**PRATHMESH PATIL**

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**BCA SEM 4**

**BI Lab**

1 B) Implement data classification decision tree in R.

Ans:-

Step 1:- Installing package called party:-

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Step 2:- Checking Package description and stats

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Graphical user interface, text, application

Description automatically generated

Step 3:- tracking and finding the packages and uploading to libraray

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Step 4:- uploading data in R studio.

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Step 5:- Installing packages rpart and rpart.plot and uploading to library.

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Step 6:- Displaying Dataset in various format.

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Step 7:- Applying condition on dataset and display the output of the condition.

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Q-2 Explain Classification. Explain a probabilistic based classifier along with an example

Ans:-

1. The CART or Classification & Regression Trees methodology was introduced in 1984 by Leo Breiman, Jerome Friedman, Richard Olshen and Charles Stone as an umbrella term to refer to the following types of decision trees.
2. Classification Trees is where the target variable is categorical and the tree is used to identify the "class" within which a target variable would likely fall into.The representation of a CART model is a binary tree. Each node represents a single input variable (x) and a split on that variable. The leaf node of the tree contains an output variable (y) which is used for making a prediction.
3. Navie Probabilistic based classifier. It uses the Bayes theorem and incorporates evidences and prior knowledge in its predictions. It assumes that instances are independent of each other which is a rather unrealistic assumption in real world.
4. It can be trained very efficiently in supervised learning setting.
5. For example:-

P(C|A)=[P(A|C)P(C)]/P(A)