Bahria University,

Karachi Campus



LAB EXPERIMENT NO.

12

LIST OF TASKS

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| --- | --- |
| TASK NO | OBJECTIVE |
| 1 | Using python implement Decision Tree Algorithm on Heart Attack Analysis & prediction dataset to predict the chances of heart failure in a person. visualize the results of the model in the form of a confusion matrix using matplotlib and seaborn. |
| 2 | Perform the parameter tuning to optimize the Decision Tree performance and compare the results with task # 1. |
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Submitted On:

# **Task 1:**Using python implement Decision Tree Algorithm on Heart Attack Analysis & prediction dataset to

# predict the chances of heart failure in a person. visualize the results of the model in the form of a confusion

# matrix using matplotlib and seaborn.

**CODE & OUTPUT:**

A picture containing application

Description automatically generated

Graphical user interface, text, application, email

Description automatically generated

Graphical user interface, text, application, email

Description automatically generated

Graphical user interface, text, application

Description automatically generated

A picture containing chart

Description automatically generated

Text

Description automatically generated

Graphical user interface

Description automatically generated with low confidence

**Task 2:** Perform the parameter tuning to optimize the Decision Tree performance and compare the results with task # 1.

**CODE & OUTPUT :**

Graphical user interface, text, application

Description automatically generated

**EXPLANATION:**

Hyperparameter tuning is a vital aspect of increasing model performance. Given a complex model with many hyperparameters, effective hyperparameter tuning may drastically improve performance. By haperoarameter tuning we get more accuracy in prediction and our system prediction level increase from 72% to 79%.