

ITW1
PYTHON ENDSEM ASSIGNMENT

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1.

(a)

We have to train a classifier to distinguish between different types of fruits using K - Nearest Neighbour and Logistic Regression (use link <https://scikit-learn.org/stable/>).

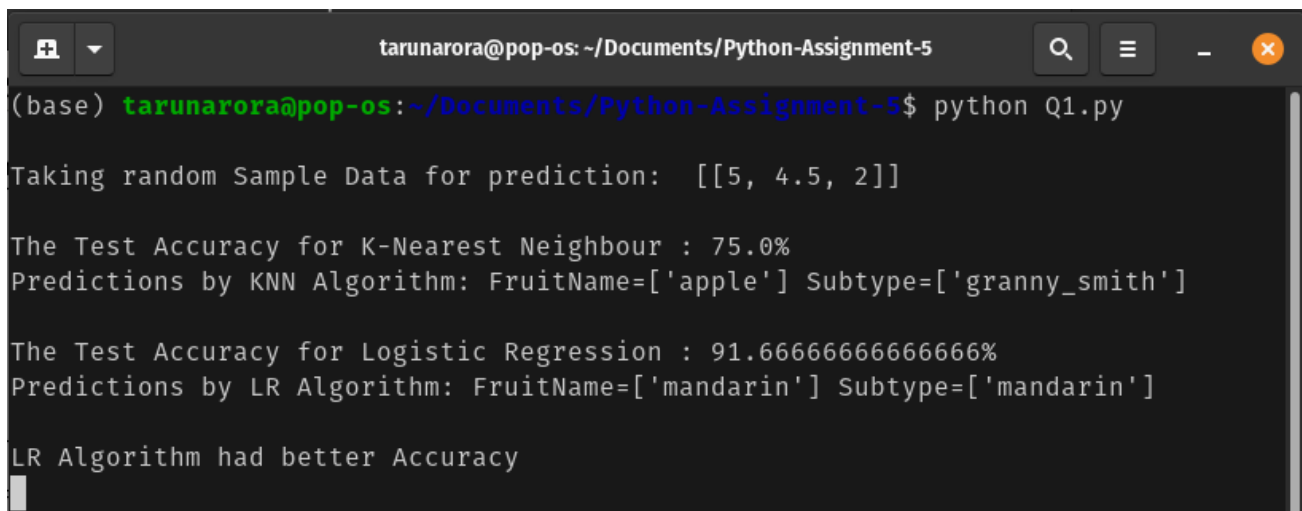
(b)

Present in both of them which algorithm works better.

(c)

Visualize the training data and classified data using matplotlib

Solution: -

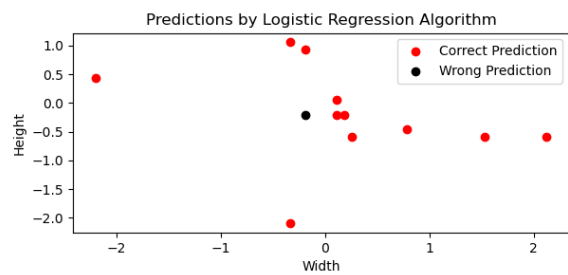
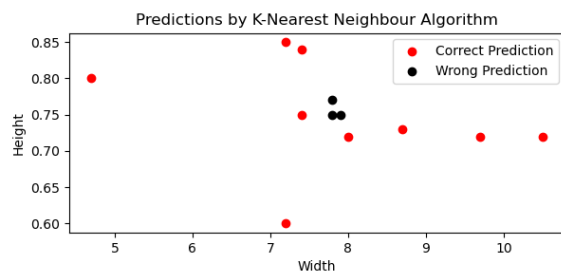
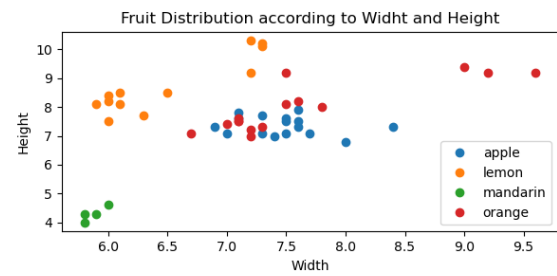
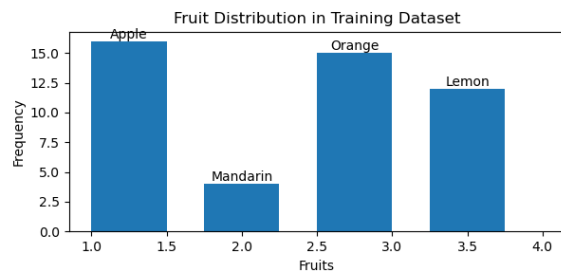
A terminal window titled 'tarunarora@pop-os: ~/Documents/Python-Assignment-5' with search, menu, and window control icons. The terminal shows the execution of 'python Q1.py'. The output includes: 'Taking random Sample Data for prediction: [[5, 4.5, 2]]', 'The Test Accuracy for K-Nearest Neighbour : 75.0%', 'Predictions by KNN Algorithm: FruitName=['apple'] Subtype=['granny_smith']', 'The Test Accuracy for Logistic Regression : 91.66666666666666%', 'Predictions by LR Algorithm: FruitName=['mandarin'] Subtype=['mandarin']', and 'LR Algorithm had better Accuracy'.

```
(base) tarunarora@pop-os:~/Documents/Python-Assignment-5$ python Q1.py
Taking random Sample Data for prediction: [[5, 4.5, 2]]

The Test Accuracy for K-Nearest Neighbour : 75.0%
Predictions by KNN Algorithm: FruitName=['apple'] Subtype=['granny_smith']

The Test Accuracy for Logistic Regression : 91.66666666666666%
Predictions by LR Algorithm: FruitName=['mandarin'] Subtype=['mandarin']

LR Algorithm had better Accuracy
```



2.

(a) We have to predict whether the patient has diabetes or not based on various features given in the dataset.

(b) Visualize the training data and classified data using matplotlib.

Solution: -

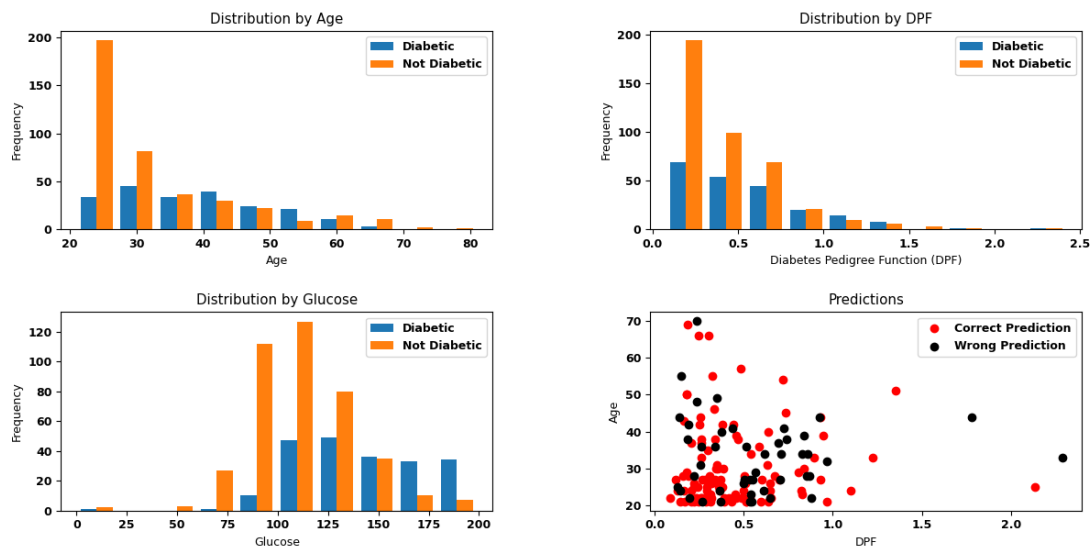
```
tarunarora@pop-os: ~/Documents/Python-Assignment-5
(base) tarunarora@pop-os:~/Documents/Python-Assignment-5$ python Q2.py

The Test Accuracy for K-Nearest Neighbour : 70.12987012987013%

Taking random Sample Data for prediction: [[5, 132, 80, 0, 0, 26.8, 0.186, 42]]

Predictions: Not Diabetic
```

Figure 1



3. Menu Calculator (Use Basic Python)

Solution: -

```
tarunarora@pop-os: ~/Documents/Python-Assignment-5
(base) tarunarora@pop-os:~/Documents/Python-Assignment-5$ python Q3.py
MENU CALCULATOR

MENU CARD

1. Chicken Strips - $3.5
2. French Fries - $2.5
3. Hamburger - $4.0
4. Hotdog - $3.5
5. Large Drink - $1.75
6. Medium Drink - $1.5
7. Milk Shake - $2.25
8. Salad - $3.75
9. Small Drink - $1.25

Enter exit to terminate.

Enter your order: 1213456
ITEMS ORDERED
Chicken Strips : 2
French Fries : 1
Hamburger : 1
Hotdog : 1
Large Drink : 1
Medium Drink : 1

Total Cost : $20.25

Press enter to continue: 
```

Error Checking: -

```
tarunarora@pop-os: ~/Documents/Python-Assignment-5
MENU CARD

1. Chicken Strips - $3.5
2. French Fries - $2.5
3. Hamburger - $4.0
4. Hotdog - $3.5
5. Large Drink - $1.75
6. Medium Drink - $1.5
7. Milk Shake - $2.25
8. Salad - $3.75
9. Small Drink - $1.25

Enter exit to terminate.

Enter your order: 0098
Some items ordered are not available in the menu.

Press enter to continue: 
```

4. Create a small address book (Use Basic Python)

Solution: -

```
tarunarora@pop-os: ~/Documents/Python-Assignment-5
(base) tarunarora@pop-os:~/Documents/Python-Assignment-5$ python Q4.py
Welcome to Address Book.

Enter 1 to add contact.
Enter 2 to Display contacts.
Enter 3 to delete contact.
Enter 4 to modify contact.
Enter 5 to search contact.
Enter 0 to exit.

Enter a option : 1
Enter the contact details.
Enter Contact Name : Tarun
Contact name already exists.

Enter the contact details.
Enter Contact Name : Tarun Arora
Enter Contact Email I'd : ok@gmail.com
Enter Contact Phone no. : 7878787878
Contact Successfully Created !

Press enter to continue: 
```

```
tarunarora@pop-os: ~/Documents/Python-Assignment-5
Welcome to Address Book.

Enter 1 to add contact.
Enter 2 to Display contacts.
Enter 3 to delete contact.
Enter 4 to modify contact.
Enter 5 to search contact.
Enter 0 to exit.

Enter a option : 2
Contact_email Contact_phone
Contact_name
Tarun Willtell@gmail.com 8787878787
Tarun Arora ok@gmail.com 7878787878

Press enter to continue: 
```

```
tarunarora@pop-os: ~/Documents/Python-Assignment-5
Welcome to Address Book.

Enter 1 to add contact.
Enter 2 to Display contacts.
Enter 3 to delete contact.
Enter 4 to modify contact.
Enter 5 to search contact.
Enter 0 to exit.

Enter a option : 3
Enter contact name to be deleted : Tarun

Contact successfully deleted.

Press enter to continue: 
```

```
tarunarora@pop-os: ~/Documents/Python-Assignment-5
Welcome to Address Book.

Enter 1 to add contact.
Enter 2 to Display contacts.
Enter 3 to delete contact.
Enter 4 to modify contact.
Enter 5 to search contact.
Enter 0 to exit.

Enter a option : 4
Enter contact name to be modified : Tarun Arora
Enter Contact New Name : Tarun
Enter Contact New Email I'd : tarun.arora.cse20@iitbhu.ac.in
Enter Contact New Phone no. : 9988776655
Contact Details Successfully Modified !

Press enter to continue: 
```



```
tarunarora@pop-os: ~/Documents/Python-Assignment-5
Welcome to Address Book.

Enter 1 to add contact.
Enter 2 to Display contacts.
Enter 3 to delete contact.
Enter 4 to modify contact.
Enter 5 to search contact.
Enter 0 to exit.

Enter a option : 5
Enter Contact Name : Tarun
Contact details.

Contact name : Tarun
Email I'd : tarun.arora.cse20@iitbhu.ac.in
Phone no. : 9988776655

Press enter to continue: 
```

***** EOF *****