

DISEASE PREDICTION

EARLY DETECTION IS A KEY TO HEALTHIER LIFE



TEAM MEMBERS

- 
- 1. TARANPREET KAUR BATH
 - 2. KEYURKUMAR KANKOTIYA
 - 3. BINALBEN RAVI PATEL
 - 4. KRUNAL PATEL
 - 5. BHARGAV PATEL





TEAM CONTRIBUTION

KEYURKUMAR KANKOTIYA

- WORKED ON DOCUMENTATION
- WORKED ON TECHNICAL PART
- WORKING ON UI/UX PART

KRUNAL PATEL

- DATA CLEANING
- WORKING ON UI/UX PART
- WORKING ON TECHNICAL



TARANPREET KAUR BATH

- WORKED ON DOCUMENTATION
- WORKED ON TECHNICAL PART

BHARGAV PATEL

- DATA VISUALIZATION
- DATA CLEANING
- WORKING ON TECHNICAL

BINAL PATEL

- WORKED ON DOCUMENTATION
- DATA VISUALIZATION
- WORKING ON TECHNICAL



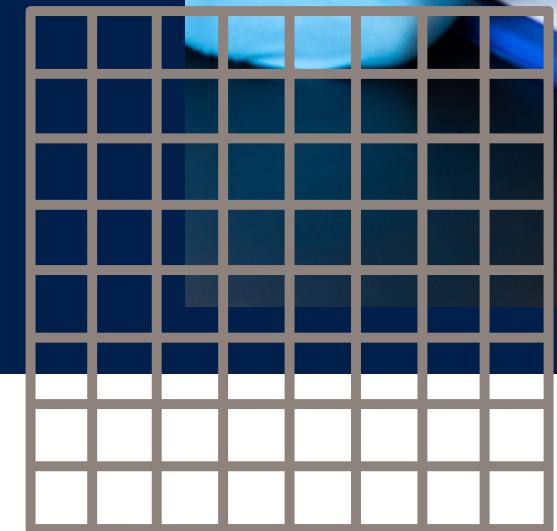
PROBLEM STATEMENT



- AS WE ARE AWARE THAT CANADA'S CURRENT MEDICAL FACILITIES ARE NOT MUCH BETTER AND FASTER, AND PEOPLE, ESPECIALLY INTERNATIONAL STUDENTS NEED TO WAIT ALMOST A MONTH FOR AN APPOINTMENT BEFORE RECEIVING TREATMENT.
- SO WE WILL WORK TO SOLVE THIS ISSUE BY DEVELOPING A 24/7 ACCESSIBLE APPLICATION THAT WILL GIVE STUDENTS A GENERAL UNDERSTANDING OF THE CAUSES AND TREATMENTS FOR ALL AILMENTS. BASED ON THAT STUDENTS CAN TAKE THE REQUIRED PRECAUTIONS.

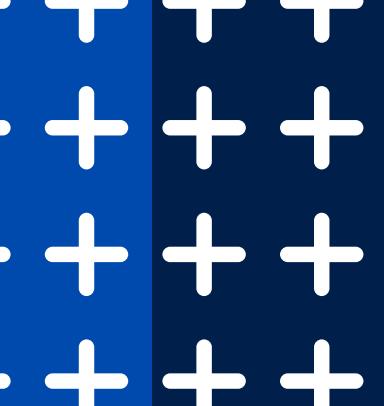
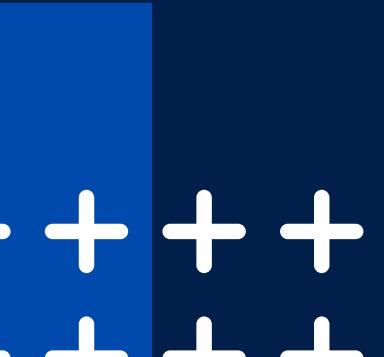
PROJECT AGENDA

- THE MAIN OBJECTIVE OF OUR PROJECT IS TO MAKE A PLATFORM WHERE EVERYONE ESPECIALLY STUDENTS CAN CHECK ON THEIR HEALTH BY PUTTING THEIR SYMPTOMS INTO THE CHATBOT AND GETTING THE RIGHT DISEASE INFORMATION ACCORDING TO WHICH, THEY CAN TAKE FURTHER PRECAUTIONS AND TREATMENT IF NEEDED.



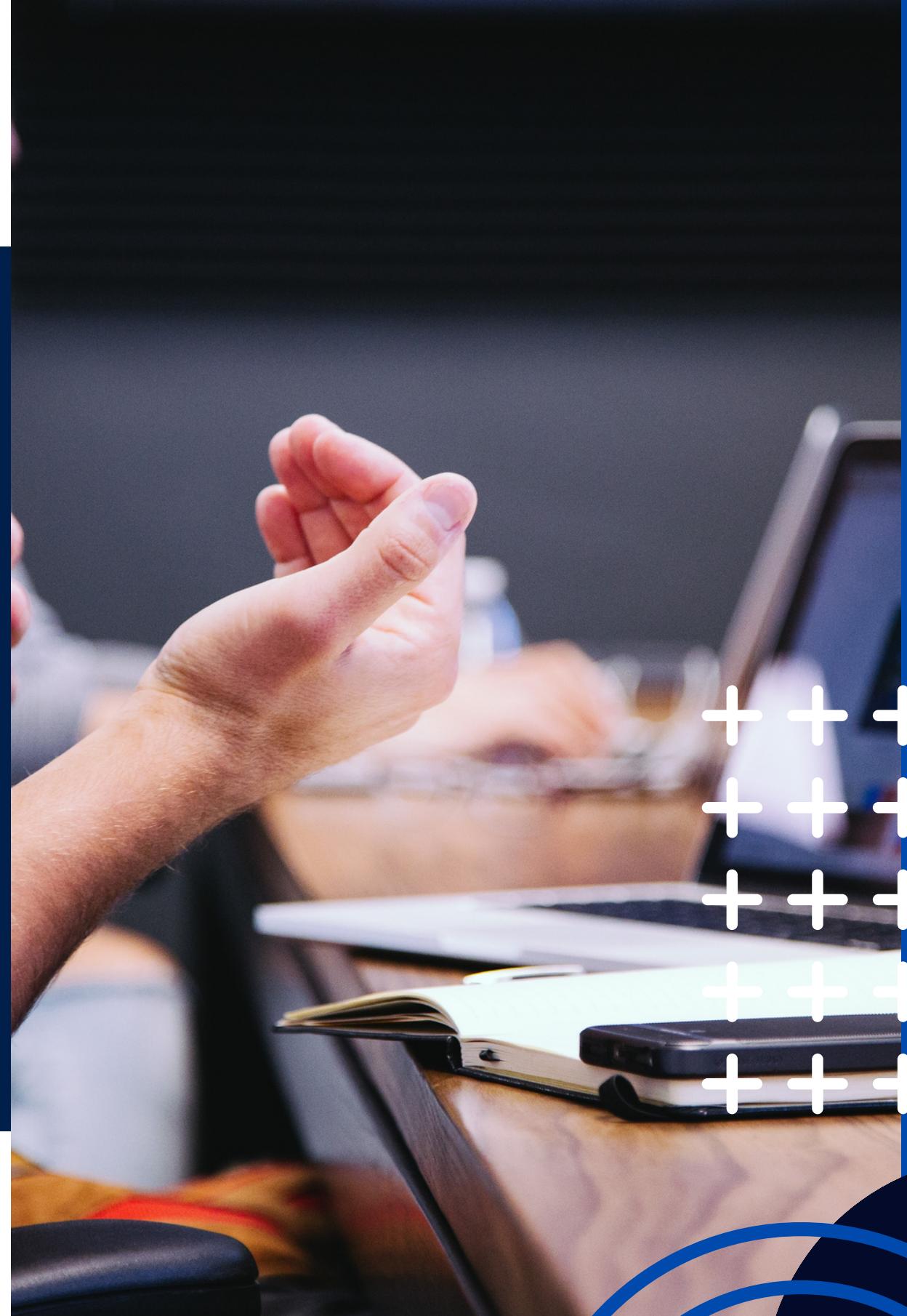
INITIALITION

- OUR FIRST STEP WAS LOOKING FOR THE PERFECT PROJECT TOPIC ON WHICH EVERY GROUP MEMBER WOULD AGREE.
- WE FINALIZED THE PROJECT TOPIC AND DID INDIVIDUAL TASK TO WRITE THE PROBLEM STATEMENT AND THEN HAD A BRAINSTORMING SESSION TO WRITE THE FINAL PROBLEM STATEMENT FOR THE PROJECT.



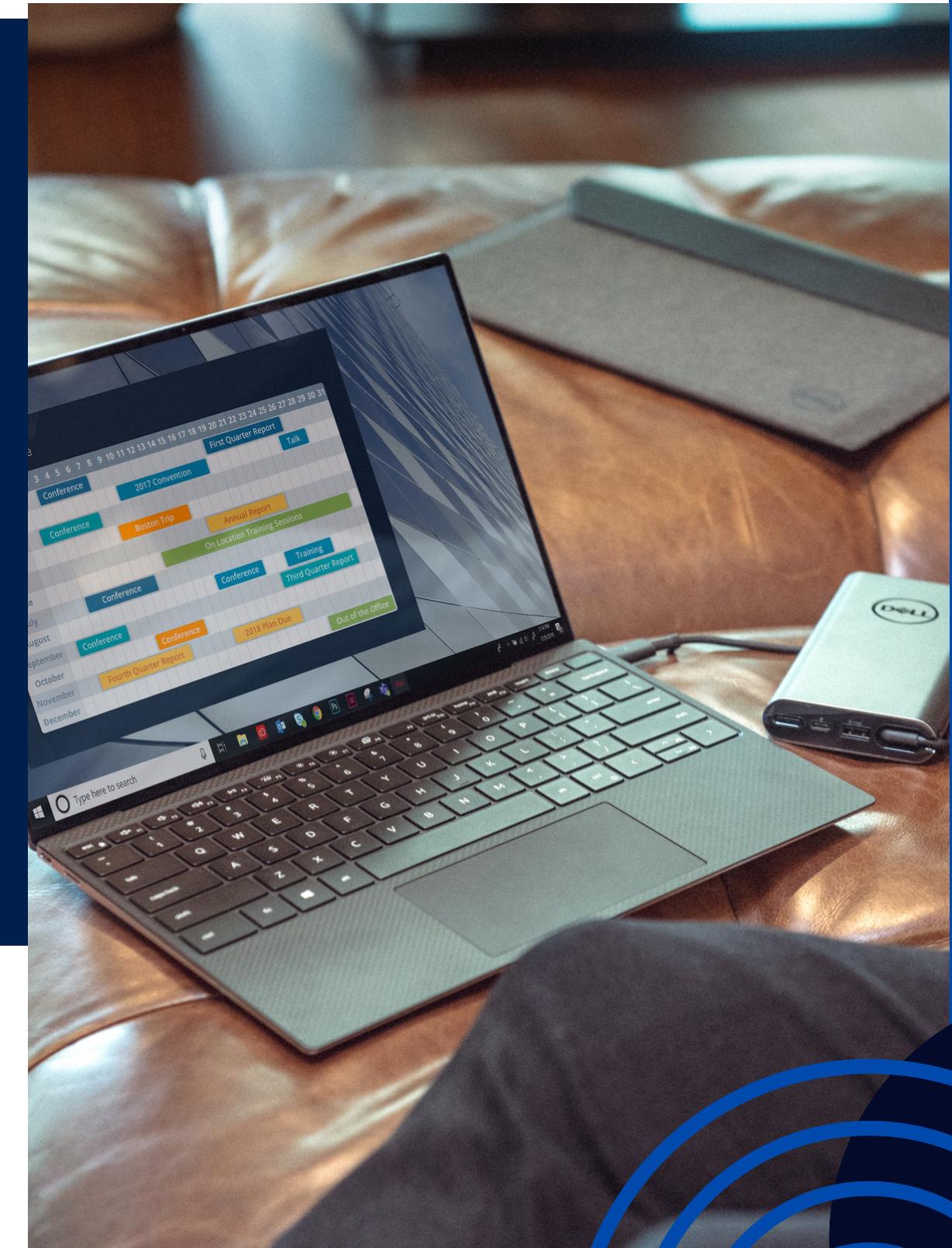
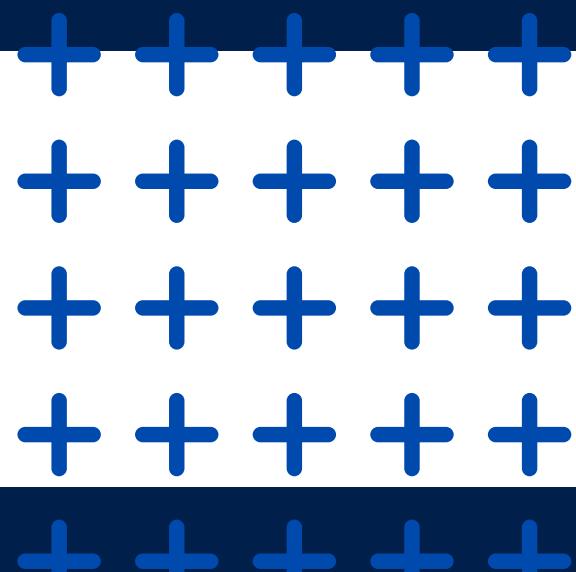
PLANNING

- WE LOOKED UP FOR A GOOD DATASET AND SELECTED THE ONE WHICH WAS SUITABLE FOR THE PROJECT.
- WE WORKED ON OUR BUDGET AND LOOKED FOR SPONSORS.
- WE LOOKED UPON THE CHALLENGES AND LIMITATIONS IN THE PROJECT.



EXECUTION

- OUR TEAM STARTED DATA EXPLORATION AND DATA CLEANING.
- AFTER WE GOT THE CLEAN DATA, WE STARTED DATA VISUALIZATION USING TABLEAU.
- WE HAVE STARTED WORKING ON OUR ML MODEL.



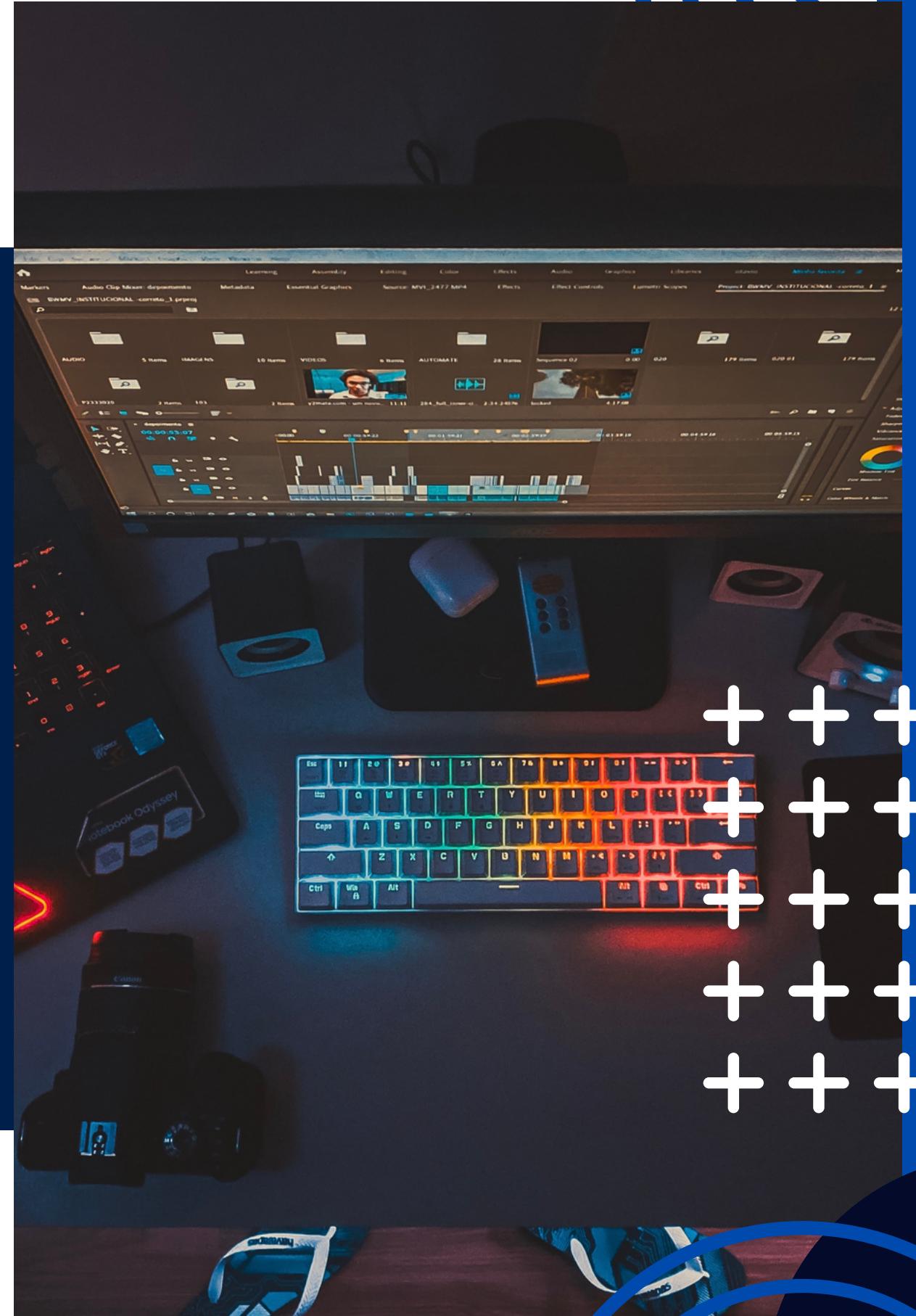
TOOLS

- **Github**
 - FOR CODE SHARING
- **Figma**
 - FOR UI DESIGN
- **Trello**
 - FOR TASK DISTRIBUTION
- **Jupyter Notebook**
 - FOR FRONTEND DEVELOPMENT
- **Visual Code**
 - FOR CHATBOT UI

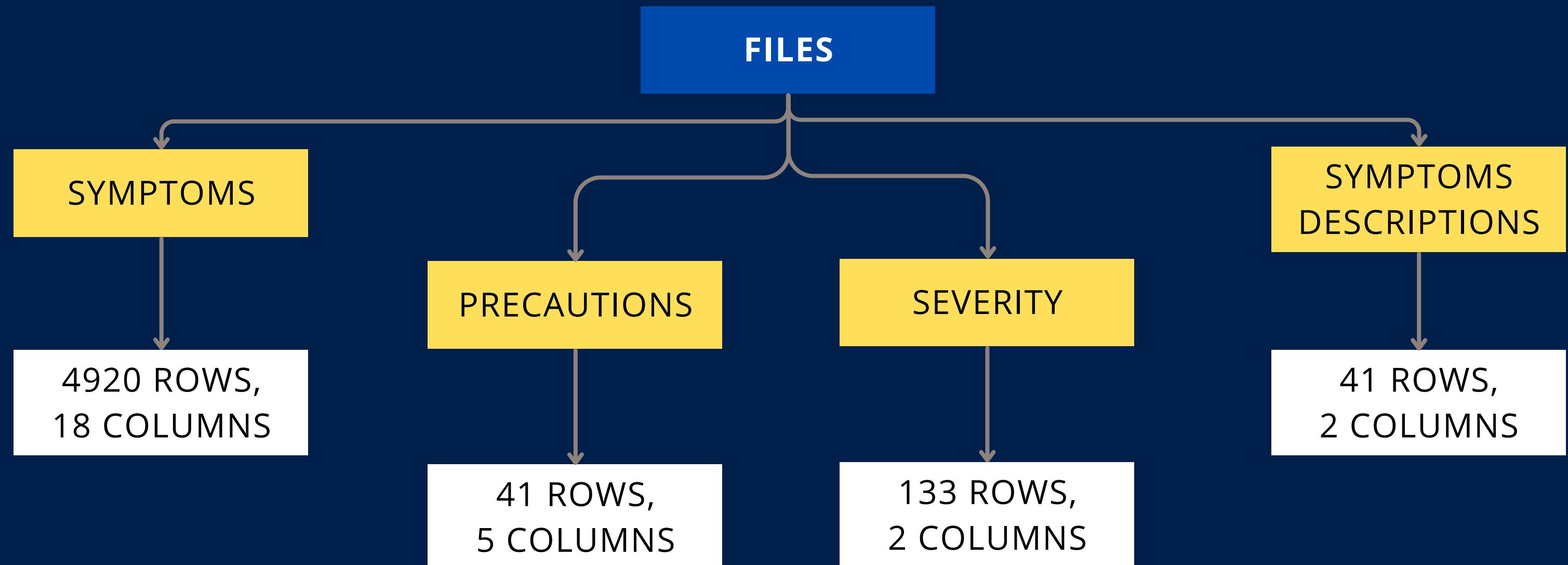


LIBRARIES

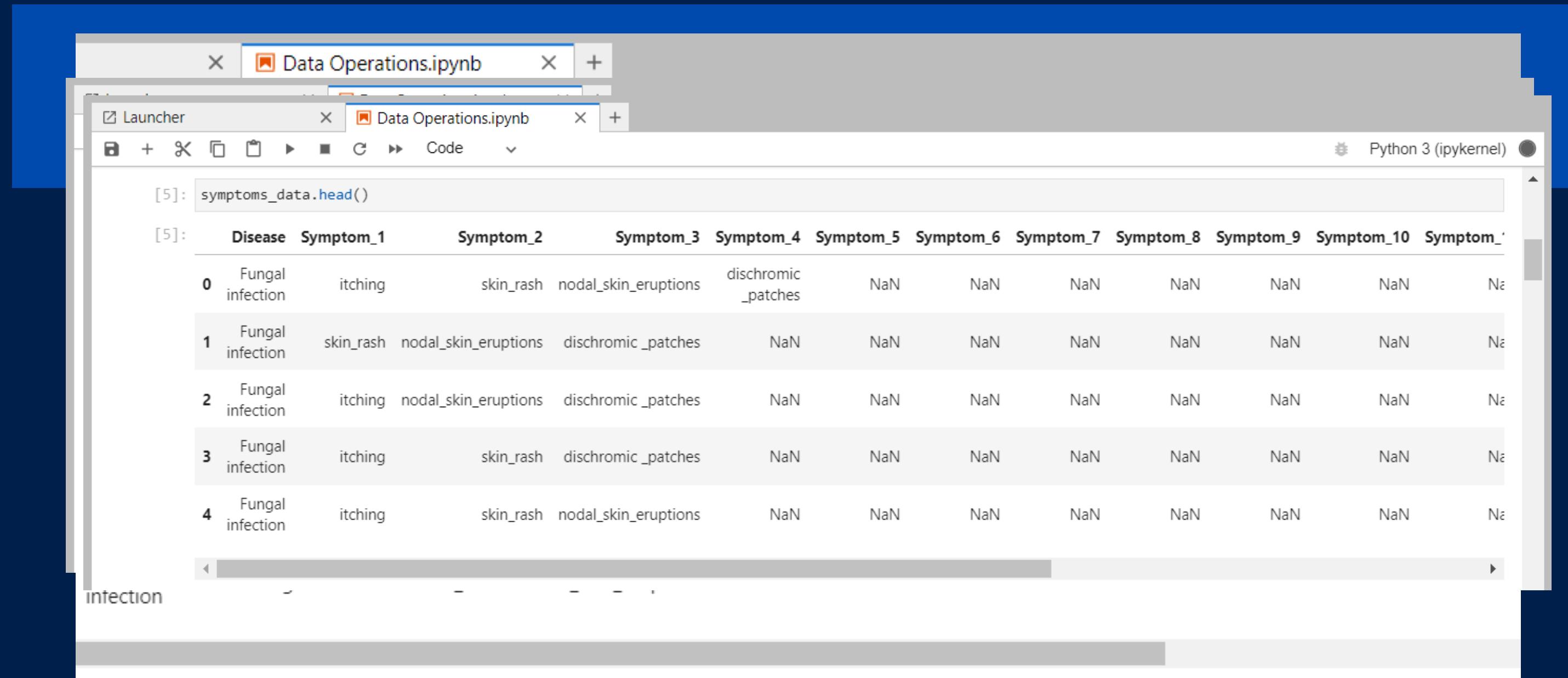
- **Wordnet**
 - FOR A LEXICAL DATABASE OF SEMANTIC RELATIONS BETWEEN WORDS
- **Spacy**
 - FOR NATURAL LANGUAGE PROCESSING
- **GridSearchCV**
 - EXHAUSTIVE SEARCH OVER SPECIFIED PARAMETER VALUES FOR AN ESTIMATOR.



DATA



DATA CLEANING



The screenshot shows a Jupyter Notebook interface with a blue header bar. The title bar says "Data Operations.ipynb". Below it, the toolbar includes icons for file operations, a search bar, and tabs for "Code" and "Python 3 (ipykernel)". The main area displays two code cells:

```
[5]: symptoms_data.head()
```

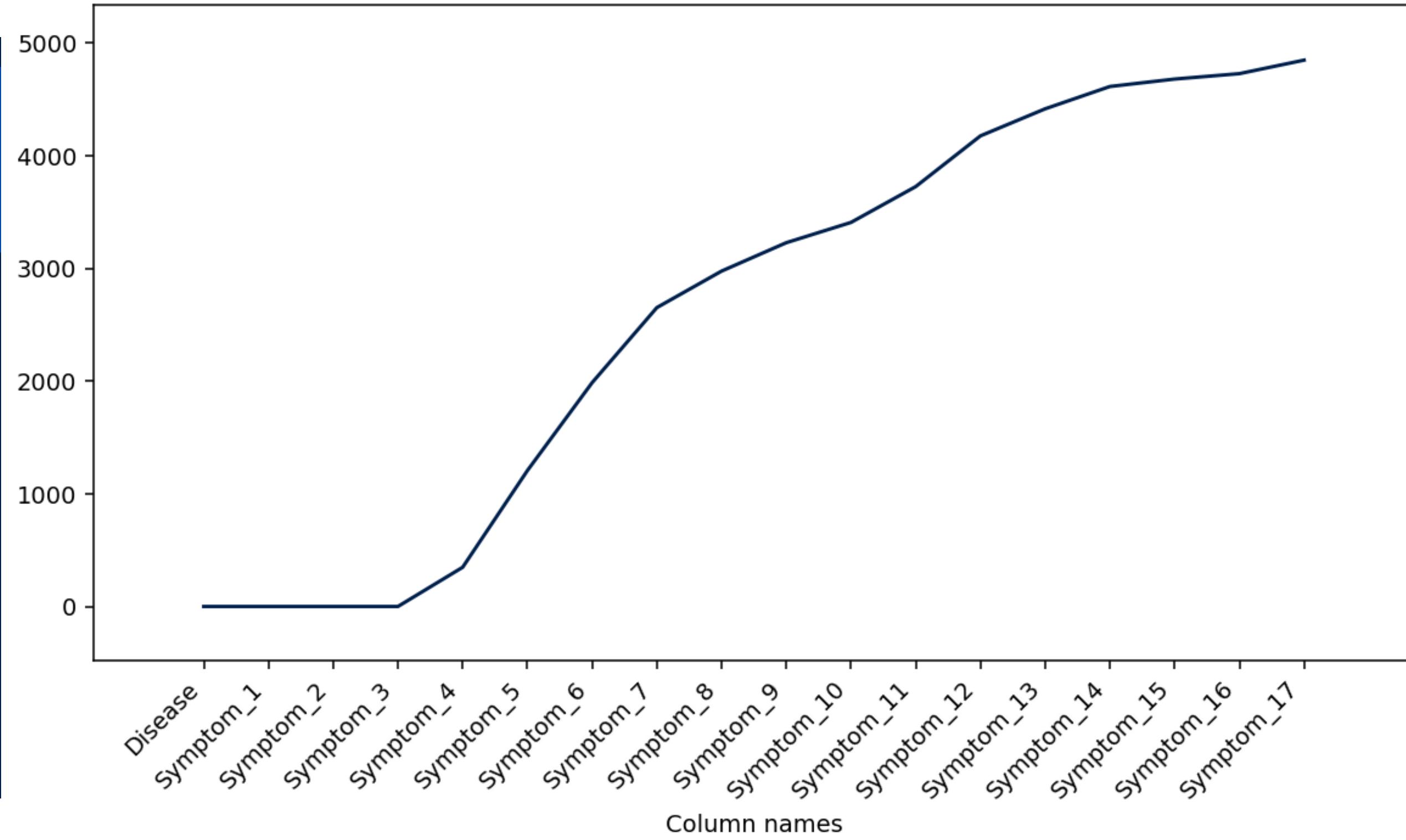
```
[5]:
```

	Disease	Symptom_1	Symptom_2	Symptom_3	Symptom_4	Symptom_5	Symptom_6	Symptom_7	Symptom_8	Symptom_9	Symptom_10	Symptom_11
0	Fungal infection	itching	skin_rash	nodal_skin_eruptions	dischromic_patches	NaN	NaN	NaN	NaN	NaN	NaN	NaN
1	Fungal infection	skin_rash	nodal_skin_eruptions	dischromic_patches	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN
2	Fungal infection	itching	nodal_skin_eruptions	dischromic_patches	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN
3	Fungal infection	itching	skin_rash	dischromic_patches	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN
4	Fungal infection	itching	skin_rash	nodal_skin_eruptions	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN

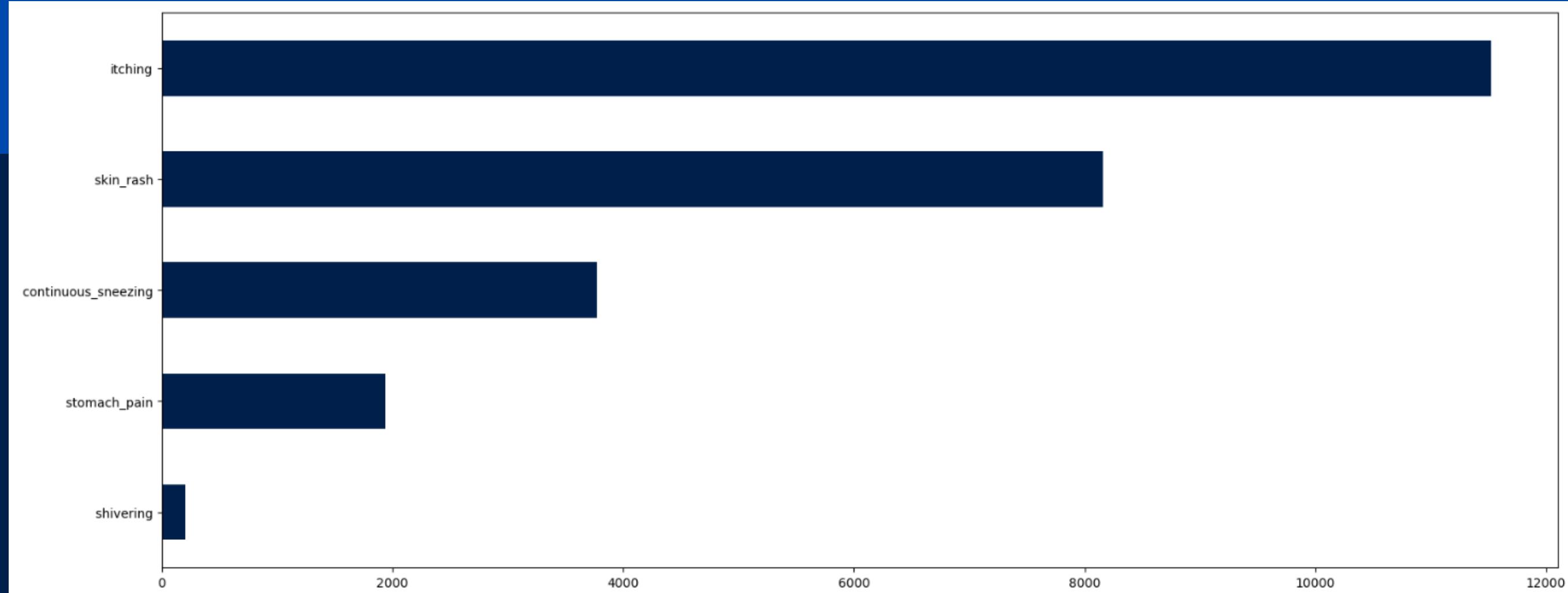
The notebook also shows a progress bar at the bottom labeled "Infection".

NULL VALUES

Null values



COMMON SYMPTOMS



DATA CONVERSION

Disease	Symptom_1	Symptom_2	Symptom_3	Symptom_4	Symptom_5	Symptom_6	Symptom_7	Symptom_8
Fungal infection	1	3	4	0	0	0	0	0
Fungal infection	3	4	0	0	0	0	0	0
Fungal infection	1	4	0	0	0	0	0	0
Fungal infection	1	3	0	0	0	0	0	0
Fungal infection	1	3	4	0	0	0	0	0



MODEL

```
from sklearn.tree import DecisionTreeClassifier
from sklearn.model_selection import GridSearchCV
from sklearn import metrics
tree = DecisionTreeClassifier()
tree_params = [{'max_depth': list(range(5, 15)), 'criterion': ["entropy", "gini"]}]
clf = GridSearchCV(tree, tree_params, cv = 10, scoring='accuracy')
clf.fit(X_train, y_train)
print(clf.best_params_)
print(clf.best_score_)

{'criterion': 'entropy', 'max_depth': 9}
1.0

decision_tree = DecisionTreeClassifier(max_depth=9, criterion="entropy")
decision_tree.fit(X_train, y_train)
print("Accuracy on training: {:.2f}".format(decision_tree.score(X_train, y_train)))
print("Accuracy on test: {:.2f}".format(decision_tree.score(X_test, y_test)))

Accuracy on training: 1.00
Accuracy on test: 1.00
```

DECISION TREE

MODEL

```
from sklearn.neighbors import KNeighborsClassifier
knn = KNeighborsClassifier()
knn_params= {"n_neighbors":list(range(1, 20))}

clf4 = GridSearchCV(knn, knn_params, cv = 10, scoring='accuracy')
clf4.fit(X_train, y_train)
print(clf4.best_params_)
print(clf4.best_score_)

{'n_neighbors': 1}
1.0

knn_model_1 = KNeighborsClassifier(n_neighbors=1)
knn_model_1.fit(X_train, y_train)
print("Accuracy on training: {:.2f}".format(knn_model_1.score(X_train, y_train)))
print("Accuracy on test: {:.2f}".format(knn_model_1.score(X_test, y_test)))

Accuracy on training: 1.00
Accuracy on test: 1.00
```

KNN

UI



Health Guard

www.healthguard.com

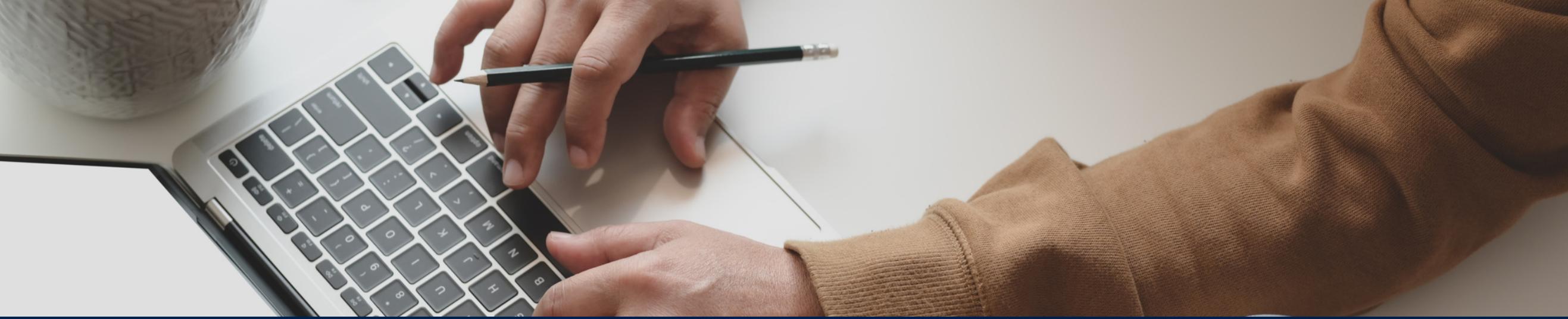
CLOSURE



- AFTER CREATING CHATBOT, WE WILL FINALLY DO THE TESTING PART AND FIX BUGS.
- SUBMIT THE PROJECT REPORT
- DELIVER OUR CHATBOT ' HEALTH GUARD'



FUTURE WORK



- DASHBOARD FOR ADMIN AND USERS FOR HISTORY
- MEDICINE SUGGESTIONS AND DOCTOR SUGGESTIONS
- INTEGRATE HEALTH APP WITH CHATBOT FOR BETTER SUGGESTIONS



THANK YOU!!

