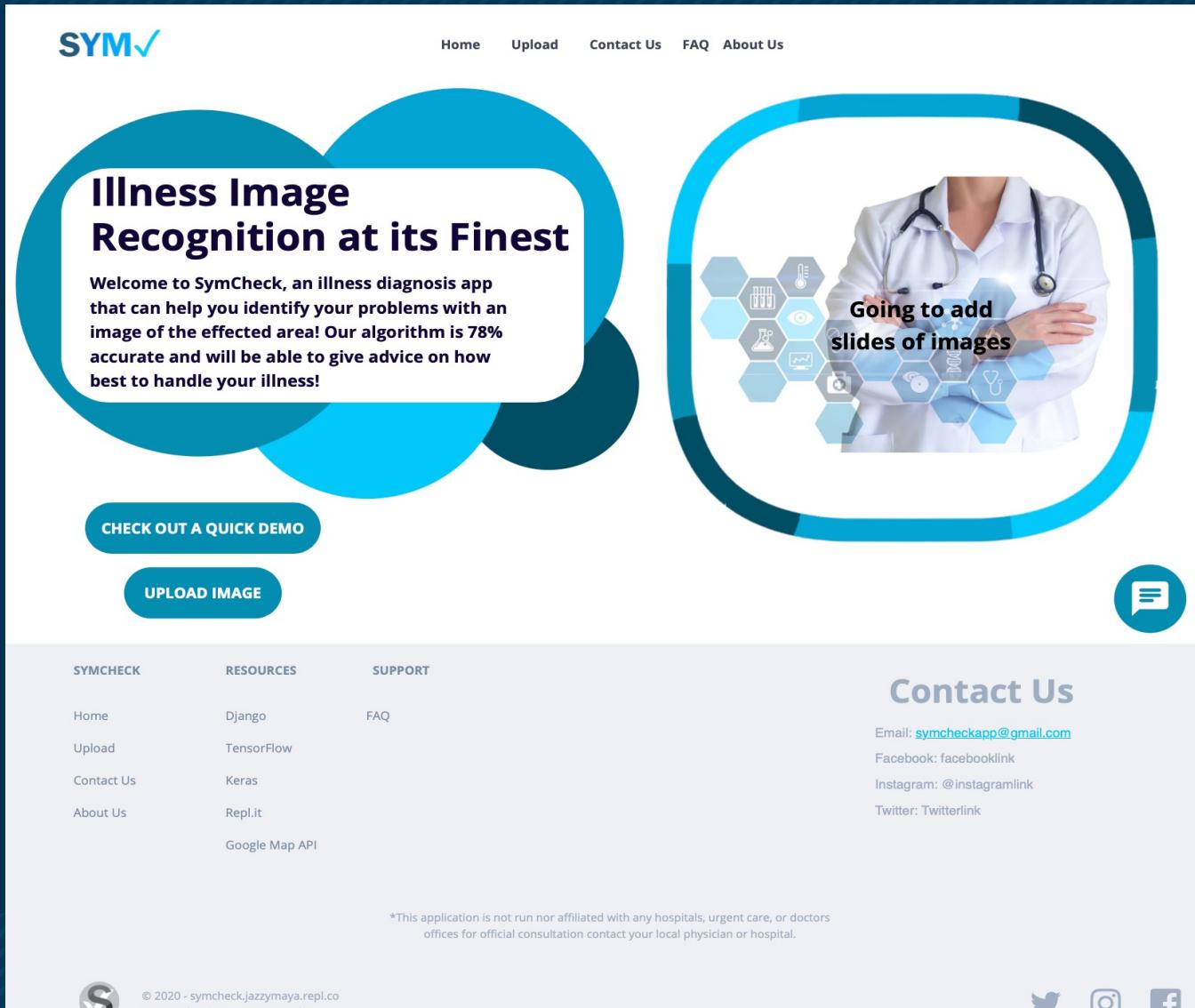
The screenshot shows the bottom section of the FAQ page. It includes a 'Feedback' section with a 'Find Nearest Emergency Room' button and a 'Feedback' button. A message box at the bottom left says 'Good day! What can I do for you today?' with a close button. On the right, there is a small circular icon with a person symbol. The background features a repeating pattern of white syringes on a blue gradient background.

Q. What is the best way to reach the developers?
A. If you would like to leave feedback, comments or concerns you can email our team at symcheckapp@gmail.com. You can find the link to email us at the bottom of the page.

Q. What is the best photo format to upload?
A. When uploading your photo, be sure that it is saved as JPG or PNG. For best results, capture the area of concern as closely and clearly as possible. Do not add filters or edit the photo.

Q. How does SymCheck diagnose diseases?
A. SymCheck uses a trained machine learning-based model to classify your uploaded image. This model is currently 78% accurate and does not use any trained professional knowledge.

Sprint 6 Deliverable: Mock-up SymCheck Design



The image shows a mock-up of the SymCheck homepage. At the top left is the logo "SYM✓". The top navigation bar includes links for Home, Upload, Contact Us, FAQ, and About Us. The main content area features two large circular sections. The left section, titled "Illness Image Recognition at its Finest", contains a welcome message about the app's purpose and accuracy, along with a "CHECK OUT A QUICK DEMO" button and an "UPLOAD IMAGE" button. The right section shows a doctor in a white coat with a stethoscope, overlaid with the text "Going to add slides of images" and surrounded by medical icons. Below these sections is a footer with three columns: SYMCHECK (Home, Upload, Contact Us, About Us), RESOURCES (Django, TensorFlow, Keras, Repl.it, Google Map API), and SUPPORT (FAQ). To the right is a "Contact Us" section with email and social media links. At the bottom is a note about the application's non-affiliation with medical professionals and a copyright notice for 2020.

SYM✓

Home Upload Contact Us FAQ About Us

Illness Image Recognition at its Finest

Welcome to SymCheck, an illness diagnosis app that can help you identify your problems with an image of the effected area! Our algorithm is 78% accurate and will be able to give advice on how best to handle your illness!

CHECK OUT A QUICK DEMO

UPLOAD IMAGE

SYMCHECK

- Home
- Upload
- Contact Us
- About Us

RESOURCES

- Django
- TensorFlow
- Keras
- Repl.it
- Google Map API

SUPPORT

- FAQ

Contact Us

Email: symcheckapp@gmail.com
Facebook: [facebooklink](#)
Instagram: [@instagramlink](#)
Twitter: [Twitterlink](#)

*This application is not run nor affiliated with any hospitals, urgent care, or doctors offices for official consultation contact your local physician or hospital.

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[Terms of Service](#) | [Privacy Policy](#)

Homepage

Sprint 7 Artifacts



Type	Key	Summary	Story Points	Priority	Status
Story	HID-59	As a patient, I want to include other symptoms along with my image upload so that I can receive a better diagnosis of my illness	5	Highest	Done
Task	HID-94	Every member is required to log work done every weekday	N/A	High	Done
Task	HID-83	Redo SymCheck's application design	N/A	High	Done
Story	HID-82	As a patient, I want to access other pages on the site with a navigation bar so that I can easily move from page to page	3	High	Done
Story	HID-93	As a patient, I want to access an About Us page so that I can get to know more about the SymCheck creators	1	Medium	Done
Task	HID-80	Add a disclaimer at the bottom of each page	N/A	Low	Done
Story	HID-79	As a patient, I want to know which illnesses SymCheck can diagnose so that I know what I can upload.	1	Low	Done
Task	HID-71	Create a presentation for Sprint 7	N/A	Lowest	Done

- We redesigned SymCheck with the inclusion of a navigation bar
- We completed the Advance Page Prediction logic

100%

Completed Artifacts

Sprint 7 Test Cases (Advance Prediction Page)

Test Case For	Key	Test Cases	Test Data	Expected Results	Actual Results	Pass/Fail
Advance Prediction Page	HID-59	Directed to Advance Prediction		Patient will be directed to Advance Prediction Page after submitting photo	After submitting a photo for analysis, the Advance Prediction Page will appear	Pass
Advance Prediction Page	HID-59	Chickenpox	chickenpox image file	Patient will be asked questions about chickenpox	After submitting a chickenpox photo, the questions on the Advance Prediction are based upon this illness.	Pass
Advance Prediction Page	HID-59	Pink Eye	pink eye image file	Patient will be asked questions about pink eye	After submitting a pink eye photo, the questions on the Advance Prediction are based upon this illness.	Pass
Advance Prediction Page	HID-59	Complete All Answers		Patient will have to complete all answers	When choosing to answer the advanced questions must answer all of them to submit and move on to the results. If you don't answer one question an alert will pop up to answer that question	Pass
Advance Prediction Page	HID-59	Submit Answers		Patient can submit answers to Advanced Questions	Once completing all questions, you can submit the answers to help further diagnosis your illness.	Pass
Advance Prediction Page	HID-59	Skip to Results		Patient can skip Advance Questions and go to Results Page	If someone doesn't want to answer the Advanced Page questions, then clicking the skip to results button will send them to the results page	Pass

100%

Completed Artifacts

Sprint 7 Test Cases (About Us Page)

Test Case For	Key	Test Cases	Test Data	Expected Results	Actual Results	Pass/Fail
About Us Page	HID-59	About Us	N/A	Patient can locate About Us page	In the NavBar you will find About Us, once selected you will be redirected to this page	Pass
About Us Page	HID-59	What is SYMCheck	N/A	Patient can see what SYMCheck Application does	Underneath the NavBar you will see a short description about what the application does	Pass
About Us Page	HID-59	Meet the Team	N/A	Patient can see all of the team members who created SYMCheck	Below the What is SYMCheck section you will see Meet the Team. With a list of our team members with pictures and the description of our roles.	Pass
About Us Page	HID-59	Chatbot	How can I get in touch with developers?	Patient can interact with SymBot and receive a response	SymBot responds on all patient inputs such as hello, what is chickenpox, how can I speak to creators of symcheck, etc.	Pass

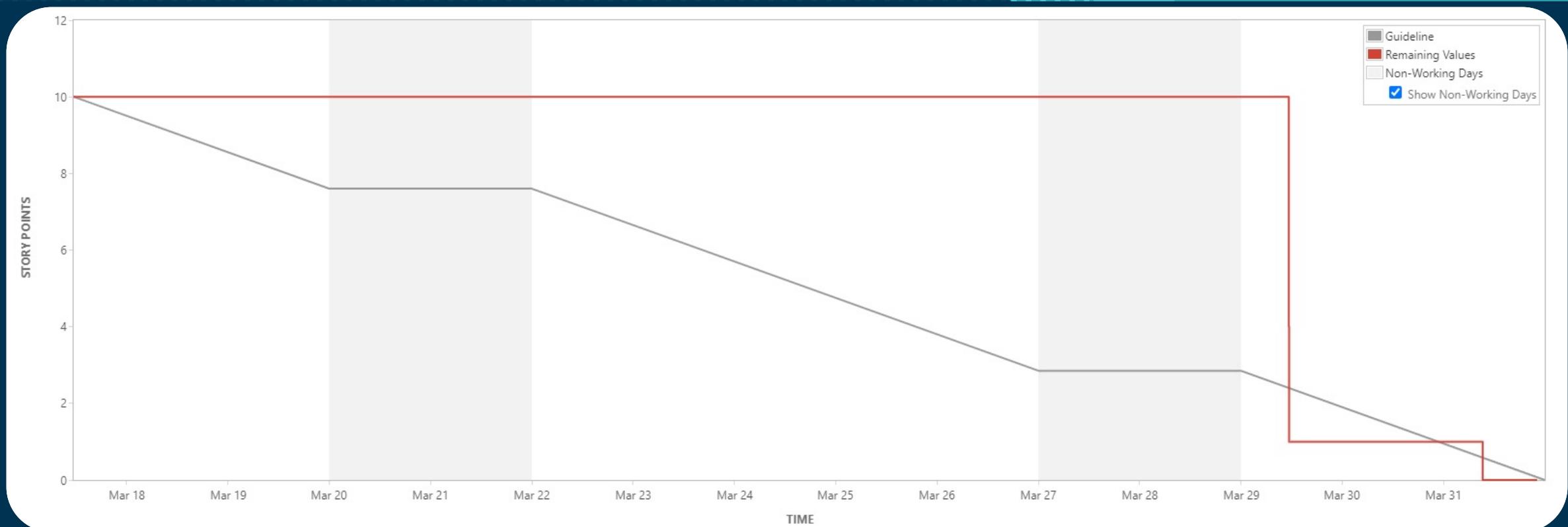
100%

Completed Artifacts

Sprint 7 Test Cases (All Pages)

Test Case For	Key	Test Cases	Expected Results	Actual Results	Pass/Fail
Homepage	HID-79	Illness Diagnosed	Patient can see which illnesses SymCheck can check for	Patient can see what illnesses SymCheck can diagnose as well as its machine learning accuracy percentage	Pass
All Pages	HID-80	Disclaimer	Patient can see disclaimer in the footer	In the footer, there is a disclaimer saying we are not medical professionals	Pass
All Pages	HID-80	Footer Links	Patient can click on any links in footer and be redirected to respective pages	In the footer, all links under SymCheck, Resources, Support, and Contact Us take you to the correct page	Pass
All Pages	HID-82	Navigation Bar	Patient can move to all pages that does not rely on user input on site using Navigation bar	Patient can click any link in Navigation Bar and is redirected to the Home, Upload, FAQ, or About Us Page	Pass
All Pages	HID-83	Footer	Patient can access footer along all pages throughout the web application	On every page, the patient has access to the same footer elements	Pass

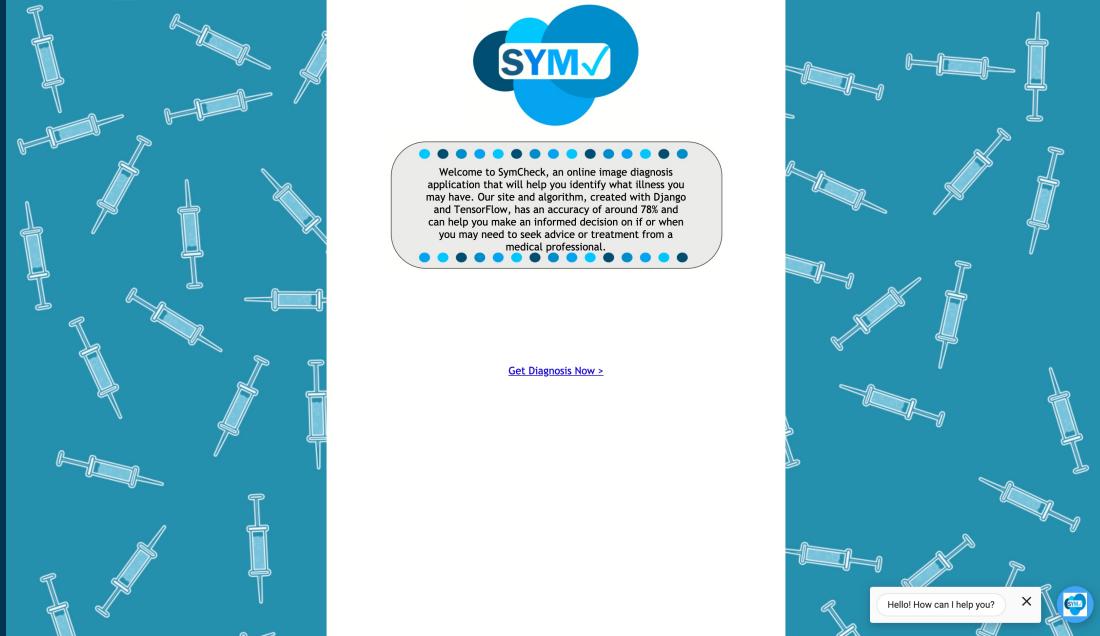
Sprint 7 Burndown Chart



❖ Most of the team's efforts went into the complete redesign of SymCheck

❖ We finished our work towards the end of the Sprint

Sprint 7 Deliverable: Redesign



Before



After

A screenshot of the SymCheck website's landing page after redesign. The background is dark blue. The main heading 'Illness Image Recognition at its Finest' is prominently displayed in a large blue circle. Below it is a detailed description of the app's purpose and accuracy. Two buttons, 'CHECK OUT A QUICK DEMO' and 'UPLOAD IMAGES', are located below the main text. The footer contains links for SYMCHECK (Home, Upload, FAQ, About Us), RESOURCES (Django, Tensorflow, Keras, AWS, Google Map API), and SUPPORT (FAQ). On the right side, there is a circular graphic showing a hand interacting with a digital interface displaying various medical icons and data. A 'Contact Us' sidebar on the right lists email, Facebook, Instagram, and Twitter handles. A small 'Hello! How can I help you?' chatbot is at the bottom right.

Sprint 7 Deliverable: Advance Prediction Page - Chickenpox

SYM✓

Home Upload FAQ About Us

****IF YOU ARE HAVING TROUBLE BREATHING HAVE CHEST PAINS, OR SEVERE BLEEDING,
PLEASE HEAD TO THE NEAREST EMERGENCY ROOM****

**NEAREST
EMERGENCY ROOM**

SKIP TO RESULTS

1. Have you had chickenpox in the past?
 Yes No

2. If you had chickenpox in the past, were you less than 6 months old?
 Yes No

3. Do you have a fever?(Above 98.6 F or 37 C)
 Yes No

4. Are you experiencing any irritation in the affected area?(Burning, itching or tightness)
 Yes No

SUBMIT

SYMCHECK **RESOURCES** **SUPPORT**

Home Django FAQ
Upload Tensorflow
FAQ Keras
About Us AWS
Google Map API

Contact Us

Email: symcheckapp@gmail.com
FaceBook: [SYMCheck](#)
Instagram: [symcheck8080](#)
Twitter: [twitter.com/CheckSym](#)

*This application is not run nor affiliated with any hospitals, urgent care, or any medical professional. For official consultation contact your local physician or hospital.

Good day! What can I do for you today?

Sprint 8

Sprint 8 Statistics

78%

Completed Artifacts
(Tasks and Stories)

16

Velocity

Type	Key	Summary	Story Points	Priority	Status
Story	HID-62	As a patient, I want to access the SymCheck application on the web so that I don't have to download and run an instance myself	8	Highest	Done
Task	HID-88	Set up AWS environment for development and production	N/A	High	Done
Task	HID-78	Add ringworm as another illness that can be predicted	N/A	High	Incomplete
Task	HID-73	Develop a python script to clear media folder OR implement a database for uploaded pictures	N/A	High	Incomplete
Story	HID-64	As a patient, I want to access SymCheck on my mobile device for convenience	5	High	Done
Task	HID-100	Code initially with optimization in mind	N/A	Medium	Done
Sub-task	HID-99	Develop ringworm logic for views.py	N/A	Medium	Incomplete
Sub-task	HID-98	Add ringworm information to results page	N/A	Medium	Incomplete
Sub-task	HID-97	Add ringworm questions to Advance page	N/A	Medium	Incomplete
Task	HID-96	Optimize SymCheck code	N/A	Medium	Done
Story	HID-95	As a patient, I want to be able to easily understand my illness is so that I know how serious it is	3	Medium	Done
Sub-task	HID-92	Create AWS S3 bucket	N/A	Medium	Done
Sub-task	HID-91	Create AWS Elastic Beanstalk instance	N/A	Medium	Done
Sub-task	HID-90	Create IAM roles for team and provide access to instances	N/A	Medium	Done
Sub-task	HID-89	Create a Cloud9 development environment in AWS	N/A	Medium	Done
Task	HID-72	Create a presentation for Sprint 8	N/A	Lowest	Done

- AWS Cloud Deployment was successful
- Did not add Ringworm as another illness prediction

Sprint 8 Artifacts

HID-62
User Story
Points: 8

- As a patient, I want to access the SymCheck application on the web so that I don't have to download and run an instance myself
- Acceptance Criteria: Given that the patient opens a supported browser, when the patient navigates to www.symcheckapp.com, then the patient can utilize SymCheck

HID-64
User Story
Points: 5

- As a patient, I want to access SymCheck on my mobile device for convenience
- Acceptance Criteria: Given that the patient is on a mobile device using a supported browser, when the patient navigates to www.symcheckapp.com, then the patient will see a mobile friendly interface

HID-95
User Story
Points: 3

- As a patient, I want to be able to easily understand my illness is so that I know how serious it is
- Acceptance Criteria: Given that the patient is on the Results page, when the patient receives a diagnosis, then the patient will see a progress bar showing their percentage

HID-72 Task

- Create a presentation for Sprint 8

HID-88 Task

- Set up AWS environment for development and production

HID-96 Task

- Optimize SymCheck code

HID-100 Task

- Code initially with optimization in mind

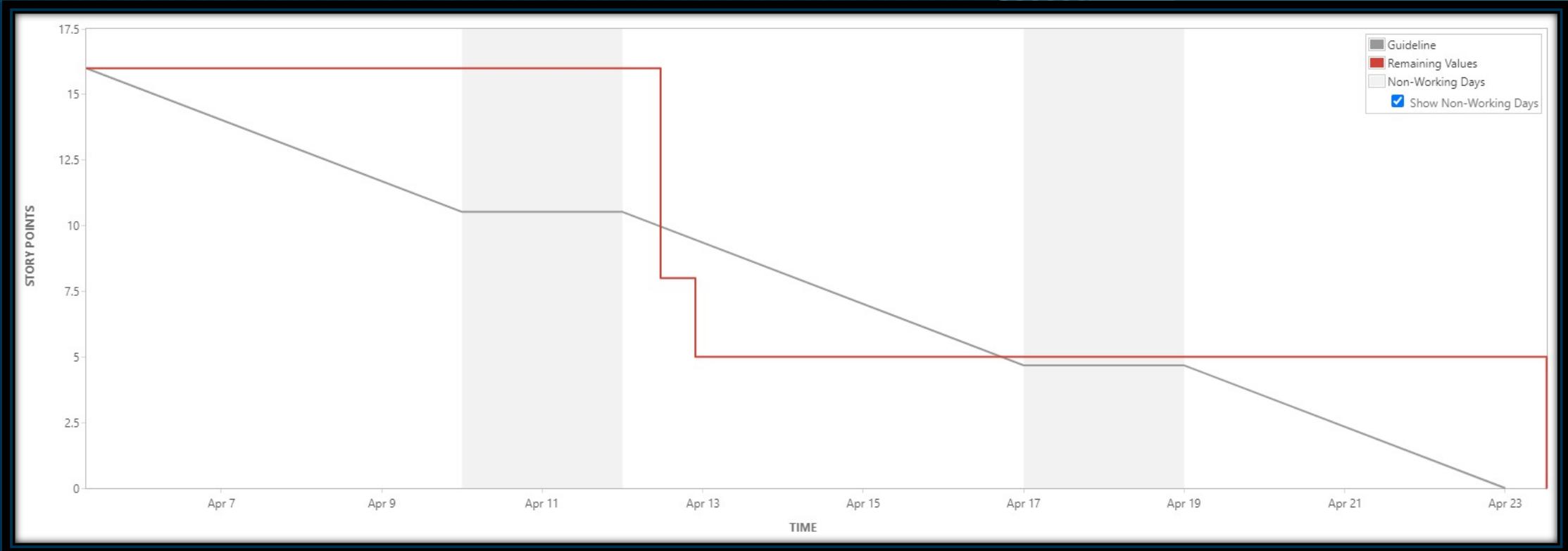
87%

Completed Artifacts

Sprint 8 Test Cases

Test Case For	Key	Test Cases	Test Data	Expected Results	Actual Results	Pass/Fail
Results	HID-95	Progress Bar	Normal Eye or Normal Skin	Patient will be able to easily understand how serious the illness is	When completing results if patient has a Normal Eye or Normal Skin with a percentage of 66% of higher then the progress bar is green. Otherwise if the percentage is less than 66% ten the progress bar is yellow.	Pass
Results	HID-95	Progress Bar	Pink Eye or Chickenpox	Patient will be able to easily understand how serious the illness is	When completing results if patient has a Pink Eye or Chickenpox with a percentage of 66% of higher then the progress bar is red. Otherwise if the percentage is less than 66% ten the progress bar is yellow.	Pass
Mobile	HID-64	Home Buttons	Upload Images and Check Out A Quick Demo	Patient will be redirected to button links once they are clicked	Clicking on the Check Out A Quick Demo button the user is redirected to a video to show a demo of how to use the website. Clicking on the Upload Images button the user will be redirected to the Upload page where they can upload images for diagnosis	Pass
Mobile	HID-64	Chatbot	Hi, chicken pox, pink eye, How can I get in touch with the Developers of SymCheck?, How do I upload an image?	Patient can interact with SymBot and receive a response	SymBot responds on all patient inputs such as hello, what is chickenpox, how can I speak to creators of symcheck, etc.	Pass
Mobile	HID-64	NavBar	Home, Upload, FAQ, Advanced, Results, and About Us Pages	Patient can move to all pages on site using the NavBar	Click any link in NavBar and the user is redirected to the Home, Upload, FAQ, or About Us Page	Pass
Mobile	HID-64	Locate the Nearest ER Link	Upload, FAQ, and Results Pages	Patient should be able to locate and click the Nearest ER link to access an interactive map	Under the NavBar, there is the Nearest ER link. Clicking this button, you can access google maps to show hospitals nearby.	Pass
Mobile	HID-64	Patient Input Page	Chickenpox.png	Patient should be able to click submit to send correct photo to be analyzed	Once uploading the image click the submit button and the algorithm begins analyzing the photo for results. **Only for files under 1MB**	Fail
Mobile	HID-64	Results		Patient will see percentage that they have the illness	In the Results section it displays the likely hood of the uploaded image being an illness.	Pass

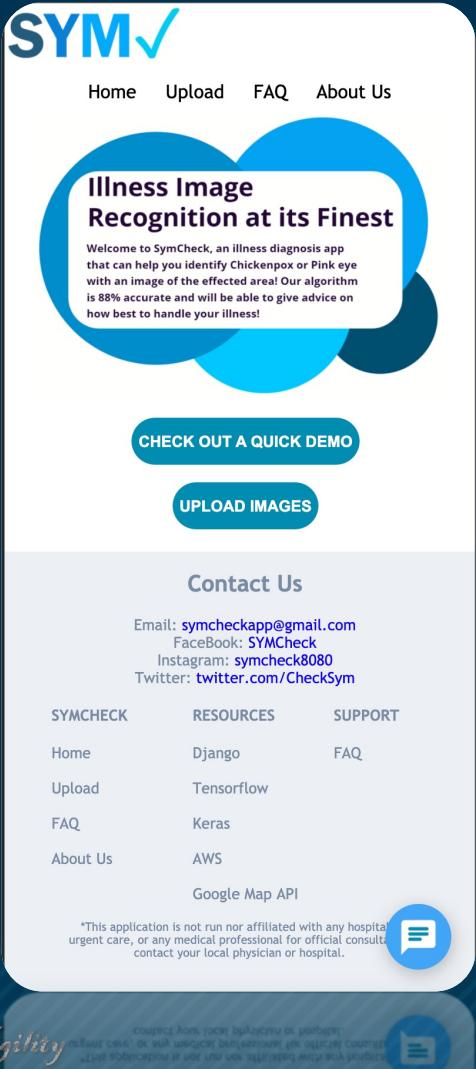
Sprint 8 Burndown Chart



- We completed cloud deployment mid sprint.
- We finished SymCheck's mobile responsiveness at the end.

Sprint 8 Deliverables

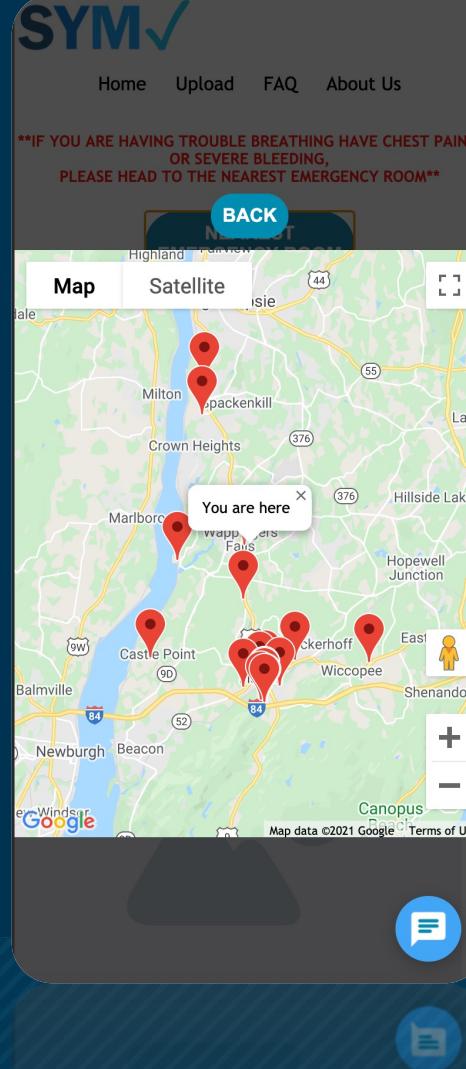
Homepage



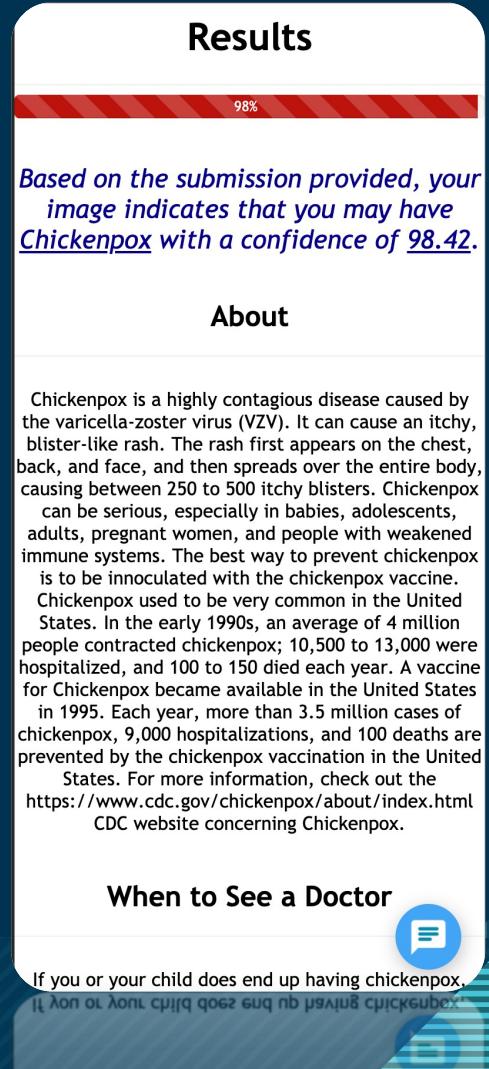
Upload Page



Nearest Emergency Room



Results Page



Retrospectives

Retrospectives

What went well

Using Code
Collaboration
AWS Cloud 9
tool

Coding with
optimization in
mind

What needs improvement

4

Implementing
daily scrum
principles

1

Improve pair
programming

1

Daily
scheduled
working time

Next Steps

Implementing
daily scrum
principles

GitHub Wiki

<https://github.com/jazzymaya/HiddenAgility/wiki>

jazzymaya / HiddenAgility

Code Issues Pull requests Actions Projects Wiki Security Insights Settings

Unwatch 2 Star 1 Fork 0

Home

Sayema Islam edited this page 4 days ago - 158 revisions

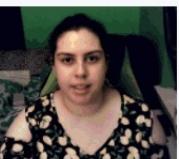
Edit New Page

SymCheck - Pace University Capstone Project

Project Description

Our project for CS 691 and CS 692 is a web application called "SymCheck". This is a self-diagnosing, symptom-checking application that allows users to upload a picture of their illness area and receive a diagnosis based on an original Machine Learning algorithm. As an example, a user who thinks he or she has chickenpox would be able to upload an image of the affected area and submit it to our application. The application would then tell the user if his or her condition actually identifies as chickenpox or not.

Team Members

 Jasmine Washington (jasmine.m.washington@pace.edu)	 Sayema Islam (sayema.islam@pace.edu)	 Alan Singleton (alan.w.singleton@pace.edu)
		

Pages 1

Find a Page...
Home

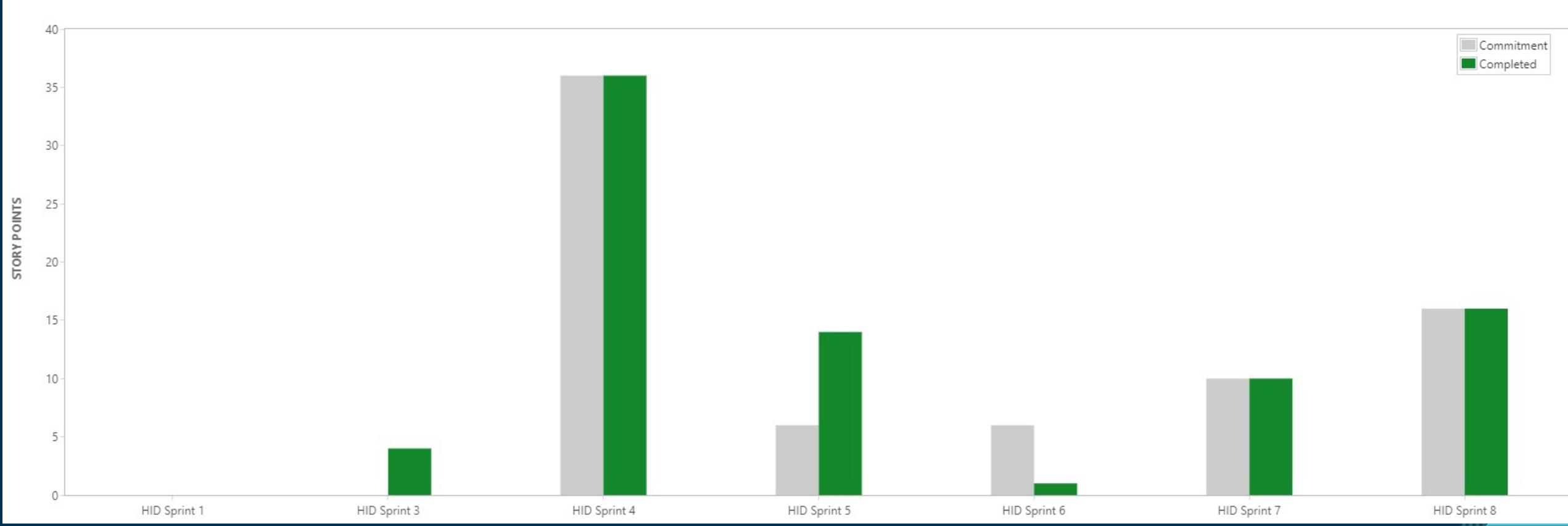
+ Add a custom sidebar

Clone this wiki locally
<https://github.com/jazzymaya/Hid>

Conclusion

Conclusion

Velocity Chart



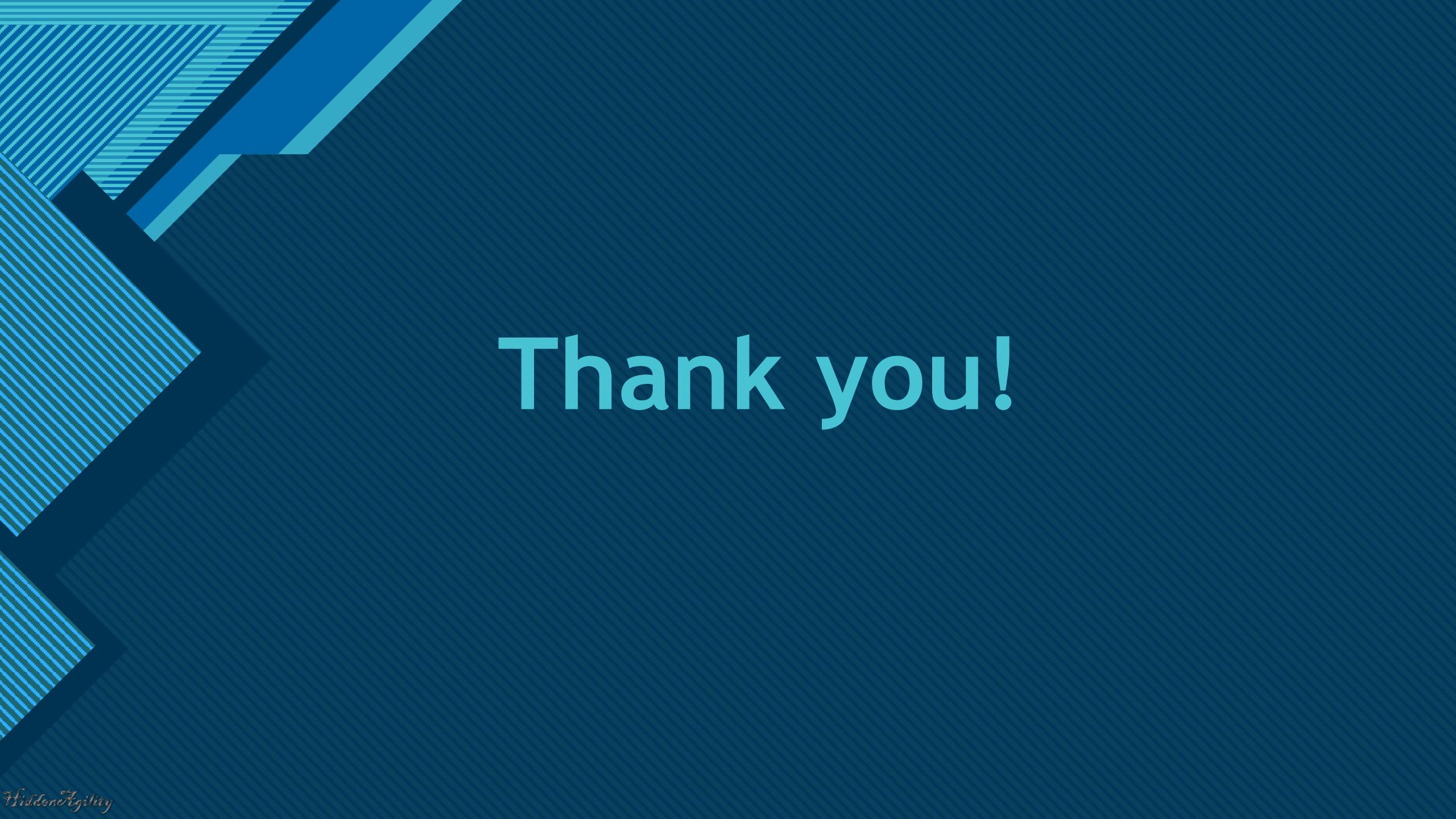
Conclusion

SymCheck Recap

- Visit <https://symcheck.msjasmine.repl.co> on your desktop or from your mobile device today
 - www.symcheckapp.com URL will be deprecated May 10th, 2021. Repl.it has upgraded their servers so we will maintain SymCheck on their infrastructure
- Follow SymCheck on Facebook, Instagram, and Twitter to stay up-to-date on all things SymCheck

Future Scope

- Addition of illnesses for diagnoses
- Increasing the accuracy of training within our backend image classification model
- Implementation of a dynamic script to clear media folder of all user image uploads daily for increased patient privacy

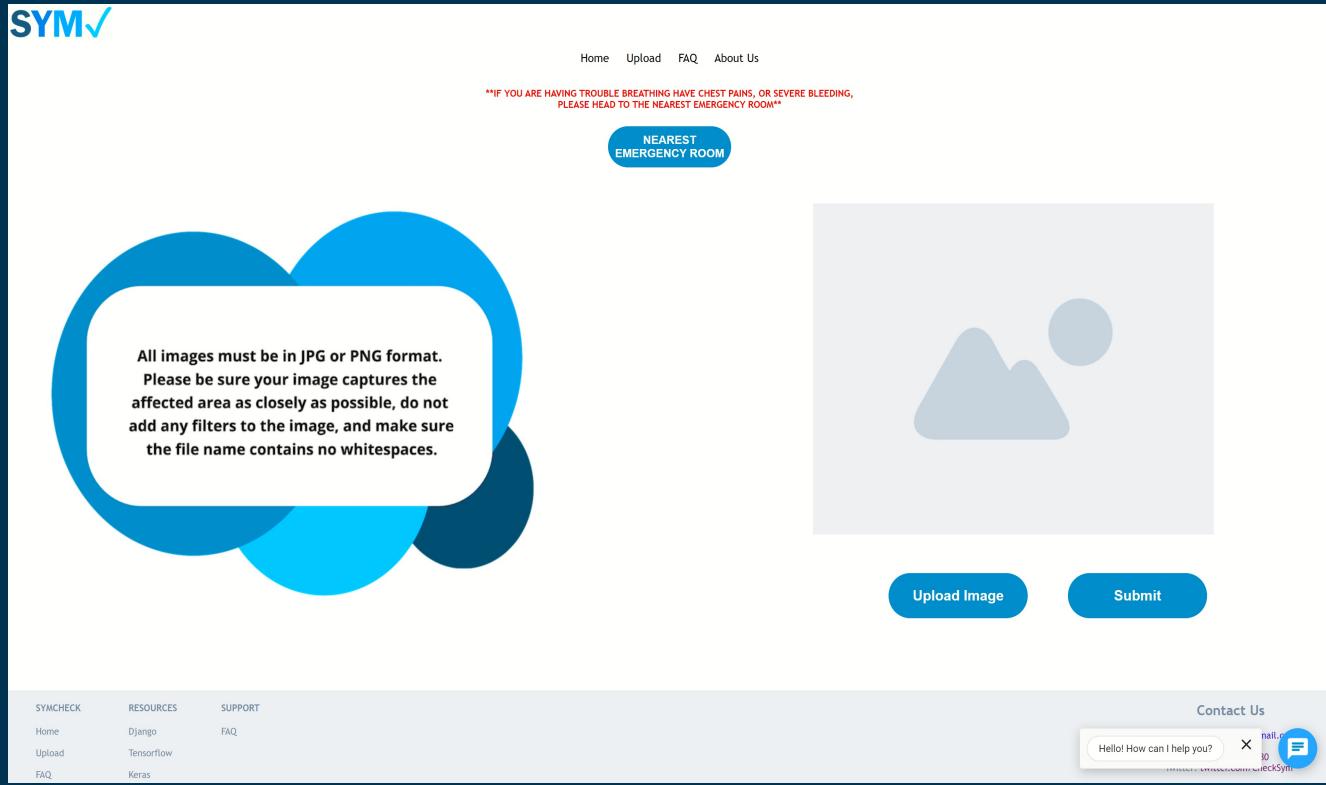
The background features a dark blue gradient with a subtle diagonal striped pattern. Overlaid on the left side are several abstract geometric shapes in varying shades of blue: a large triangle at the top left, a trapezoid below it, and a large rectangle that tapers towards the bottom left corner.

Thank you!

The background features abstract, overlapping blue geometric shapes, including rectangles and triangles, creating a modern and dynamic feel.

Demo

Demo Screen Shots



- Check out our demo video