



# Multi Class Decision Forest with Azure ML



# Contents

## Table of Contents

|                              |    |
|------------------------------|----|
| Problem Statement :.....     | 4  |
| Add Import data.....         | 5  |
| Change data source .....     | 7  |
| Edit Metadata .....          | 8  |
| Mention names.....           | 9  |
| Add clean missing data ..... | 11 |
| Split Data.....              | 13 |
| Add score model .....        | 14 |
| Add evaluate model .....     | 15 |

# Goals and Requirements

Estimated time to complete lab is 15-20 minutes.

## Goals

1. Develop and Predict IRIS Data class.
2. Develop the Model using Multiclass Decision Forest

## Requirement:

1. Access to an Azure Machine Learning and the Dataset for IRIS

# Multiclass Decision Forest

**Problem Statement :** Predict the class of a flower using MULTICLASS DECISION FOREST

## IRIS Dataset

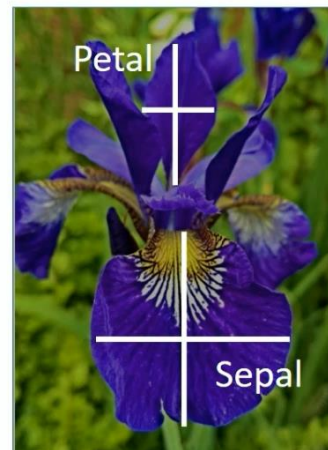


Ronald Fisher

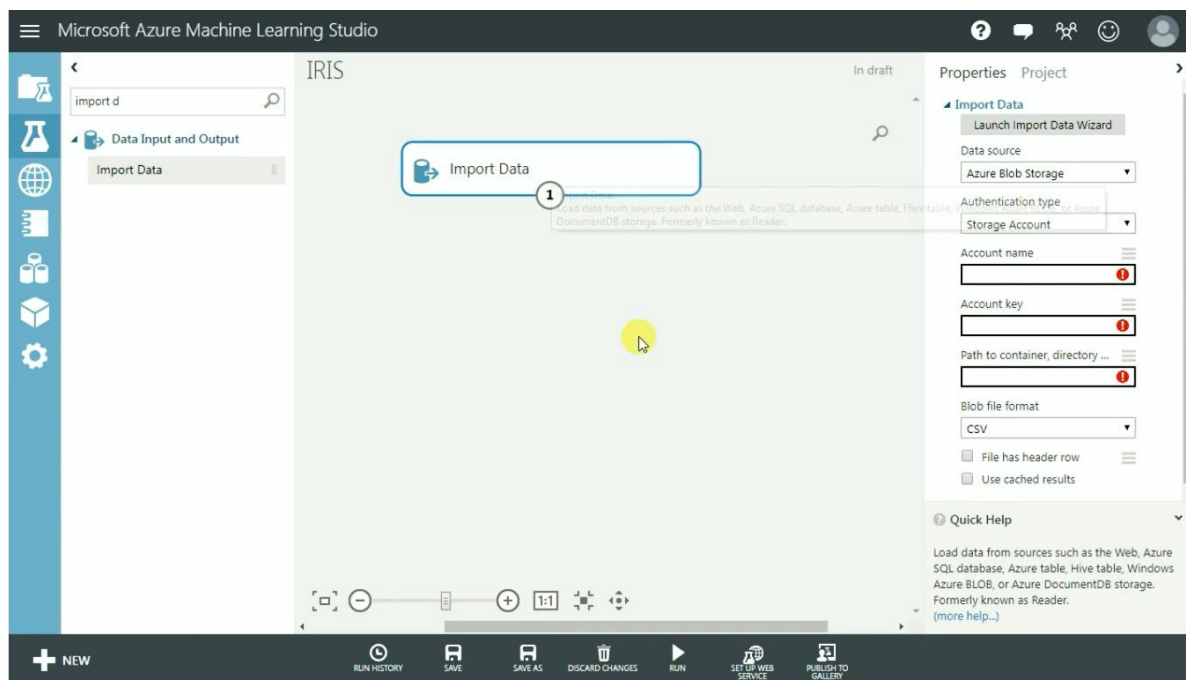
### Dataset Attributes

1. Sepal length in cm
2. Sepal width in cm
3. Petal length in cm
4. Petal width in cm
5. Class:
  - Iris Setosa
  - Iris Versicolour
  - Iris Virginica



Predicted attribute: Class of iris plant.



## Add Import data in the canvas




Click on data folder

[About](#)
[Citation Policy](#)
[Donate a Data Set](#)
[Contact](#)

Press **F11** to exit full screen

Repository
Web


**Machine Learning Repository**  
Center for Machine Learning and Intelligent Systems

[View ALL Data Sets](#)

### Iris Data Set

Download [Data Folder](#) [Data Set Description](#)

Abstract: Famous database; from Fisher, 1936



|                            |                |                       |     |                     |            |
|----------------------------|----------------|-----------------------|-----|---------------------|------------|
| Data Set Characteristics:  | Multivariate   | Number of Instances:  | 150 | Area:               | Life       |
| Attribute Characteristics: | Real           | Number of Attributes: | 4   | Date Donated:       | 1988-07-01 |
| Associated Tasks:          | Classification | Missing Values?       | No  | Number of Web Hits: | 1468293    |

**Source:**

Creator:  
R.A. Fisher

Donor:  
Michael Marshall (MARSHALL%PLU.'@' to arc.nasa.gov)

**Data Set Information:**

This is perhaps the best known database to be found in the pattern recognition literature. Fisher's paper is a classic in the field and is referenced frequently to this day. (See Duda & Hart, for example.) The data set contains 3 classes of 50 instances each, where each class refers to a type of iris plant. One class is linearly separable from the other 2; the latter are NOT linearly separable from each other.

<https://archive.ics.uci.edu/ml/machine-learning-databases/iris/>

Click on Iris data

## Index of /ml/machine-learning-databases/iris

| Name                             | Last modified     | Size | Description |
|----------------------------------|-------------------|------|-------------|
| <a href="#">Parent Directory</a> | -                 |      |             |
| <a href="#">Index</a>            | 03-Dec-1996 04:01 | 105  |             |
| <a href="#">bezddekIris.data</a> | 14-Dec-1999 12:12 | 4.4K |             |
| <a href="#">iris.data</a>        | 08-Mar-1993 16:27 | 4.4K |             |
| <a href="#">iris.names</a>       | 11-Jul-2000 21:30 | 2.9K |             |

Apache/2.2.15 (CentOS) Server at archive.ics.uci.edu Port 443

<https://archive.ics.uci.edu/ml/machine-learning-databases/iris/iris.data>

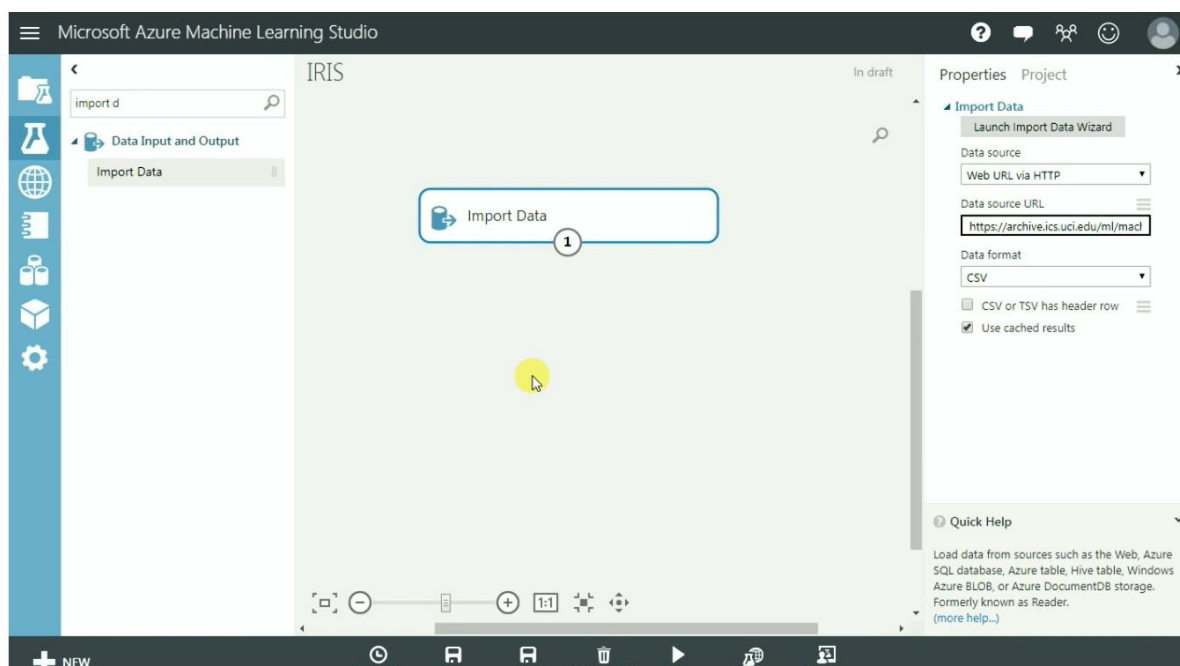
Copy the link and back to studio

```

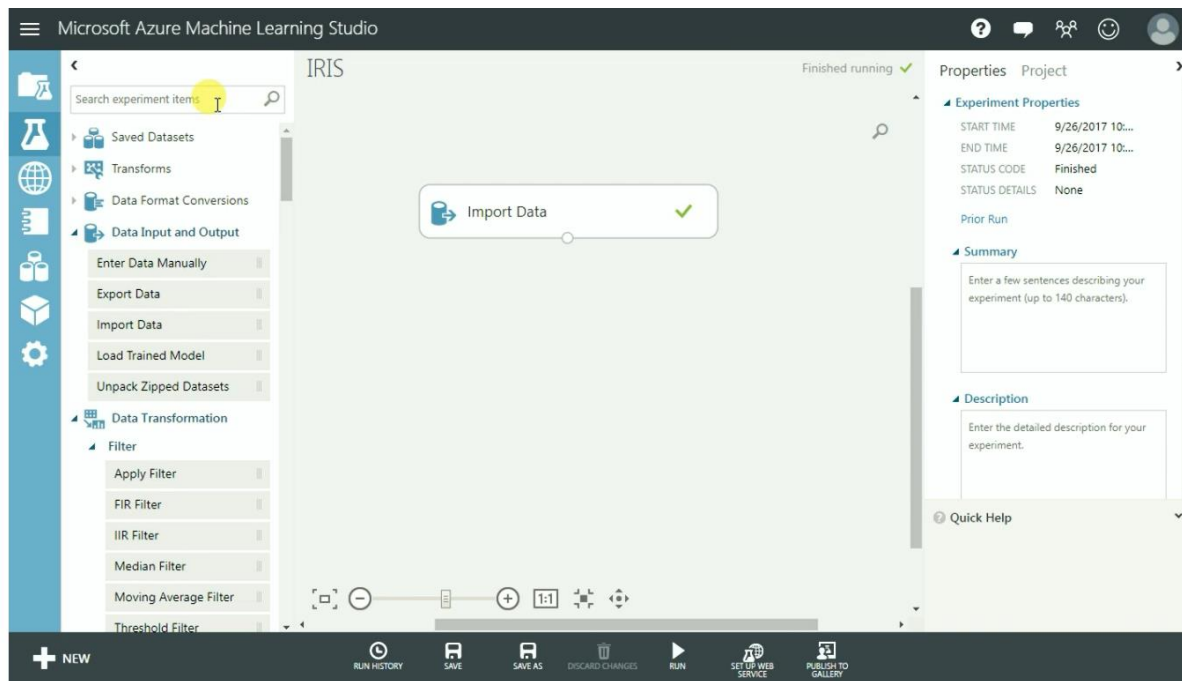
5.1,3.5,1.4,0.2,Iris-setosa
4.9,3.0,1.4,0.2,Iris-setosa
4.7,3.2,1.3,0.2,Iris-setosa
4.6,3.1,1.5,0.2,Iris-setosa
5.0,3.6,1.4,0.2,Iris-setosa
5.4,3.9,1.7,0.4,Iris-setosa
4.6,3.4,1.4,0.3,Iris-setosa
5.0,3.4,1.5,0.2,Iris-setosa
4.4,2.9,1.4,0.2,Iris-setosa
4.9,3.1,1.5,0.1,Iris-setosa
5.4,3.7,1.5,0.2,Iris-setosa
4.8,3.4,1.6,0.2,Iris-setosa
4.8,3.0,1.4,0.1,Iris-setosa
4.3,3.0,1.1,0.1,Iris-setosa
5.8,4.0,1.2,0.2,Iris-setosa
5.7,4.4,1.5,0.4,Iris-setosa
5.4,3.9,1.3,0.4,Iris-setosa
5.1,3.5,1.4,0.3,Iris-setosa
5.7,3.8,1.7,0.3,Iris-setosa
5.1,3.8,1.5,0.3,Iris-setosa
5.4,3.4,1.7,0.2,Iris-setosa
5.1,3.7,1.5,0.4,Iris-setosa
4.6,3.6,1.0,0.2,Iris-setosa
5.1,3.3,1.7,0.5,Iris-setosa
4.8,3.4,1.9,0.2,Iris-setosa
5.0,3.0,1.6,0.2,Iris-setosa
5.0,3.4,1.6,0.4,Iris-setosa
5.2,3.5,1.5,0.2,Iris-setosa
5.2,3.4,1.4,0.2,Iris-setosa
4.7,3.2,1.6,0.2,Iris-setosa
4.8,3.1,1.6,0.2,Iris-setosa
5.4,3.4,1.5,0.4,Iris-setosa
5.2,4.1,1.5,0.1,Iris-setosa
5.5,4.2,1.4,0.2,Iris-setosa
4.9,3.1,1.5,0.1,Iris-setosa
5.0,3.2,1.2,0.2,Iris-setosa
5.5,3.5,1.3,0.2,Iris-setosa
4.9,3.1,1.5,0.1,Iris-setosa
4.4,3.0,1.3,0.2,Iris-setosa
5.1,3.4,1.5,0.2,Iris-setosa
5.0,3.5,1.3,0.3,Iris-setosa
4.5,2.3,1.3,0.3,Iris-setosa
4.4,3.2,1.3,0.2,Iris-setosa
5.0,3.5,1.6,0.6,Iris-setosa
5.1,3.8,1.9,0.4,Iris-setosa
4.8,3.0,1.4,0.3,Iris-setosa
5.1,3.8,1.6,0.2,Iris-setosa
4.6,3.2,1.4,0.2,Iris-setosa
5.3,3.7,1.5,0.2,Iris-setosa
5.0,3.3,1.4,0.2,Iris-setosa
7 0 3 7 4 7 1 4 Tele-uarcinlon

```

Change data source, mention URL and data format etc as shown



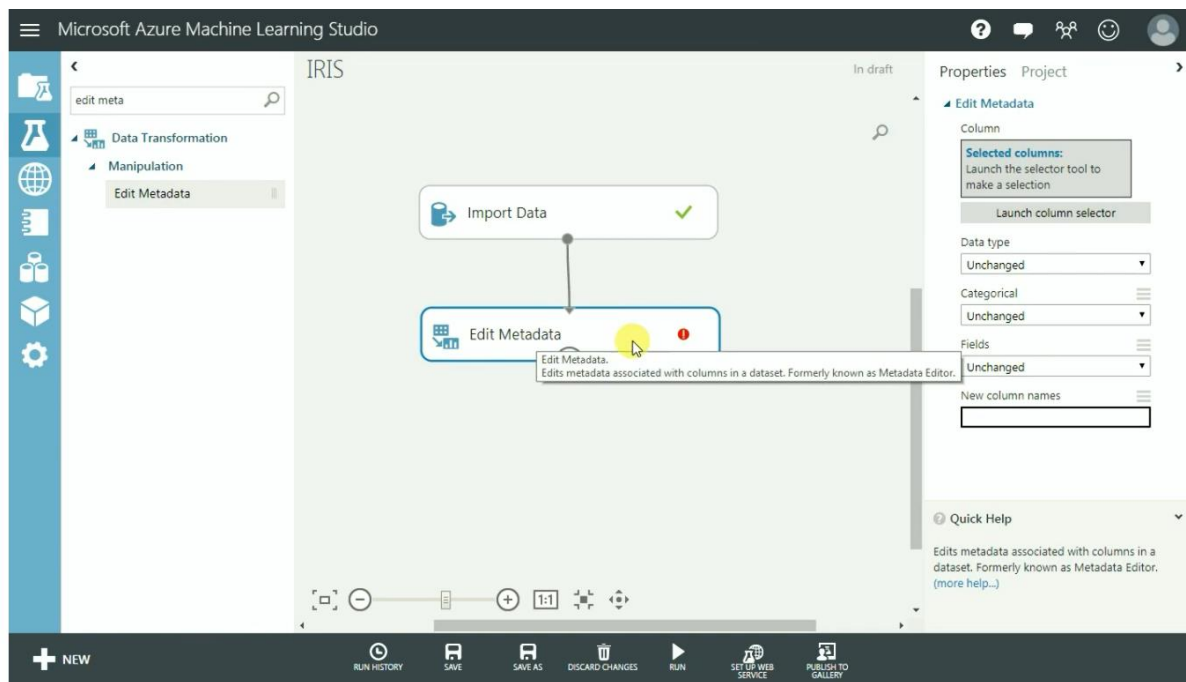
## Run and visualize the dataset



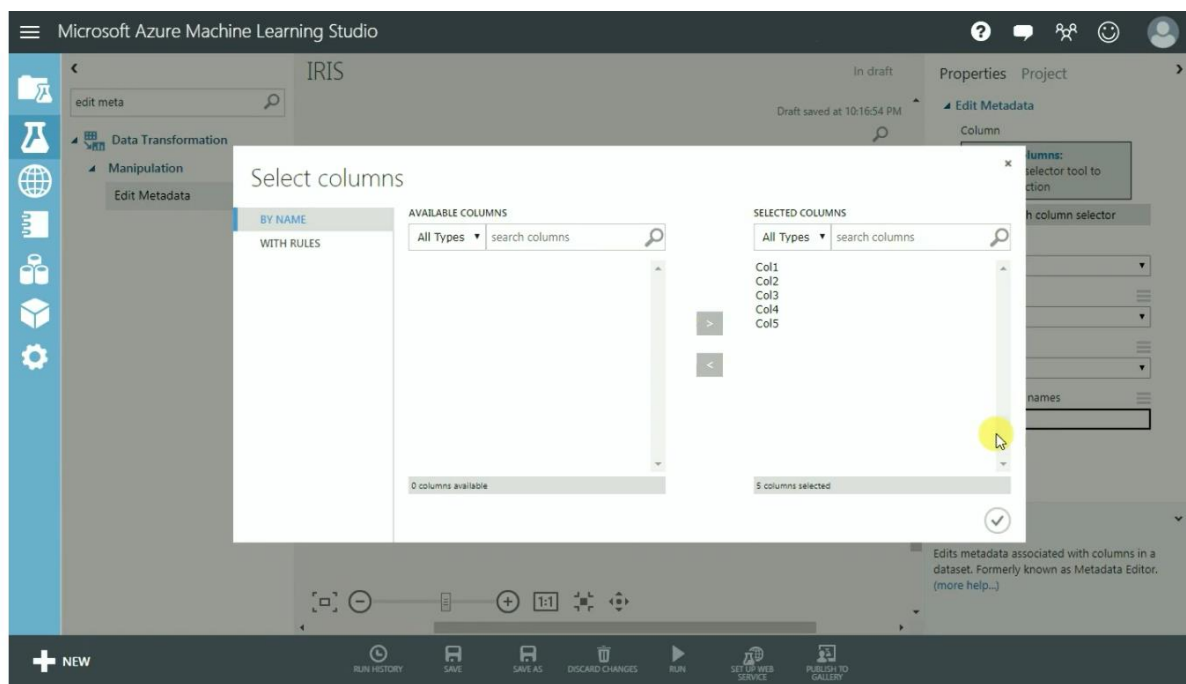
## Edit Metadata

Before visualizing add edit metadata into canvas and connect

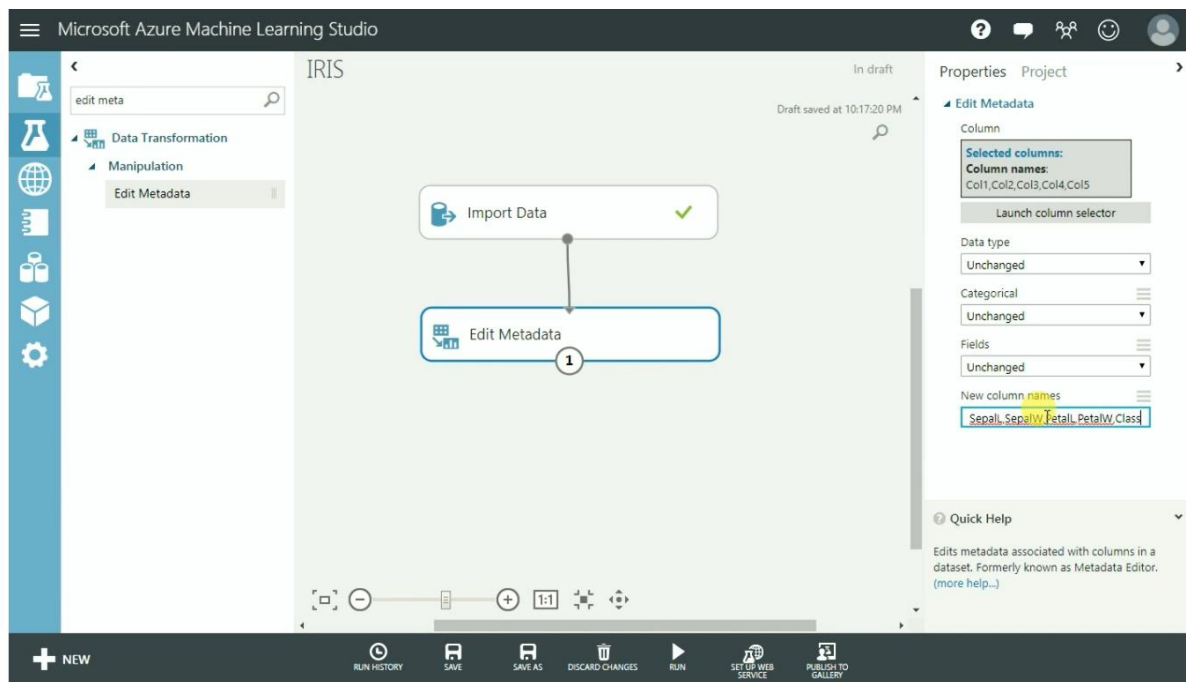




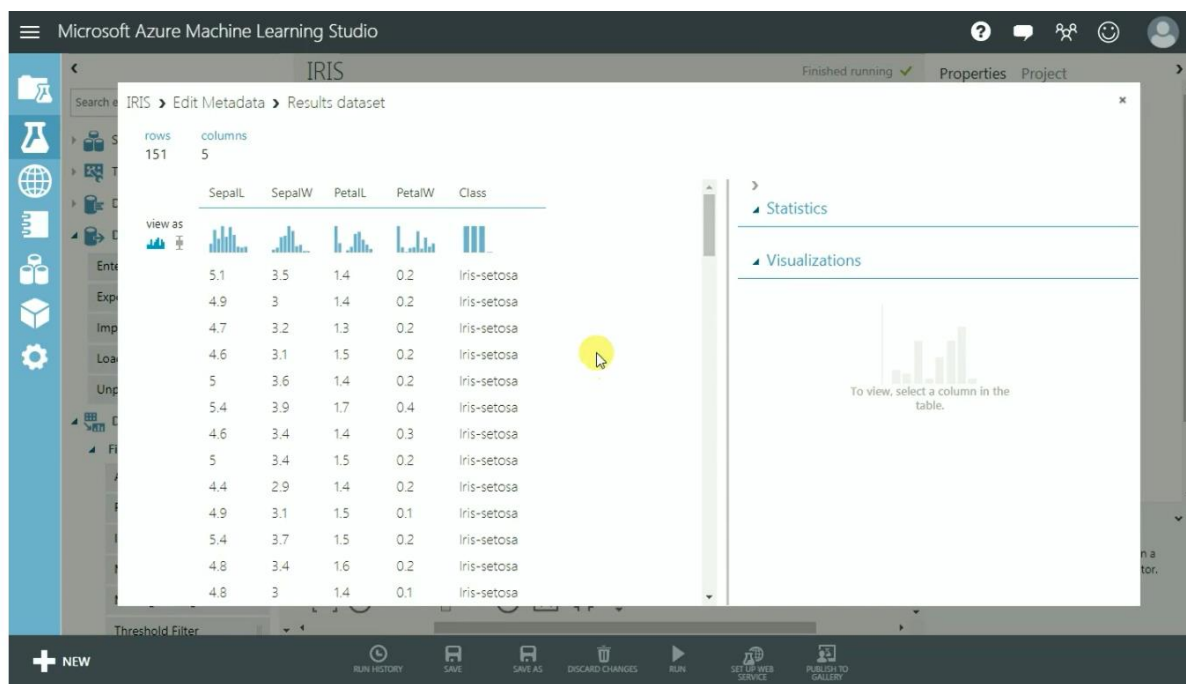
Launch column selector and click ok



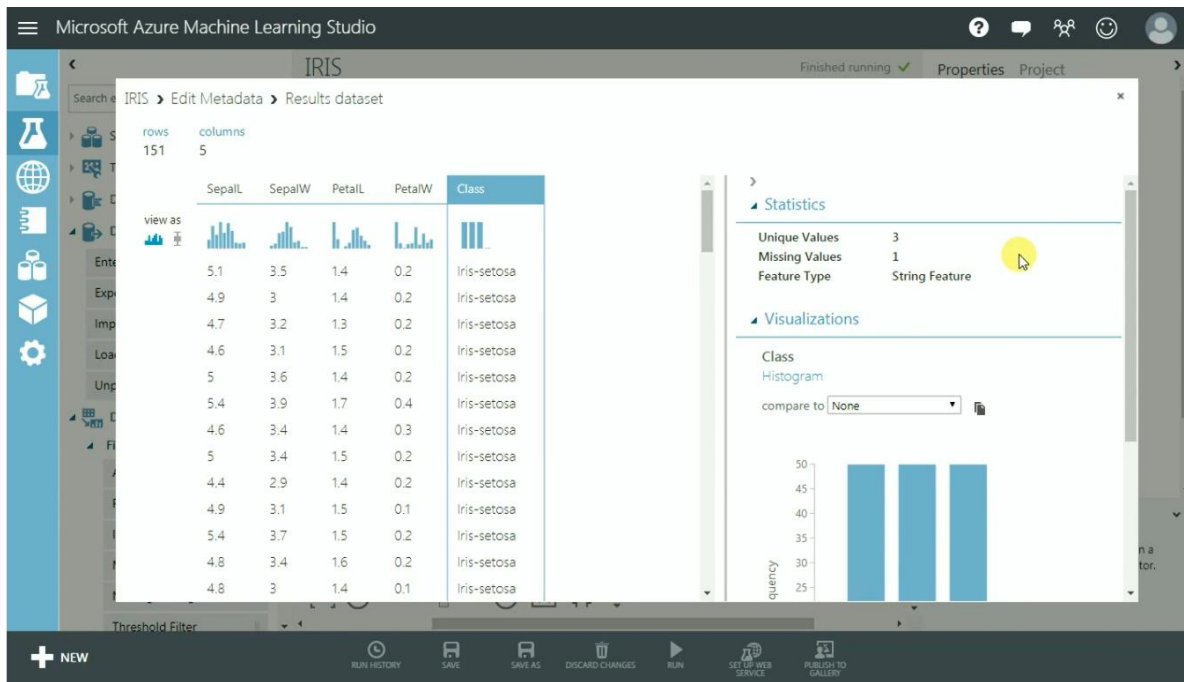
Mention names in the parameters as below



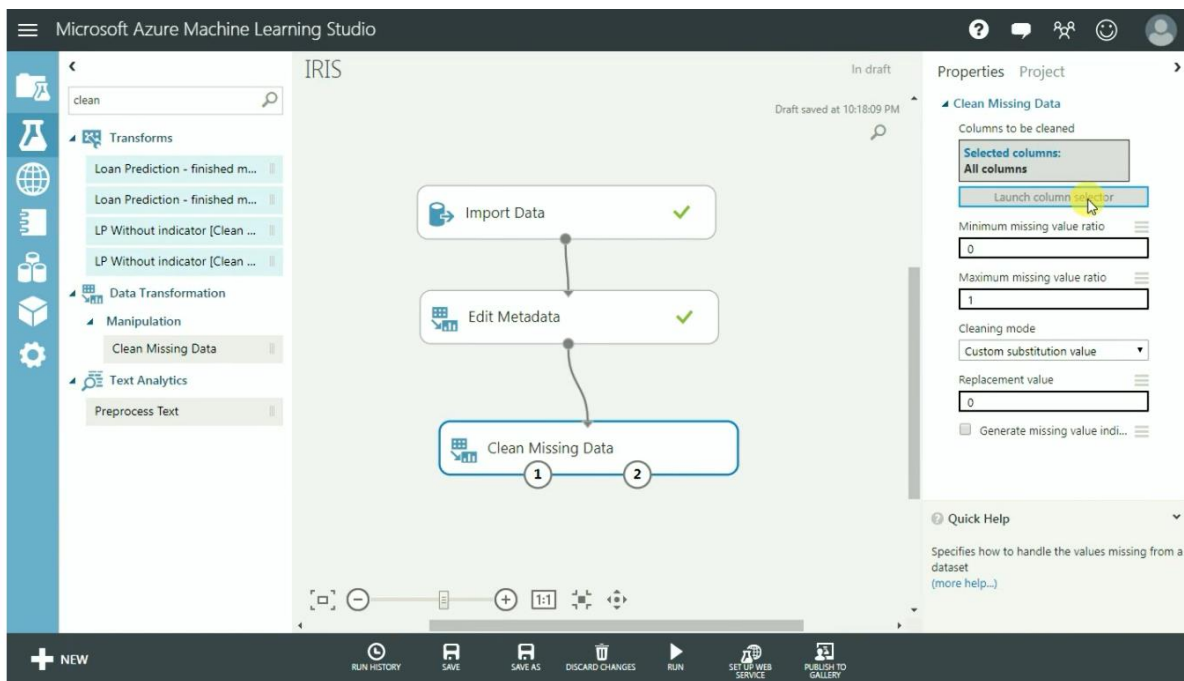
Run and visualize the metadata



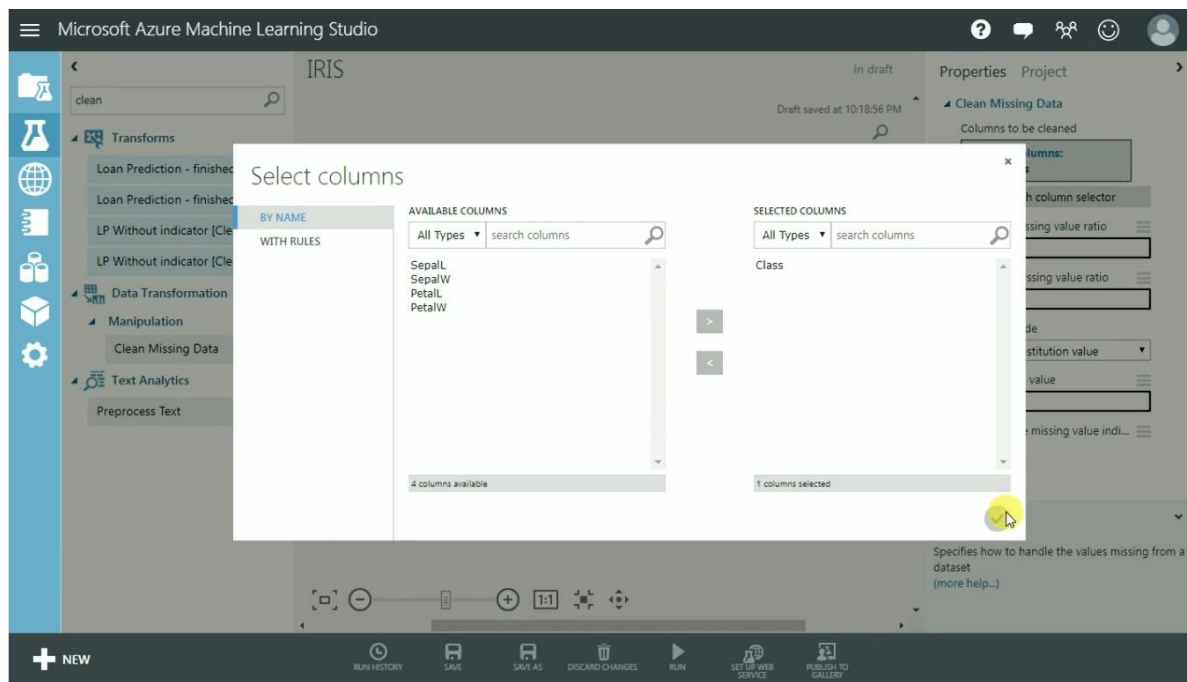
Can view 1 missing value in column class



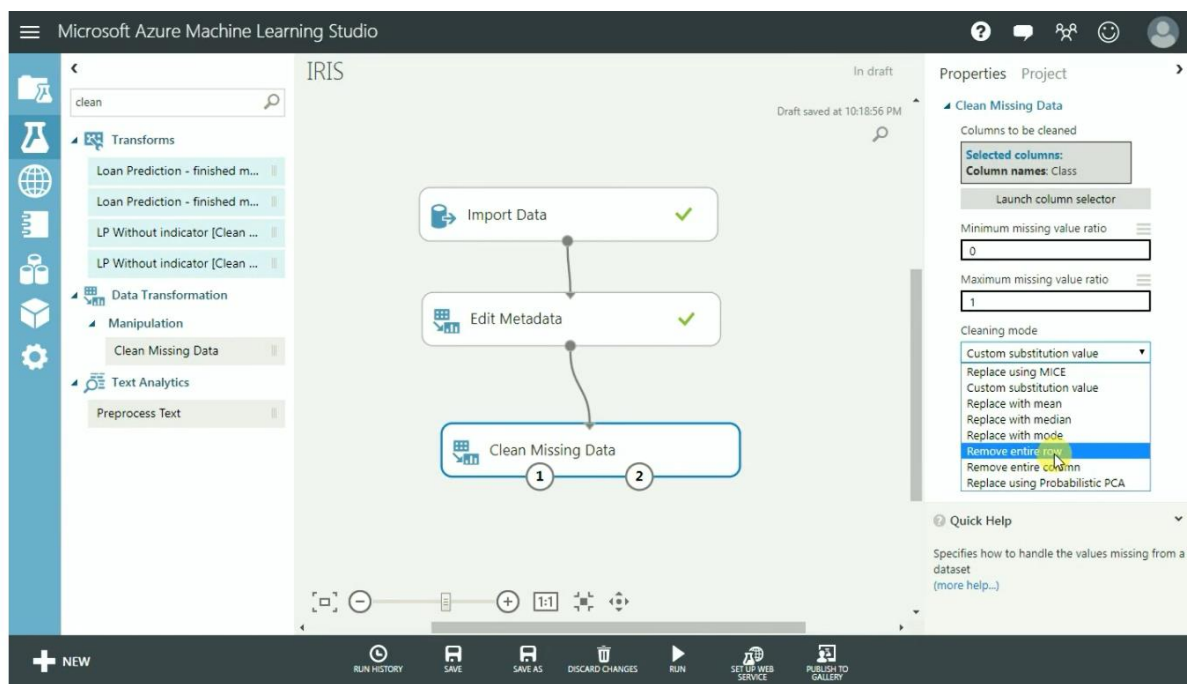
Add clean missing data in canvas and launch column selector



Select class and click ok

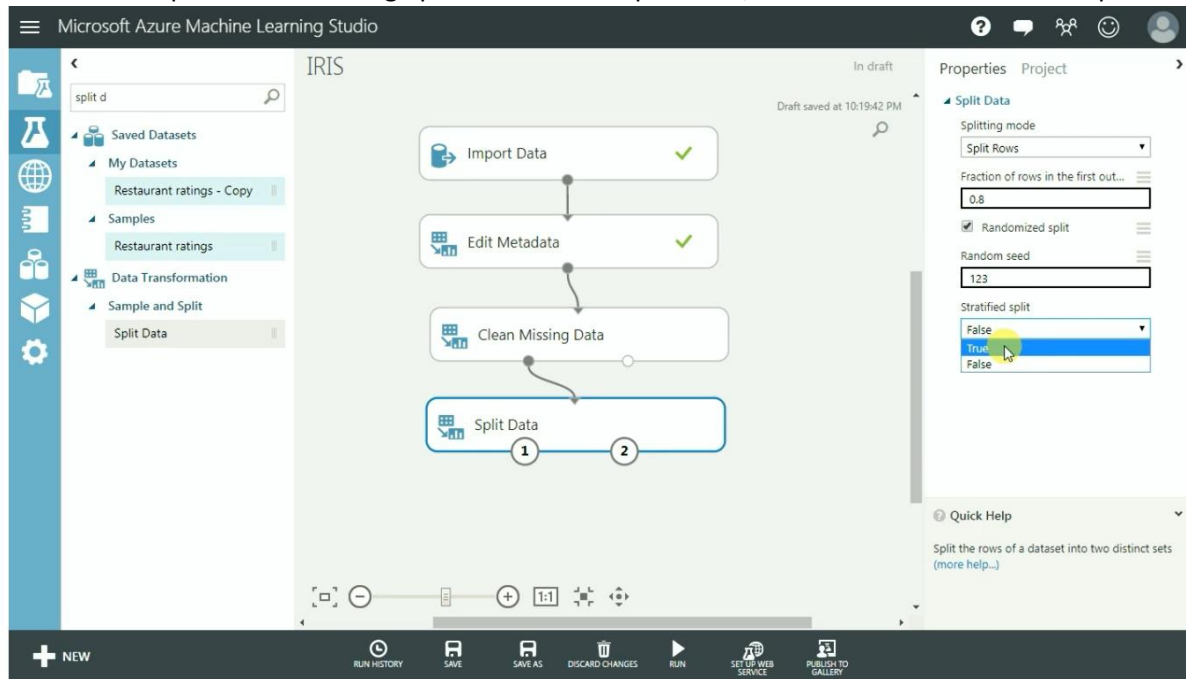


Select Remove entire row

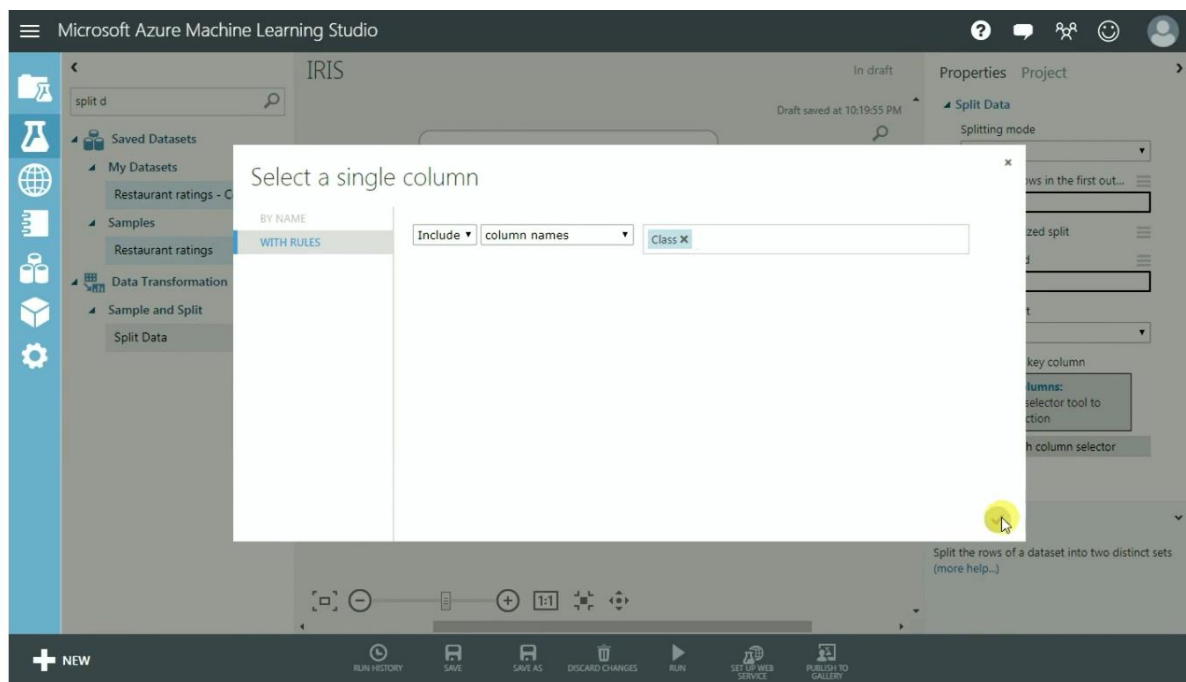


## Split Data

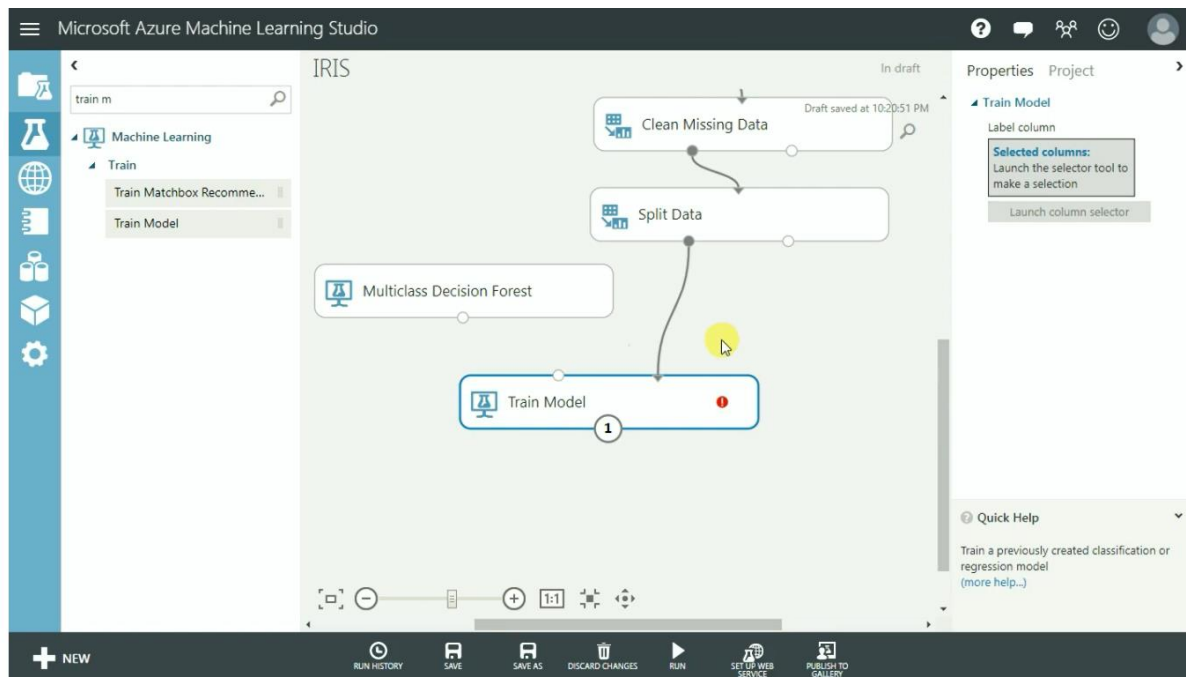
Next task is to split data and change parameters with split ratio , random seed and stratified split



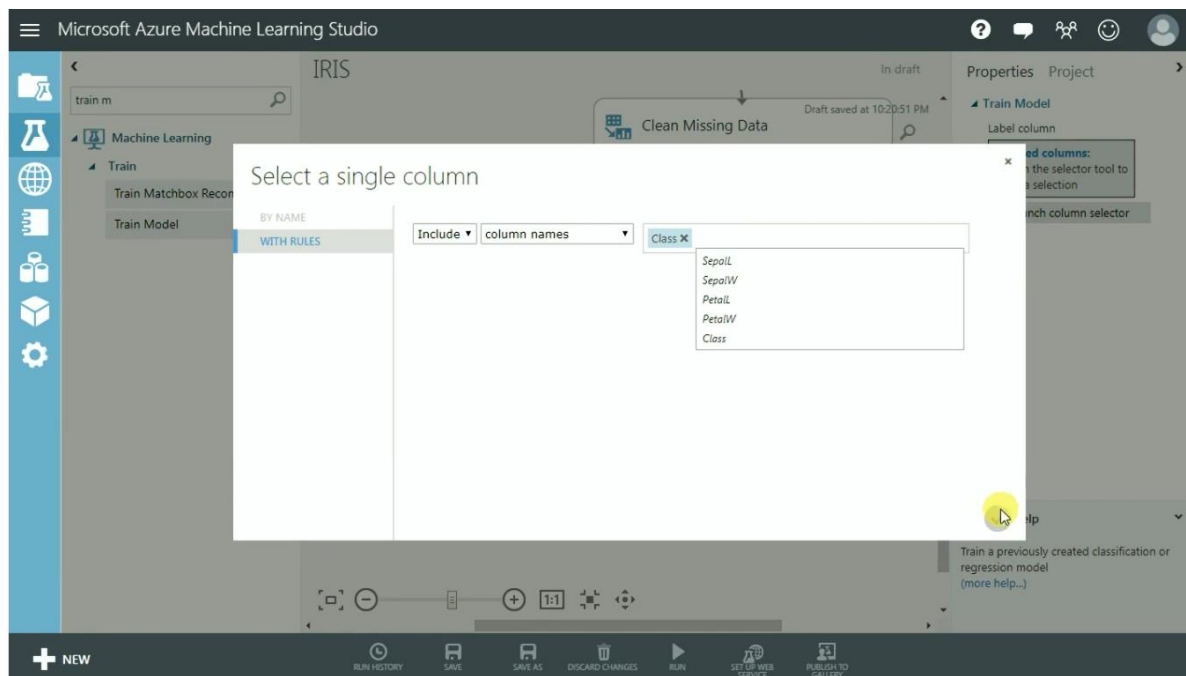
Launch column selector and select class and click ok



Add Multiclass decision forest and train model, connect split data with train model



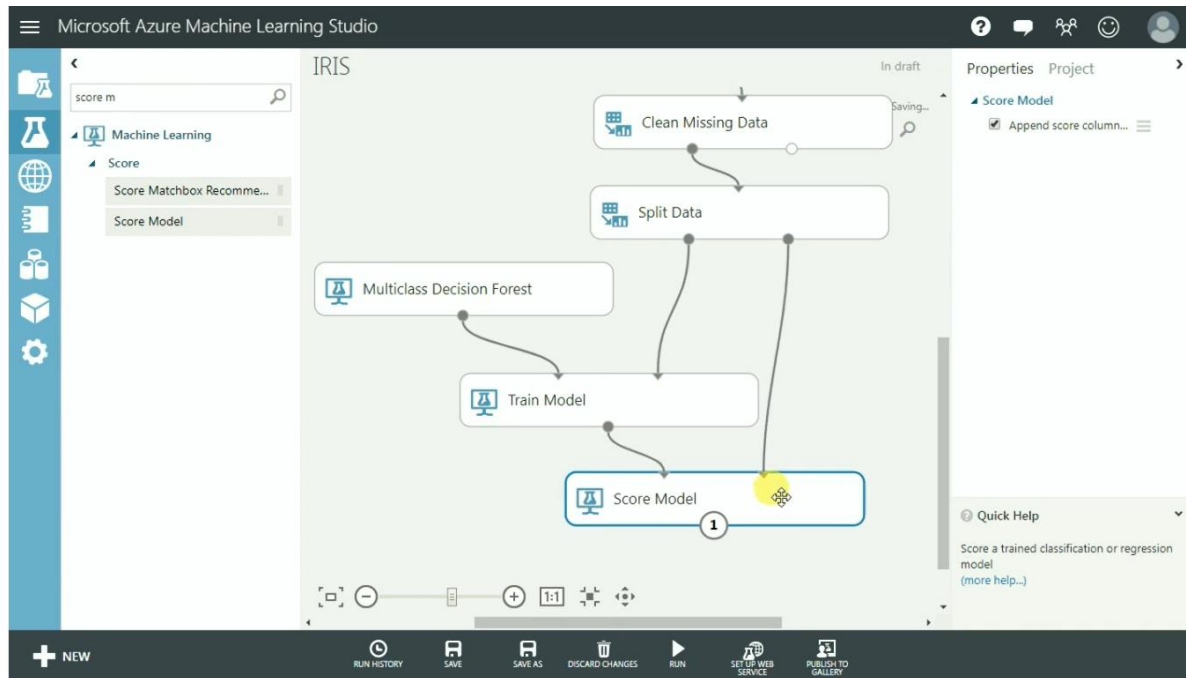
Launch column selector, add class and click ok



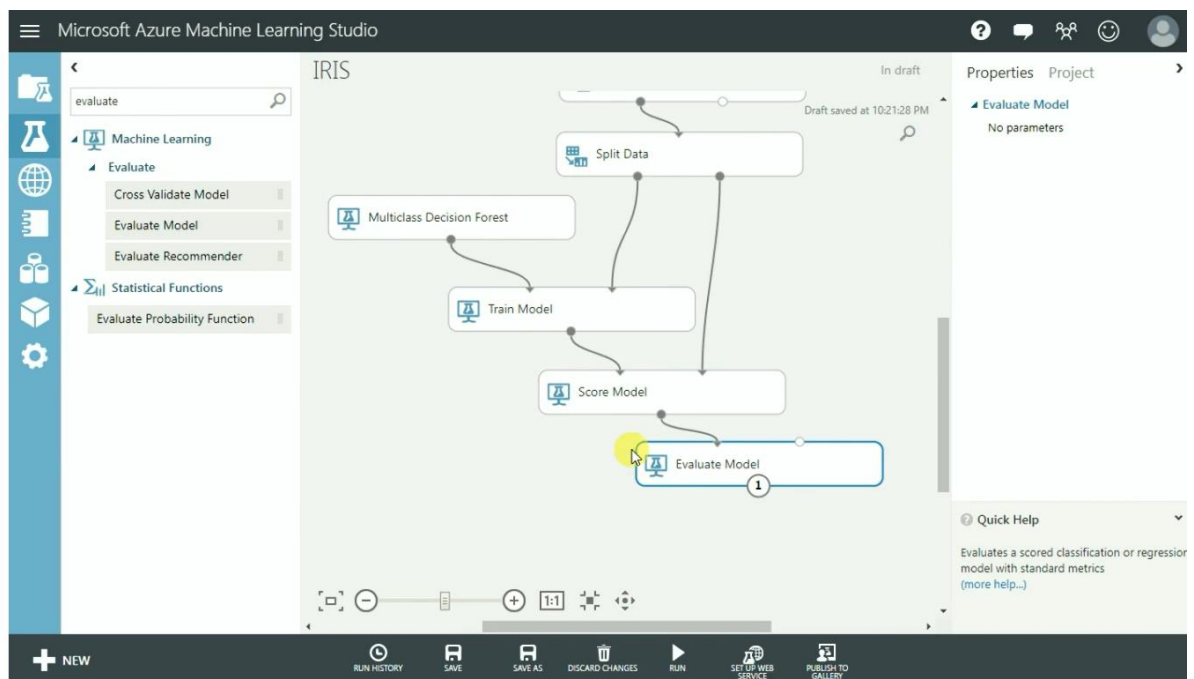
Add score model

connect multiclass decision forest to train model input node1 and split data

To score model input node 2



Add evaluate model in canvas and connect with score model



Run and visualize the evaluate model and obtain below result

