Practical session **Lab session Week 18th August 2025**

Instructions: Finished output screens (1, 2, 3, 4 and 5) to bee send via email (jmutuku@unam.na). Both activity 1 and Activity 2 which should be completed in today's session.

Activity 1

Finding Association Rules for Buying data.

Description:

In data mining, association rule learning is a popular and well researched method for discovering interesting relations between variables in large databases. It can be described as analysing and presenting strong rules discovered in databases using different measures of interestingness. In market basket analysis association rules are used and they are also employed in many application areas including Web usage mining, intrusion detection and bioinformatics.

Creation of Buying Table:

Procedure:

1) Open Start □ Programs □ Accessories □ Notepad

2) Type the following training data set with the help of Notepad for Buying Table.

@relation buying

@attribute age {L20,20-40,G40}

@attribute income {high,medium,low}

@attribute stud {yes,no}

@attribute creditrate {fair,excellent}

@attribute buyscomp {yes,no}

@data

L20,high,no,fair,yes

20-40,low,yes,fair,yes

G40,medium,yes,fair,yes

L20,low,no,fair,no

G40,high,no,excellent,yes

L20,low,yes,fair,yes

20-40,high,yes,excellent,no

G40,low,no,fair,yes

L20,high,yes,excellent,yes

G40,high,no,fair,yes

L20,low,yes,excellent,no

G40,high,yes,excellent,no

20-40,medium,yes,excellent,yes

L20,medium,yes,fair,yes

G40,high,yes,excellent,yes

3) After that the file is saved with .arff file format.

4) Minimize the arff file and then open Start □ Programs □ weka-3-4.

5) Click on weka-3-4, then Weka dialog box is displayed on the screen.

6) In that dialog box there are four modes, click on explorer.

7) Explorer shows many options. In that click on 'open file' and select the arff file

8) Click on edit button which shows buying table on weka.

Email 1 Screen shorts

Output the Training Data Set Buying Table and save the screen short of the viewer (Should be emailed later)

Procedure for Association Rules:

1) Open Start □ Programs □ Weka-3-4 □ Weka-3-4

2) Open explorer.

3) Click on open file and select buying.arff

4) Select Associate option on the top of the Menu bar.

5) Select Choose button and then click on Apriori Algorithm.

6) Click on Start button and output will be displayed on the right side of the window

Email 2 Screen shorts

Output that was displayed on the right side of the window should be saved (Emailed later)

Activity 2

Aim:

To Construct Decision Tree for Weather data and classify it.

Description:

Classification & Prediction:

Classification is the process for finding a model that describes the data values and concepts for the

purpose of Prediction.

Decision Tree:

A decision Tree is a classification scheme to generate a tree consisting of root node, internal nodes and external nodes. Root nodes representing the attributes. Internal nodes are also the attributes. External nodes are the classes and each branch represents the values of the attributes. Decision Tree also contains set of rules for a given data set; there are two subsets in Decision Tree. One is a Training data set and second one is a Testing data set. Training data set is previously classified data.

Testing data set is newly generated data.

Creation of Weather Table:

Procedure:

1) Open Start □ Programs □ Accessories □ Notepad

2) Type the following training data set with the help of Notepad for Weather Table.

@relation weather

@attribute outlook {sunny, rainy, overcast}

@attribute temperature numeric

@attribute humidity numeric

@attribute windy {TRUE, FALSE}

@attribute play {yes, no}

@data

sunny,85,85,FALSE,no

sunny,80,90,TRUE,no

overcast,83,86,FALSE,yes

rainy,70,96,FALSE,yes

rainy,68,80,FALSE,yes

rainy,65,70,TRUE,no

overcast,64,65,TRUE,yes

sunny,72,95,FALSE,no

sunny,69,70,FALSE,yes

rainy,75,80,FALSE,yes

sunny,75,70,TRUE,yes

overcast,72,90,TRUE,yes

overcast,81,75,FALSE,yes

rainy,71,91,TRUE,no

3) After that the file is saved with .arff file format.

4) Minimize the arff file and then open Start Programs weka-3-4

5) Click on weka-3-4, then Weka dialog box is displayed on the screen.

6) In that dialog box there are four modes, click on explorer.

7) Explorer shows many options. In that click on 'open file' and select the arff file

8) Click on edit button which shows weather table on weka.

Email 3 Screen shorts

Output the Training Data Set Weather Table and save the screen short of the viewer (Should be emailed later)

Procedure for Decision Trees:

1) Open Start Programs Weka-3-4 Weka-3-4

2) Open explorer.

3) Click on open file and select weather.arff

4) Select Classifier option on the top of the Menu bar.

5) Select Choose button and click on Tree option.

6) Click on J48.

7) Click on Start button and output will be displayed on the right side of the window.

8) Select the result list and right click on result list and select Visualize Tree option.

9) Then Decision Tree will be displayed on new window

Email 4 and 5 Screen shorts

Output that was displayed and the decision tree on the right side of the window should be saved(Note 2 screen shorts expected here a viewer screen and a decision tree screen) (Emailed later)