

School Of Computer Application

Bachelors of Computer Applications



Babu Banarasi Das University

Lucknow

Academic Session 2025 – 2026

PRACTICAL PROJECT REPORT

on

Telco Customer Churn Prediction using IBM SPSS Modeler

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Class: BCADS32

Subject: Predictive Analytics

Course: BCA DS&AI

Submitted to:

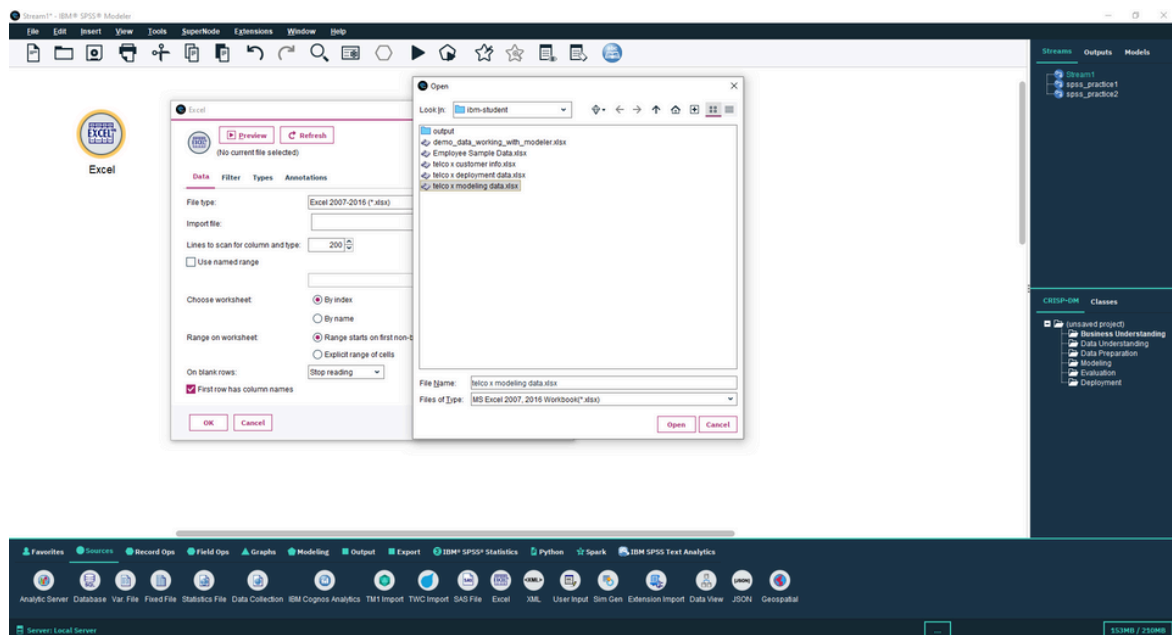
Mr. Ayushman Bhadauria

Practical

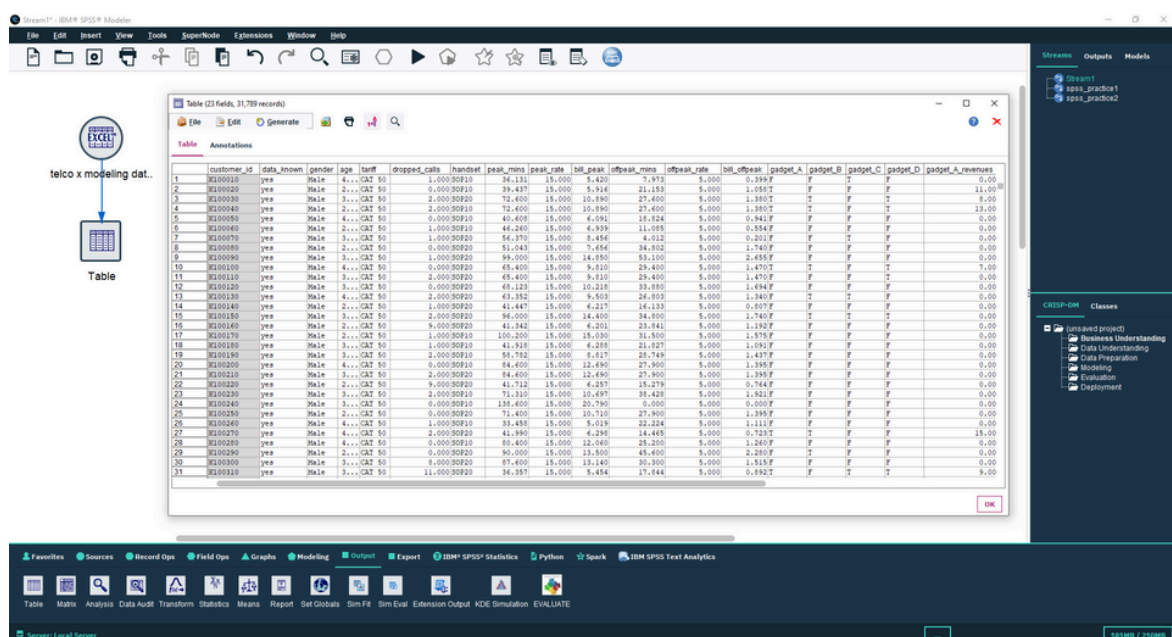
Objective: To train a churn prediction model on telco modeling dataset and test the model on telco deployment dataset and save/export the result.

Steps:

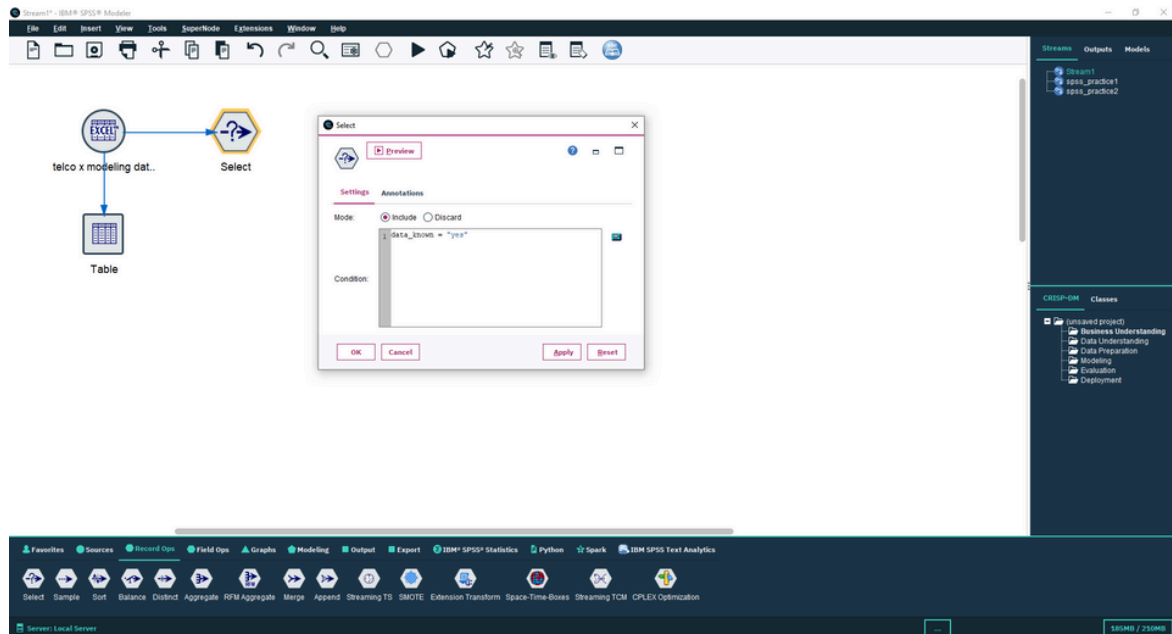
- import dataset using Excel node from the source pallet, and select the dataset



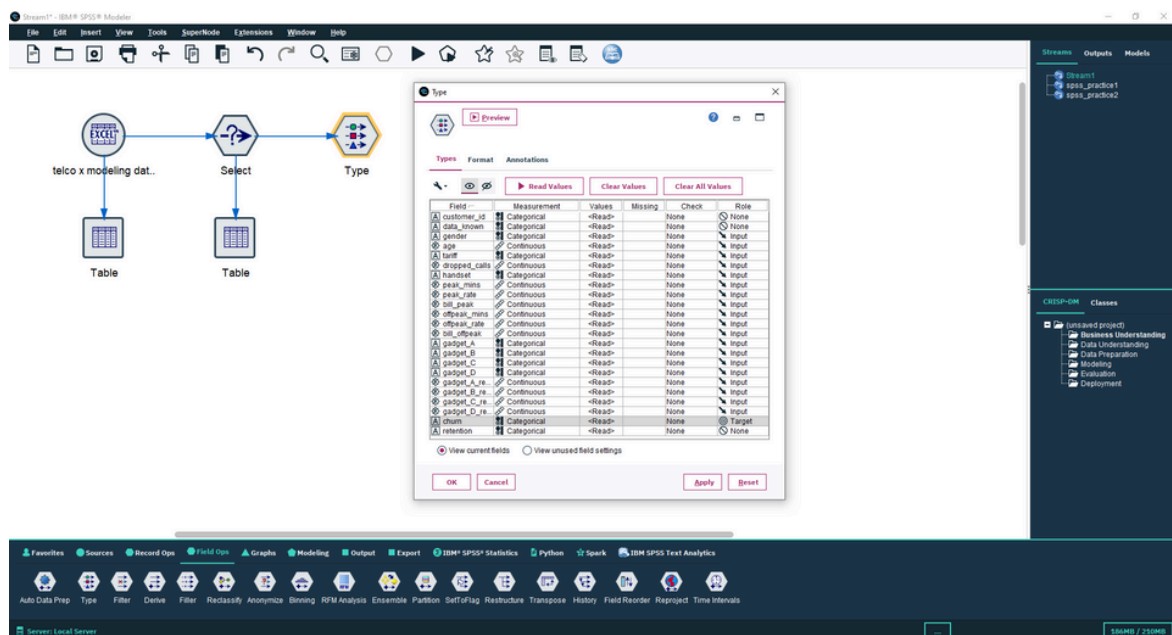
- Connect excel node to a table node and run it to see the data.



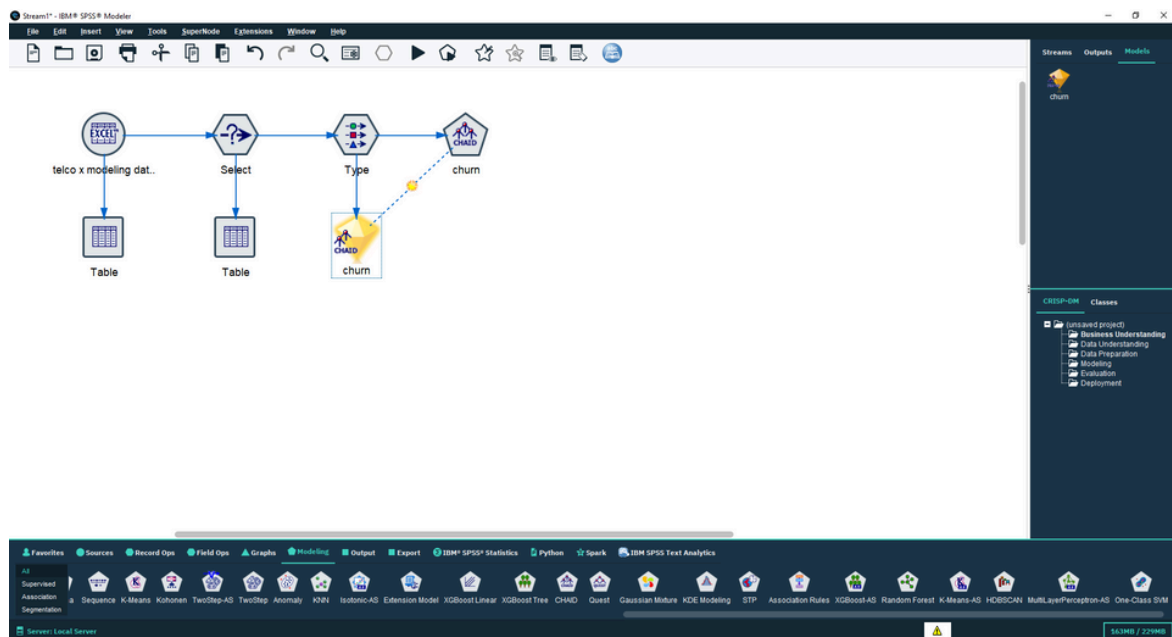
- Drag and drop select node and connect excel node to it and set the condition : data known = “yes”, to select only records that have known data only.



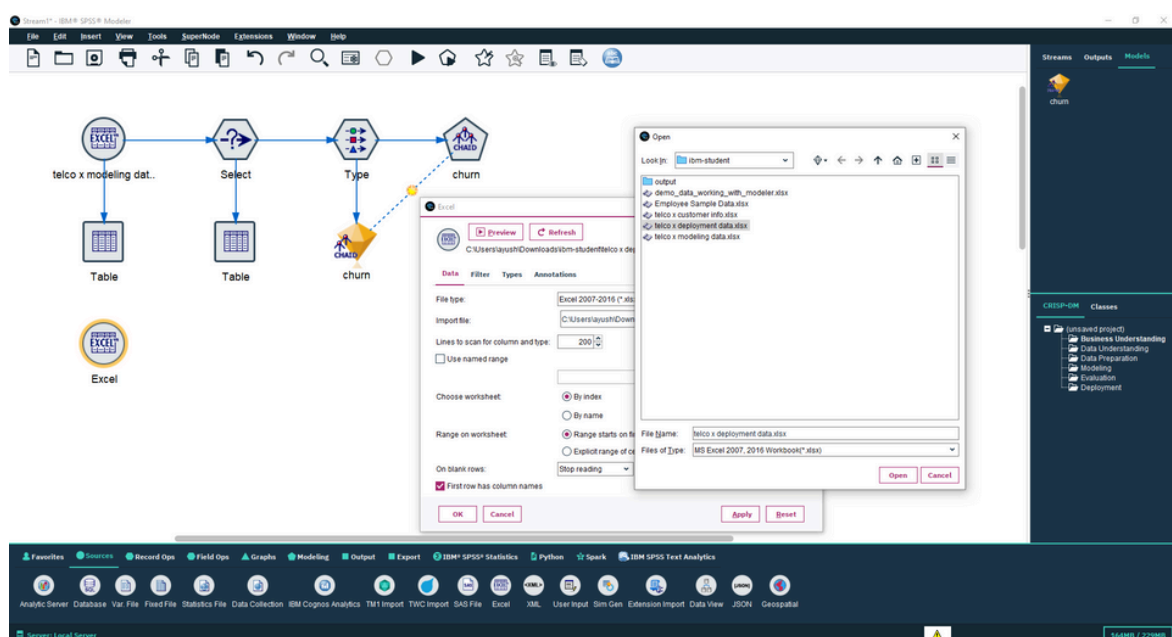
- Now connect a select node to a type node and adjust the measurement and roles (predictors, target)



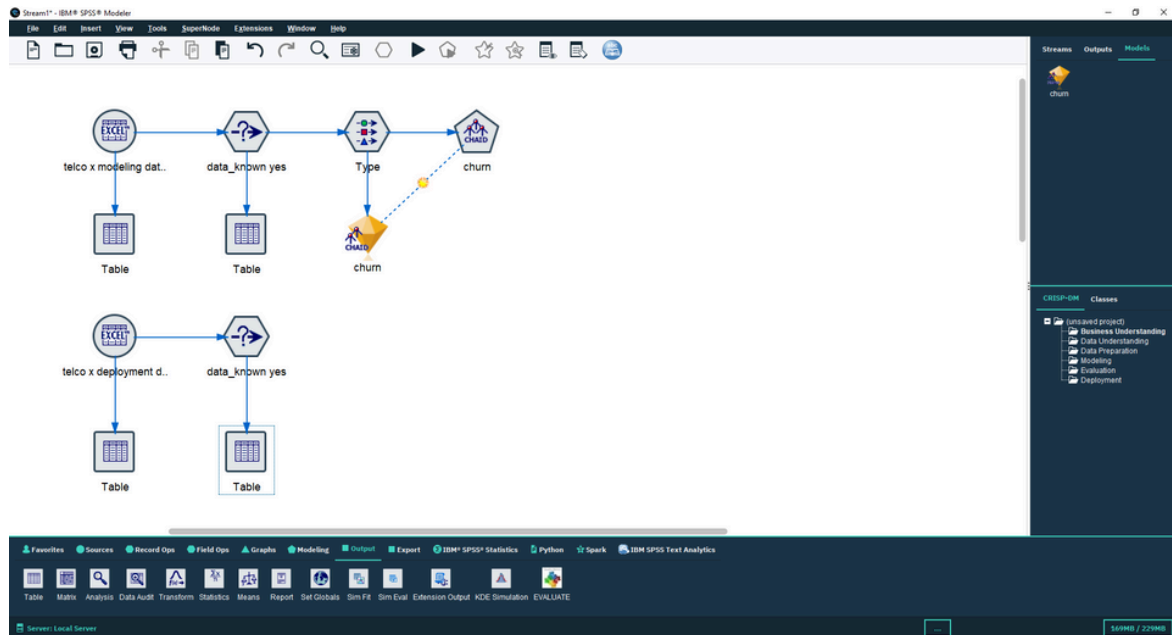
- After that connect the type node to a CHAID node and click run, it will generate a model.



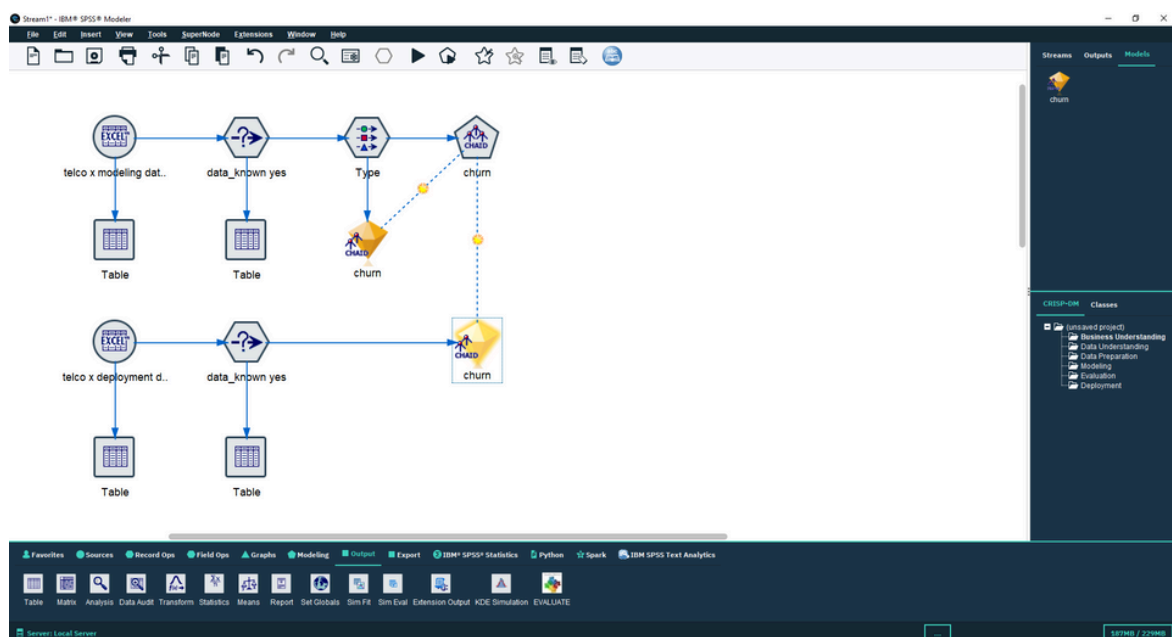
- After the training part is complete we will test the model.
- Add Excel node to the canvas and select the deployment dataset.



- Connect excel node to select node with condition `data_known = "yes"`



- use the generated model and connect the select node to the model



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- The screenshot displays the IBM SPSS Modeler software interface. The top menu bar includes File, Edit, Insert, View, Tools, SuperModel, Extensions, Window, and Help. Below the menu is a toolbar with icons for file operations, modeling, and visualization.
- The main workspace shows a workflow diagram with the following components and connections:
- telco x modeling dat..** (Table icon) connects to a **data_known yes** (Join icon).
 - telco x deployment d..** (Table icon) connects to a **data_known yes** (Join icon).
 - The top **data_known yes** connects to a **Type** (Join icon).
 - The bottom **data_known yes** connects to a **churn** (Join icon).
 - The **Type** icon connects to a **churn** (Join icon).
 - The **churn** icon connects to a **churn** (Table icon).
- A pop-up window titled "Table (23 fields, 9,984 records)" is open, displaying a table with the following data:
- | | get_B_revenues | gadget_C_revenues | gadget_D_revenues | \$R-churn | \$SRC-churn |
|----|----------------|-------------------|-------------------|-----------|-------------|
| 1 | 0.000 | 0.000 | 0.000 | Active | 0.770 |
| 2 | 0.000 | 0.000 | 0.000 | Churned | 0.141 |
| 3 | 20.000 | 28.000 | 0.000 | Active | 0.951 |
| 4 | 24.000 | 0.000 | 41.000 | Churned | 0.440 |
| 5 | 23.000 | 33.000 | 40.000 | Active | 0.951 |
| 6 | 23.000 | 24.000 | 43.000 | Active | 0.945 |
| 7 | 18.000 | 0.000 | 37.000 | Churned | 0.440 |
| 8 | 17.000 | 0.000 | 38.000 | Churned | 0.122 |
| 9 | 17.000 | 24.000 | 40.000 | Active | 0.749 |
| 10 | 0.000 | 0.000 | 0.000 | Churned | 0.141 |
| 11 | 0.000 | 0.000 | 0.000 | Churned | 0.440 |
| 12 | 0.000 | 24.000 | 0.000 | Active | 0.944 |
| 13 | 0.000 | 0.000 | 0.000 | Churned | 0.127 |
| 14 | 0.000 | 30.000 | 0.000 | Churned | 0.943 |
| 15 | 22.000 | 39.000 | 37.000 | Active | 0.664 |
| 16 | 0.000 | 0.000 | 0.000 | Active | 0.942 |
| 17 | 0.000 | 0.000 | 0.000 | Active | 0.952 |
| 18 | 20.000 | 28.000 | 0.000 | Active | 0.951 |
| 19 | 0.000 | 0.000 | 0.000 | Active | 0.904 |
| 20 | 23.000 | 0.000 | 0.000 | Active | 0.904 |
| 21 | 0.000 | 0.000 | 0.000 | Churned | 0.905 |
| 22 | 20.000 | 32.000 | 0.000 | Active | 0.710 |
| 23 | 0.000 | 0.000 | 0.000 | Active | 0.664 |
| 24 | 21.000 | 31.000 | 37.000 | Churned | 0.943 |
| 25 | 0.000 | 0.000 | 36.000 | Active | 0.664 |
| 26 | 0.000 | 24.000 | 40.000 | Active | 0.951 |
| 27 | 0.000 | 0.000 | 0.000 | Active | 0.444 |
| 28 | 0.000 | 0.000 | 0.000 | Active | 0.142 |
| 29 | 0.000 | 0.000 | 0.000 | Churned | 0.444 |
| 30 | 19.000 | 0.000 | 0.000 | Active | 0.952 |
- The bottom status bar shows "Server: Local Server" and "9908 / 22990".

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- The screenshot displays the IBM SPSS Modeler software interface. The main workspace shows a workflow diagram with several data sources (telemarketing and deployment data) feeding into a 'data_known yes' node, which then branches into 'Type' and 'churn' nodes. A 'churn' node is highlighted with a yellow selection box. A dialog box titled 'Churned_customers' is open, showing the 'Settings' tab. The 'Mode' is set to 'Include' and the 'Condition' is defined as `"churned" = "churned" and "churn" > 0.94`. The 'Annotations' tab is also visible. The right sidebar shows the 'Streams' and 'Outputs' panels, with 'churn' selected in the 'Streams' panel. The bottom status bar indicates the server is 'Local Server' and the session is '959M / 229M'.

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- The screenshot displays the IBM SPSS Modeler software interface. At the top, a menu bar includes File, Edit, Insert, View, Tools, SuperNode, Expressions, Window, and Help. Below the menu is a toolbar with icons for file operations, navigation, and analysis. The main workspace contains two data flows. The top flow starts with a 'telco x modeling dat.' table, followed by a 'data_known yes' filter, a 'Type' node, and a 'churn' node. The bottom flow starts with a 'telco x deployment d.' table, followed by a 'data_known yes' filter, a 'churn' node, and a 'Churned_customers' node. A 'Filter' node is connected to the 'Churned_customers' node. A 'Filter' dialog box is open on the right, showing a list of fields and their status (checked or unchecked). The dialog box has tabs for 'Filter' and 'Annotations'. The 'Filter' tab is active, showing a list of fields with checkboxes. The 'Annotations' tab is also visible. The dialog box includes a 'Preview' button and a 'View current fields / View unused field settings' toggle. The bottom status bar shows 'Server: Local Server' and a date/time stamp '2038/8 / 22994'.

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- The screenshot displays the IBM SPSS Modeler software interface. The main workspace shows a data flow diagram with two parallel processing paths. The top path starts with a 'telco x modeling dat.' source, followed by a 'data_known yes' filter, a 'Type' node, and a 'churn' target. The bottom path starts with a 'telco x deployment d.' source, followed by a 'data_known yes' filter, a 'churn' target, a 'Churned_Customers' node, and a 'Filter' node. A 'churn' node is also shown as a target in the top path. The right side of the interface features a 'Table (Fields, 2,947 records)' window displaying a preview of the data, including columns for 'customer_id', 'gender', 'age', 'SR-churn', and 'SRC-churn'. The bottom status bar indicates the server is 'Local Server' and the date is '2019/06/22'.

- Now we will use flat file node from export pallet to export the output file, connect filter node to flat file node and run the flat file node.

