

# **CUSTOMER CHURN PREDICTION**

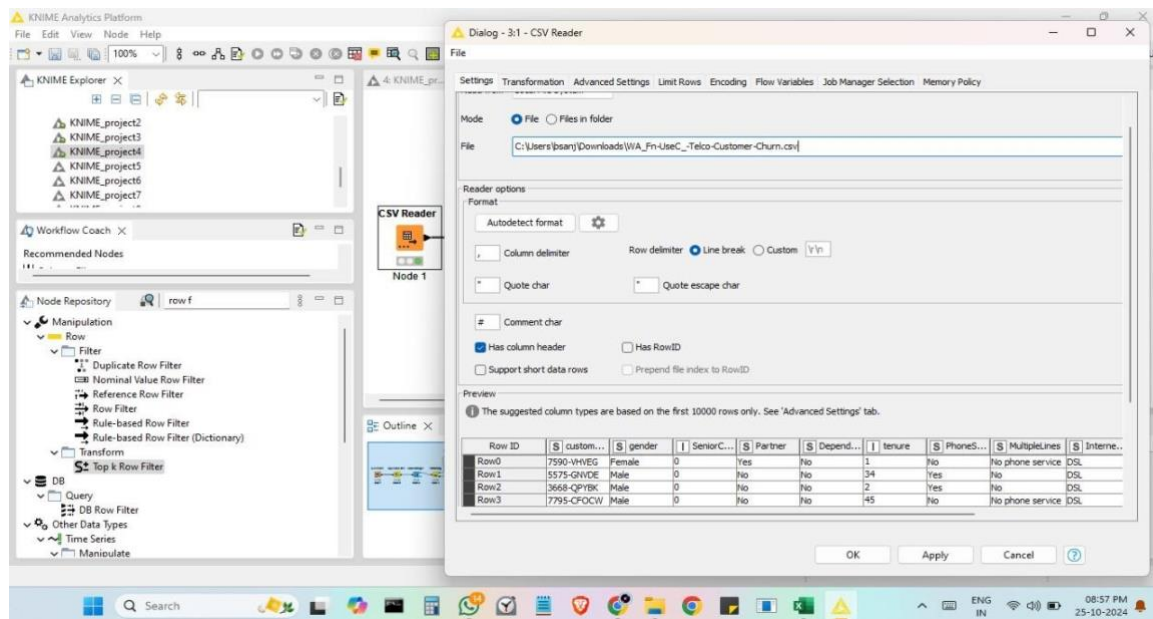
**AIM:** To create Customer churn prediction data model using Decision tree Learner and predictor in Knime platform

## **ALGORITHM:**

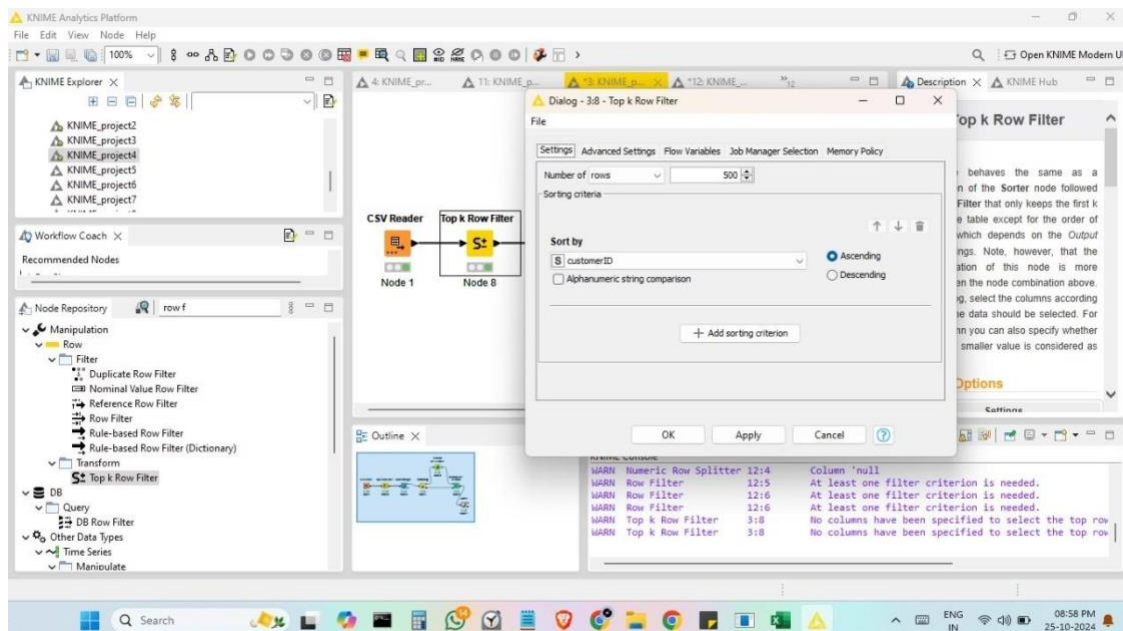
**STEP 1:** Download the customer churn data set from Kaggle website.

**STEP 2:** Open the knime platform.

**STEP 3:** In the node repository, search for CSV READER. Drag the node repository to the project area. Right-click CSV Reader node. Select Compile. In the new screen, click Browse. Select the file we downloaded earlier, Click apply and OK. Execute the node.



**STEP 4:** Search for Top K row filter node from the node repository. Drag it to the workspace, It used to reduce and adjust the number of rows .Compile and execute it.



**STEP 5:** Search for colour manager node in the node repository. Drag it to the workspace. Compile it.

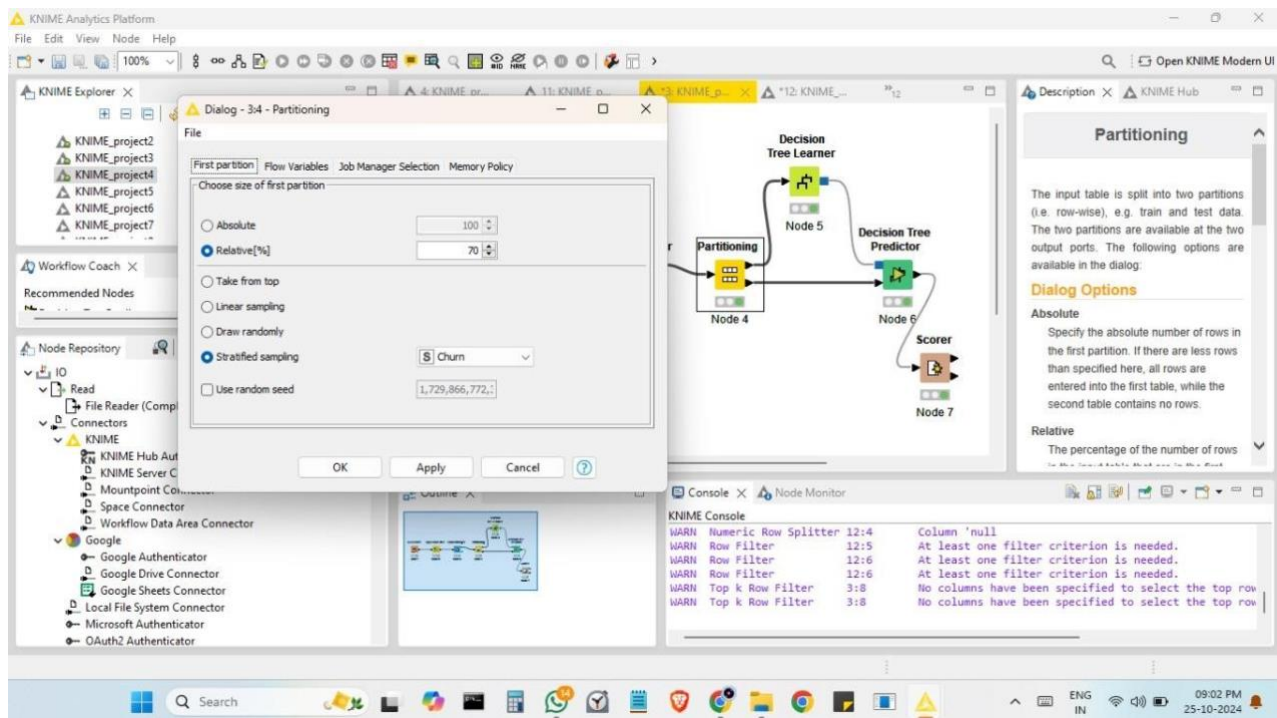
Colour manager is mainly used to differentiate the output in colours ,then execute it.

The top screenshot shows the KNIME Analytics Platform interface. The main workspace contains a workflow with three nodes: CSV Reader (Node 1), Top k Row Filter (Node 8), and Color Manager (Node 3). The Color Manager dialog box is open, showing the 'Color by...' tab. The 'Nominal' radio button is selected, and the 'Color by...' dropdown is set to 'Churn'. The 'Preview' section shows a color palette with three sets of colors: Set 1 (red, green, blue, yellow, orange, purple, pink, light blue, light green, light yellow, light orange, light purple), Set 2 (red, green, blue, yellow, orange, purple, pink, light blue, light green, light yellow, light orange, light purple), and Set 3 (colorblind safe) (red, green, blue, yellow, orange, purple, pink, light blue, light green, light yellow, light orange, light purple). The 'Custom' radio button is selected.

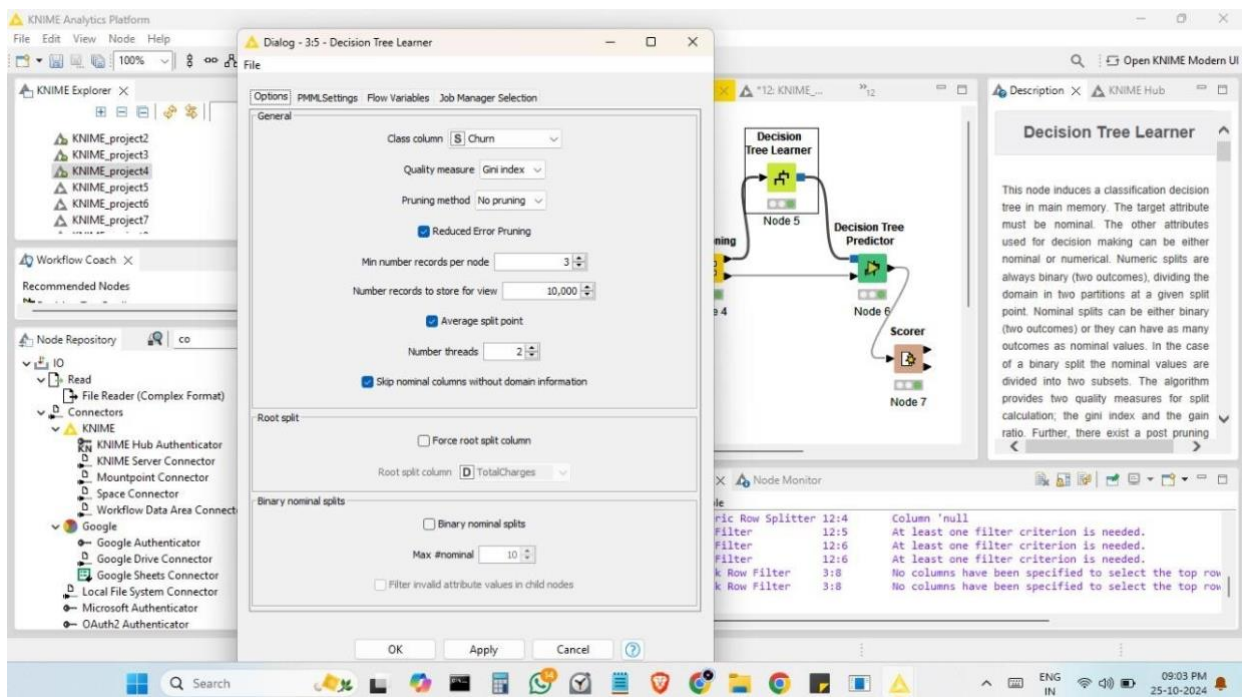
The bottom screenshot shows the same KNIME Analytics Platform interface, but with a more complex workflow. The main workspace contains a workflow with five nodes: CSV Reader (Node 1), Top k Row Filter (Node 8), Color Manager (Node 3), Partitioning (Node 4), and Decision Tree Predictor (Node 5). The Color Manager dialog box is open, showing the 'Color by...' tab. The 'Nominal' radio button is selected, and the 'Color by...' dropdown is set to 'Churn'. The 'Preview' section shows a color palette with three sets of colors: Set 1 (red, green, blue, yellow, orange, purple, pink, light blue, light green, light yellow, light orange, light purple), Set 2 (red, green, blue, yellow, orange, purple, pink, light blue, light green, light yellow, light orange, light purple), and Set 3 (colorblind safe) (red, green, blue, yellow, orange, purple, pink, light blue, light green, light yellow, light orange, light purple). The 'Custom' radio button is selected.

The bottom screenshot also shows a table view of data. The table has 500 rows and 21 columns. The columns are: Row ID, S custom..., S gender, I SeniorC..., S Partner, S Depend..., I tenure, S PhoneS..., S Multiple..., S Intern..., S OnlineS..., and S. The table contains data for various rows, including Row 2372, Row 5438, Row 1706, Row 840, Row 4735, Row 1257, Row 6160, Row 4663, Row 6663, Row 5015, Row 2530, Row 595, Row 2795, Row 5764, Row 7010, Row 1423, Row 5309, Row 3390, Row 1849, and Row 6385.

**STEP 6:** Search for partitioning node in the node repository. Drag it to the workspace. Compile it Using this node you can send some data for testing and some data for training. Execute it.

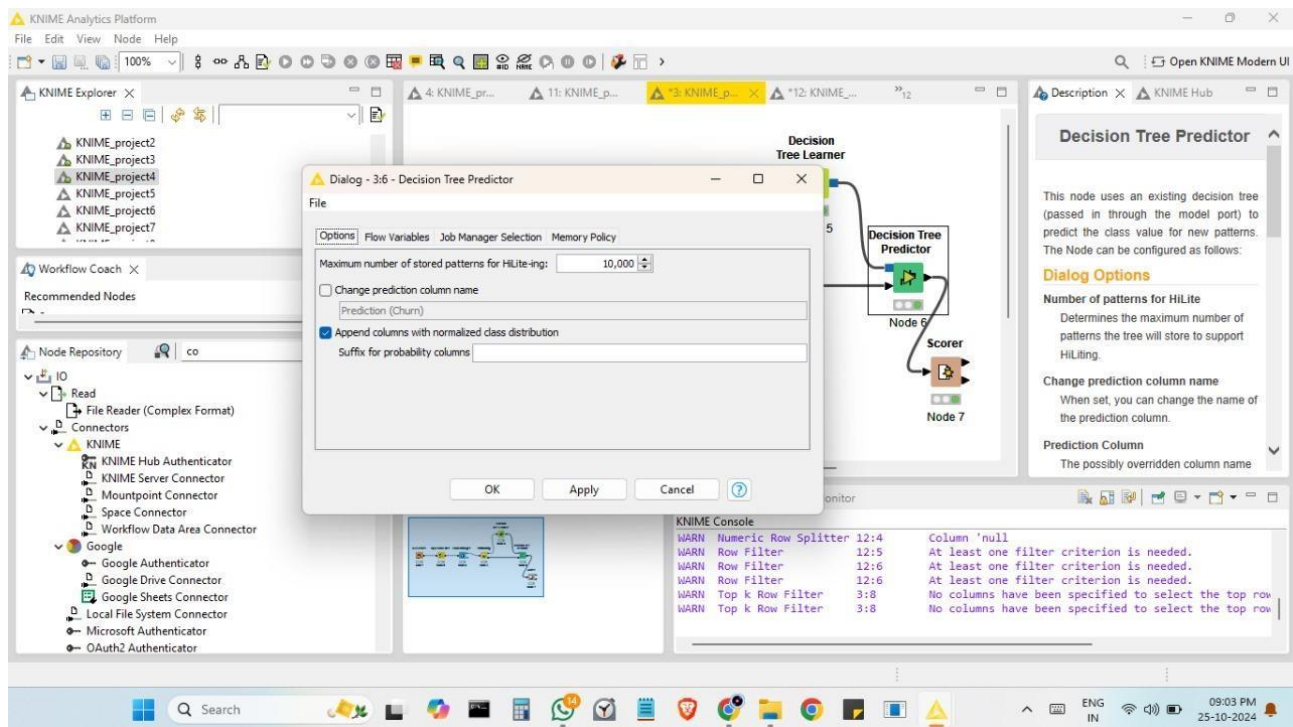


**STEP 7:** Search for decision tree learner node in the node repository. Drag it to the workspace. Compile and execute it

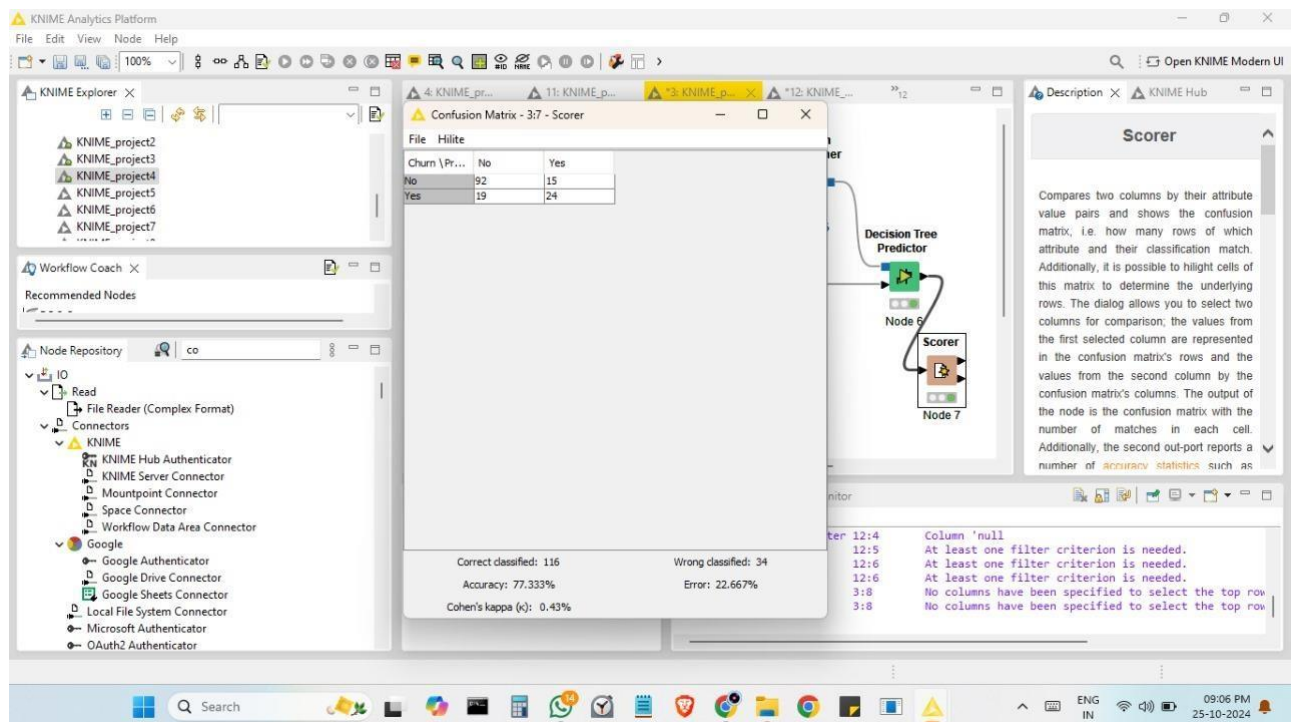
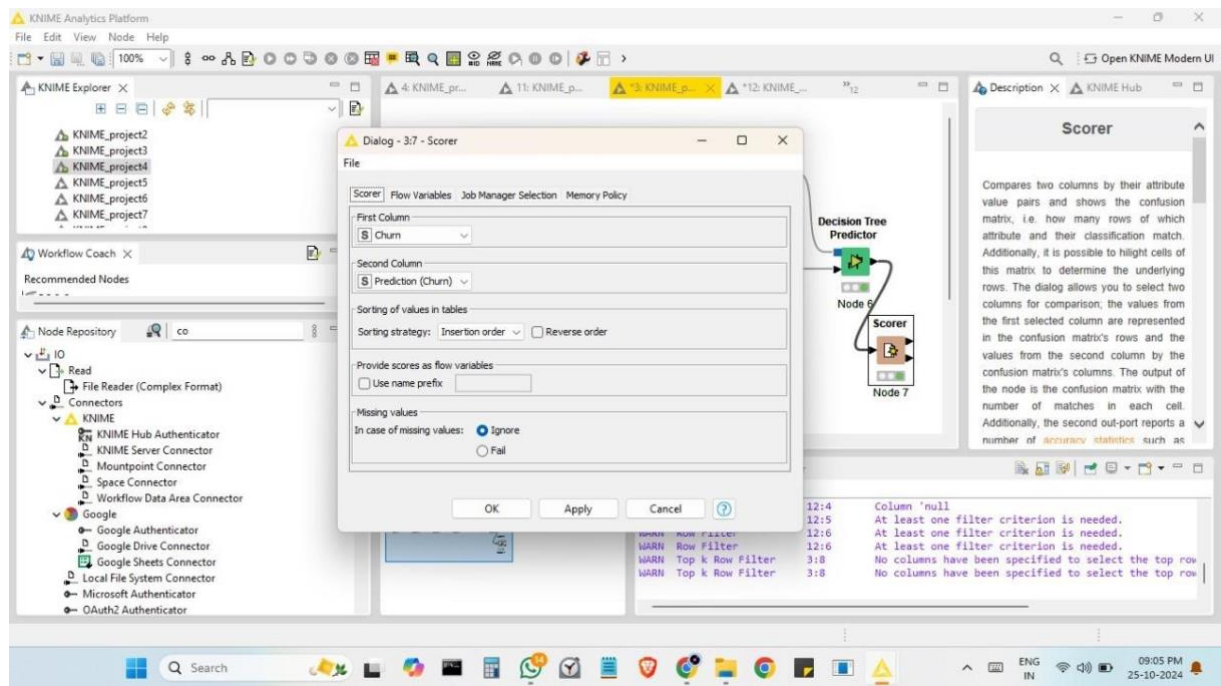


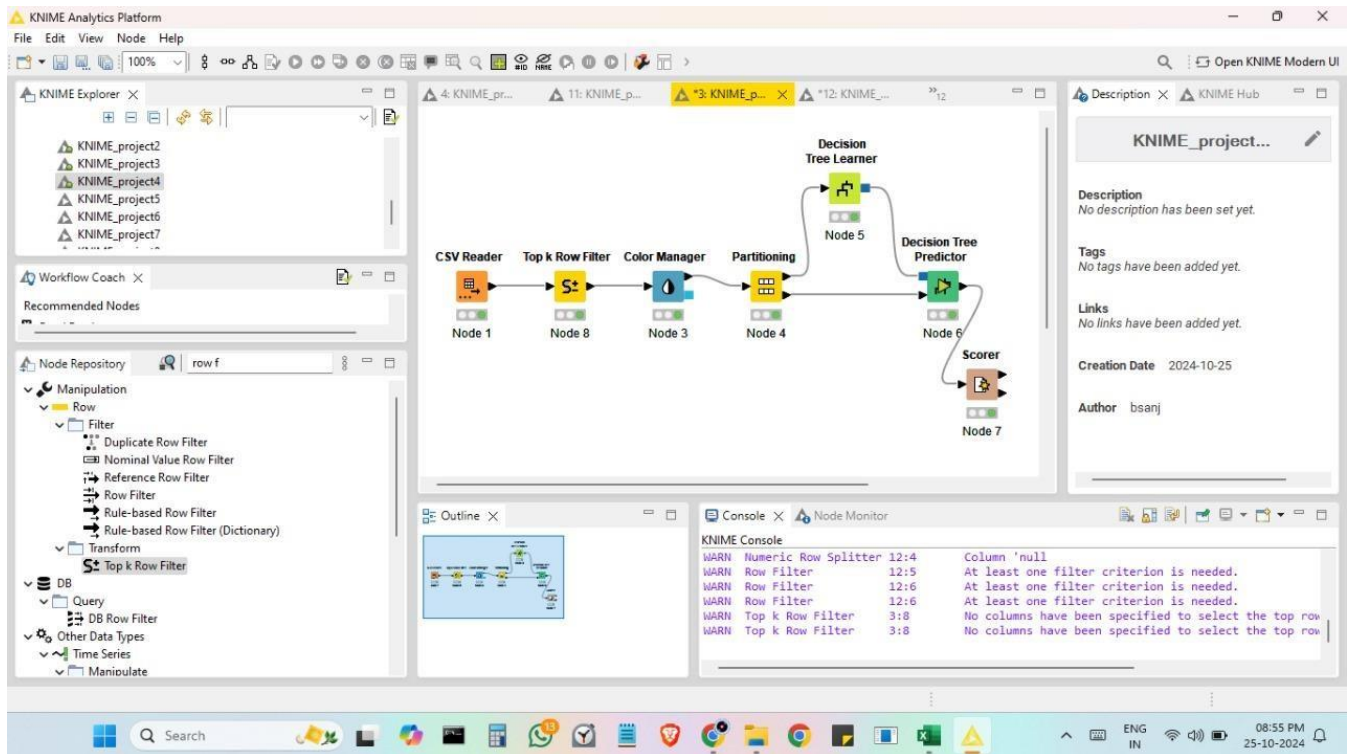


**STEP 8:** Search for decision tree predictor node in the node repository. Drag it to the workspace. Compile and execute it.



**STEP 9:** Search for scorer node in the node repository. Drag it to the workspace. Compile it. select the first and second column that is used to be display in the output. Scorer is mainly used to view the confusion matrix where it shows the accuracy of the model. Execute it.





**Conclusion:** The customer churn prediction model is trained and tested using decision tree in the knime platform and accuracy is verified.

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