

# DiabPred User Manual

Sarah Ahmed

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# Acknowledgements

- A small vote of thanks to everyone who has helped me in this journey of App Development – my parents, Mentors and Mr. Ken. I am extremely grateful to them for their encouragement and guidance throughout the development of my app.

# About Me..

- I am Sarah Ahmed. I am 16. I am in grade 12.
- I am interested in AI because I think AI will grow in demand and it will play a larger role in our everyday lives in the future. I like the problem-solving aspects of it and how it can perform tasks humanely and rationally without being explicitly directed.
- I hope to learn more about artificial intelligence and how it may be used in many applications.

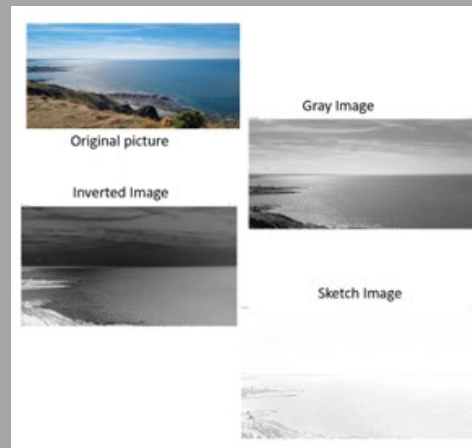


# About My Internship Journey with Clevered..

```
In [34]: from sklearn import tree
from sklearn.tree import DecisionTreeClassifier
import matplotlib.pyplot as plt

dtree = DecisionTreeClassifier(max_depth=2)
dtree = dtree.fit(x_train, y_train)
tree.plot_tree(dtree)

Out[34]: [Text(0.4, 0.375, 'G[0] = 0.3 (split = 0.400) samples = 11 (value = [4, 7])',
Text(0.1, 0.425, 'G[1] = 0.3 (split = 0.400) samples = 7 (value = [4, 0])',
Text(0.4, 0.425, 'G[1] = 0.3 (split = 0.400) samples = 4 (value = [3, 1])',
Text(0.4, 0.375, 'G[1] = 0.3 (split = 0.400) samples = 4 (value = [4, 0])',
Text(0.1, 0.125, 'G[0] = 0.3 (split = 0.400) samples = 4 (value = [4, 0])',
Text(0.4, 0.125, 'G[0] = 0.400 (split = 0.400) samples = 1 (value = [1, 2])',
Text(0.4, 0.375, 'G[0] = 0.400 (split = 0.400) samples = 3 (value = [4, 0])']]
```



```
# Label mapping
#Labels = '''T-shirt/top Trouser Pullover Dress Coat Saddle Shirt Sneaker Bag Ankle boot'''.split()

# select the image from our test dataset
image_number = 100

# display the image
plt.imshow(x_test[image_number])

# load the image in an array
x = np.array(x_test[image_number])

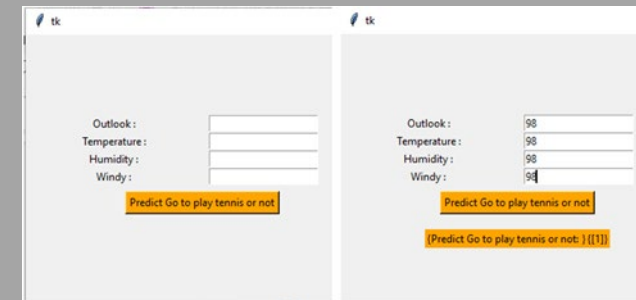
# reshape it
x = x.reshape(1, 28, 28, 1)

# pass in the network for prediction and
# save the predicted label
predicted_label = class_names[model.predict(x).argmax()]

# load the original label
original_label = class_names[x_test[image_number]]

# display the result
print("Original label is {} and predicted label is {}".format(
original_label, predicted_label))

Original label is Dress and predicted label is Dress
```



- My internship experience was positive because I learned a lot from the sessions and by doing the weekly home assignments. I enjoyed the process of making my app because I learned a lot of new skills that have greatly boosted my confidence. I am grateful for this opportunity to intern under Mr Ken as I feel inspired to take on more projects.



# About App..

- I am introducing my app DiabPred which is a diabetes prediction app. If it predicts that the person has diabetes, it will assist them in locating the closest GP and it will provide resources for guidance and treatment options. This app will also check for people who are at high risk for diabetes by looking at factors such as BMI, glucose, age and skin thickness and it will provide resources to them on how to reduce their risks for diabetes. The app will advise people at low risk of diabetes to maintain their healthy lifestyle.
- I think that this prediction app will benefit society by raising awareness of diabetes and guiding individuals to take care of themselves, resulting in a more health-conscious society. I hope that this prediction software will help people seek medical advice quickly, as well as act as a preventive tool, advising the user on what bad habits to avoid in order to reduce the risk of them developing diabetes.



The screenshot displays the DiabPred app interface. At the top, the title "DiabPred" is centered, followed by the instruction "Enter your details below". Below this, there are eight input fields, each preceded by a label: "Pregnancies :", "Glucose :", "BloodPressure :", "SkinThickness :", "Insulin :", "BMI :", "DiabetesPedigreeFunction :", and "Age :". A "Postcode :" label is positioned below the "Age :" label, but it does not have an adjacent input field. All input fields are empty. At the bottom of the form, there is an orange button with the text "Prediction for Diabetes". The background of the app interface features a light blue color with a faint, stylized molecular structure and a DNA double helix.

# How do I use this app?



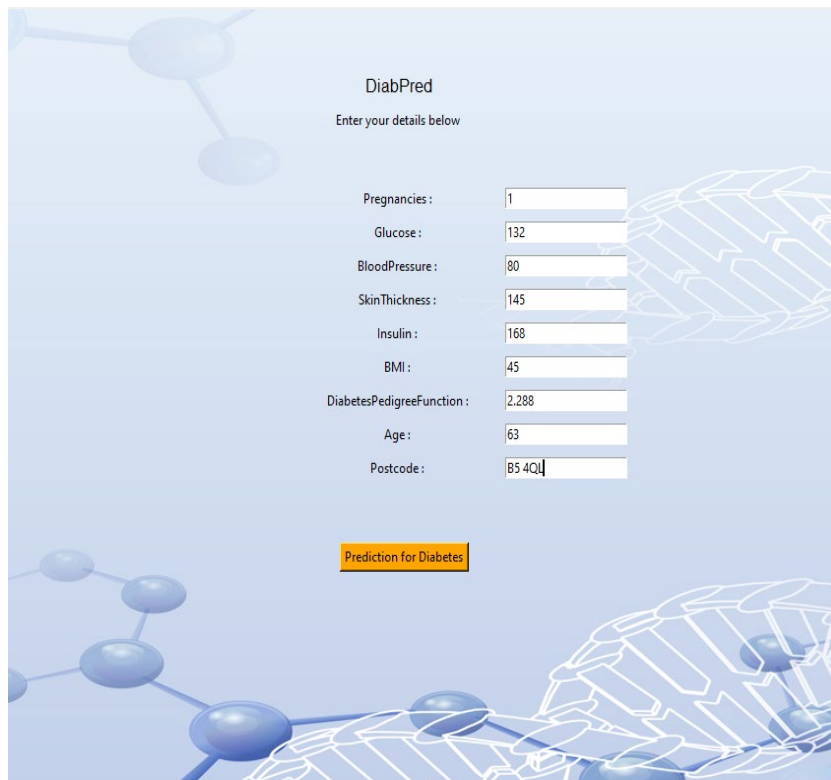
The screenshot shows the DiabPred app interface. At the top, the title "DiabPred" is displayed. Below it, the instruction "Enter your details below" is shown. There are ten input fields arranged vertically, each preceded by a label: "Pregnancies:", "Glucose:", "BloodPressure:", "SkinThickness:", "Insulin:", "BMI:", "DiabetesPedigreeFunction:", "Age:", and "Postcode:". Below these fields is a yellow button labeled "Prediction for Diabetes". The background of the app interface features a blue molecular structure and a white DNA double helix.

The app will show this screen so that the user can fill in their details. After filling in their details, they can use the predict button so that the app can predict if the person has diabetes.

# How do I use this app?

The user will see the screen in the middle below if the user has diabetes. It will provide them with helpful resources to show treatment options. It will also have a button to help them find the nearest GP which will take them to the NHS site which will show the results for the nearest GP based on the postcode they inputted at the start.

## What the user inputs:



DiabPred

Enter your details below

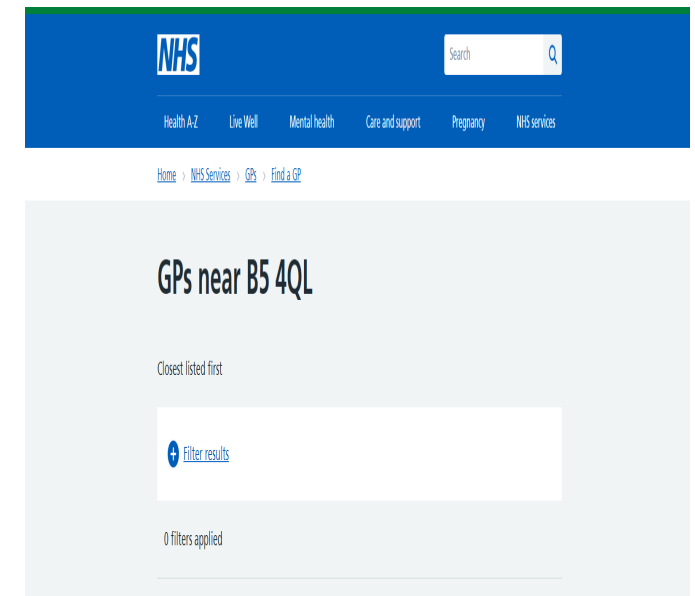
Pregnancies :	<input type="text" value="1"/>
Glucose :	<input type="text" value="132"/>
BloodPressure :	<input type="text" value="80"/>
SkinThickness :	<input type="text" value="145"/>
Insulin :	<input type="text" value="168"/>
BMI :	<input type="text" value="45"/>
DiabetesPedigreeFunction :	<input type="text" value="2.288"/>
Age :	<input type="text" value="63"/>
Postcode :	<input type="text" value="B5 4QL"/>

[Prediction for Diabetes](#)

## What the user sees:




The website the app will lead the user to when the user clicks on the button to find the nearest GP:





# How do I use this app?



No you don't have diabetes but you are at high risk for Diabetes. Here are some helpful links:

<https://www.nhs.uk/conditions/diabetes/>

<https://www.england.nhs.uk/diabetes/diabetes-prevention/>

<https://www.nhs.uk/better-health/>

The user will see this screen if they don't have diabetes and they are at high risk for diabetes. It will display website links that might help the user to lead a healthy lifestyle and prevent diabetes in the future.

# How do I use this app?



The user will see this screen if they don't have diabetes and they are at low risk for diabetes. It will display website links that might help the user to maintain a healthy lifestyle.

# Contact details

- Please reach out to me through my email [sarahahmed786001@gmail.com](mailto:sarahahmed786001@gmail.com) for any questions/ concerns/ suggestions on the App



Thank You