


Article

[José Roberto Pereira](#) · Dec 27, 2020  2m read

[Open Exchange](#)

## Using IntegratedML to create a cube dimension

Hi guys.

That time I'll show you a way to use a machine learning model implemented using IntegradeML as source for an IRIS analytics cube dimension.

Creating the ML model:

Execute this SQL in order to create a new ML model using IntegratedML SQL extension:

```
CREATE MODEL AppointmentsPredection
PREDICTING (Show)
FROM (SELECT
  Canal,
  CreacionDate,
  CreacionHora,
  Edad,
  Especialidad,
  Latencia,
  ReservaDate,
  ReservaHora,
  Sexo,
  Tipo
FROM dc_myapp_model.MedicalAppointments
```

Now, you can train you model:

```
TRAIN MODEL AppointmentsPredection FROM dc_myapp_model.MedicalAppointmentsTrain
```

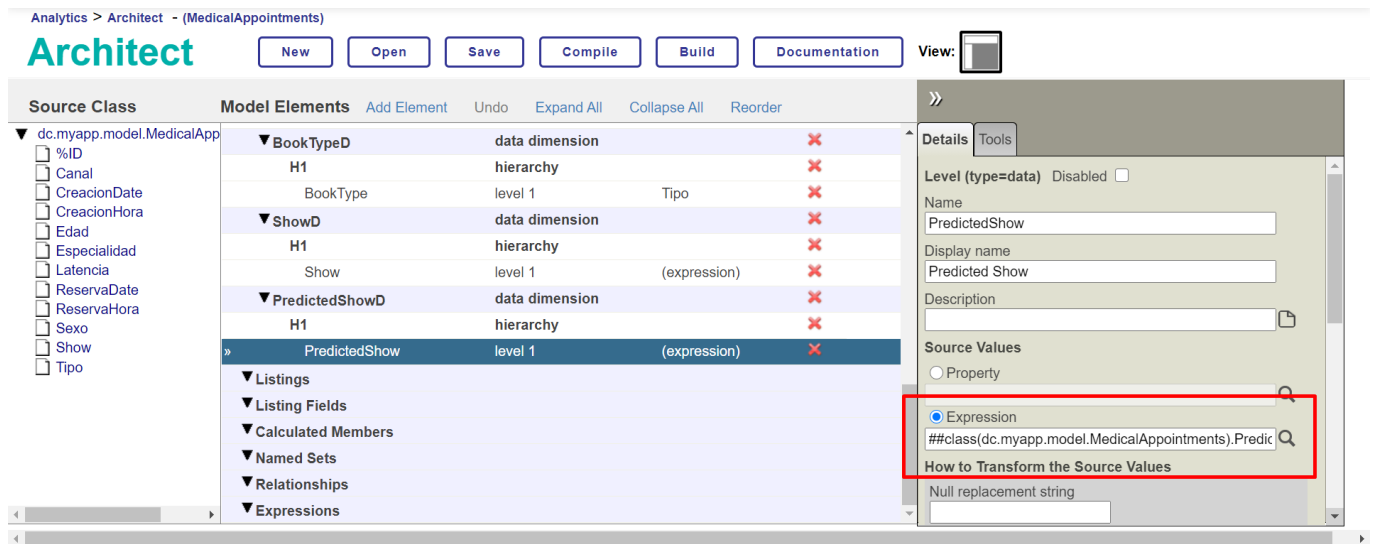
Finally, you can see how good your model is:

```
VALIDATE MODEL AppointmentsPredection FROM dc_myapp_model.MedicalAppointmentsTest
```

MODEL_NAME	TRAINED_MODEL_NAME	PROVIDER	TRAINED_TIMESTAMP	MODEL_TYPE	MODEL_INFO
AppointmentsPredection	AppointmentsPredection2	AutoML	2020-12-27 21:54:14.948	classification	ModelType:Random Forest, Package:sklearn, ProblemType:Classification

<sup>1 row(s) affected</sup>  
Creating the cube dimension:

The trick is to use an expression as input for the dimesion. This is done by setting the Expression property of the dimension:



The method expression code uses the PREDICT function of IntegratedML to classify a new entry using the ML model created early:

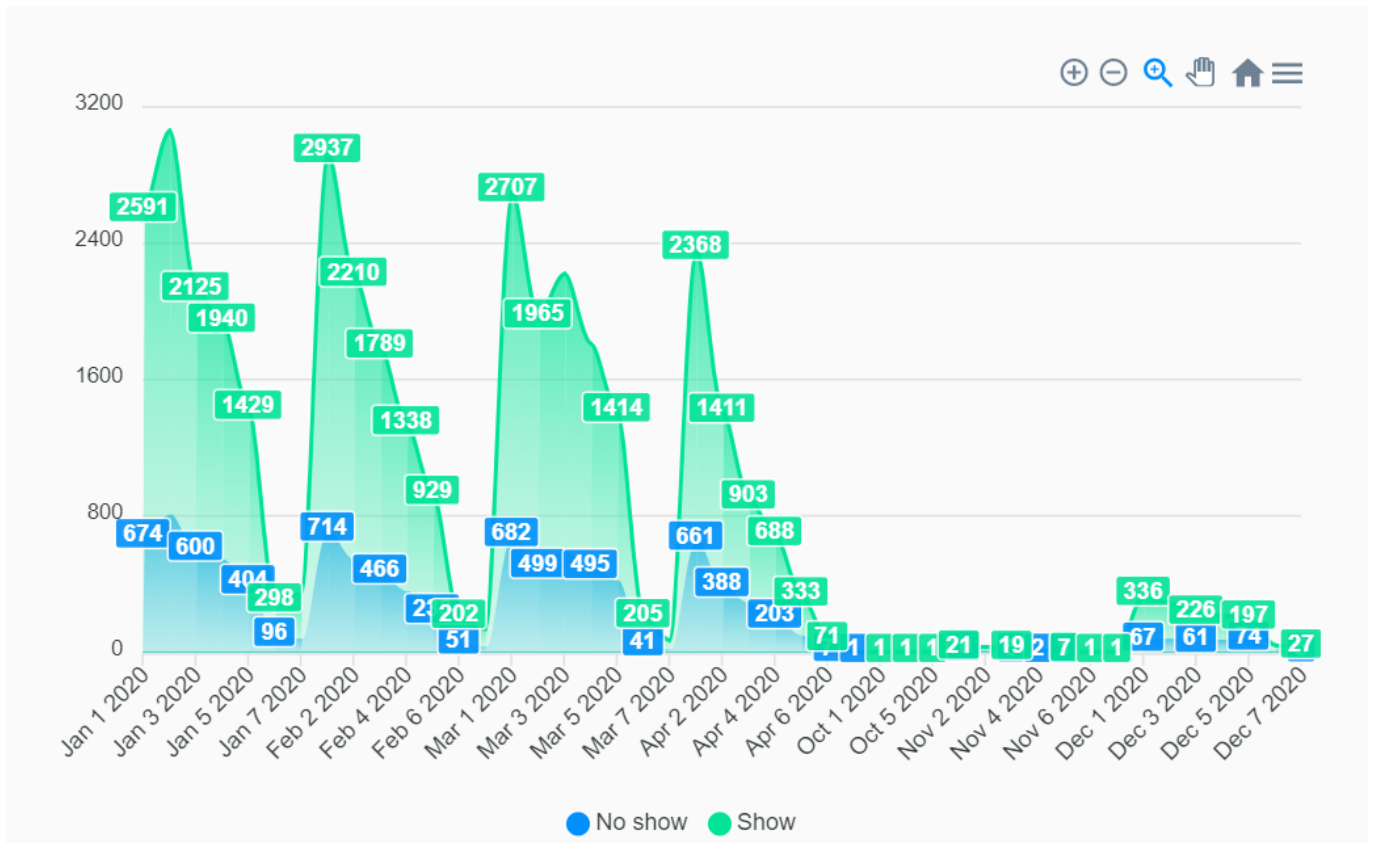
```
ClassMethod PredictMedicalAppointmentClass(pID As %String) As %String
{
    Set modelClass = ##class(dc.myapp.model.MedicalAppointments).ShowGetStored(pID)
    If modelClass '= "" {
        Return ""
    }
    &SQL(SELECT PREDICT(AppointmentsPredection) INTO :modelClass FROM dc_myapp_model.Me
dicalAppointments WHERE ID = :pID)
    return $Case(modelClass, 0:"No show", 1:"Show", : "")
}
```

So, with this approach you can create a dimension which will show to users a prediction about future appointments.

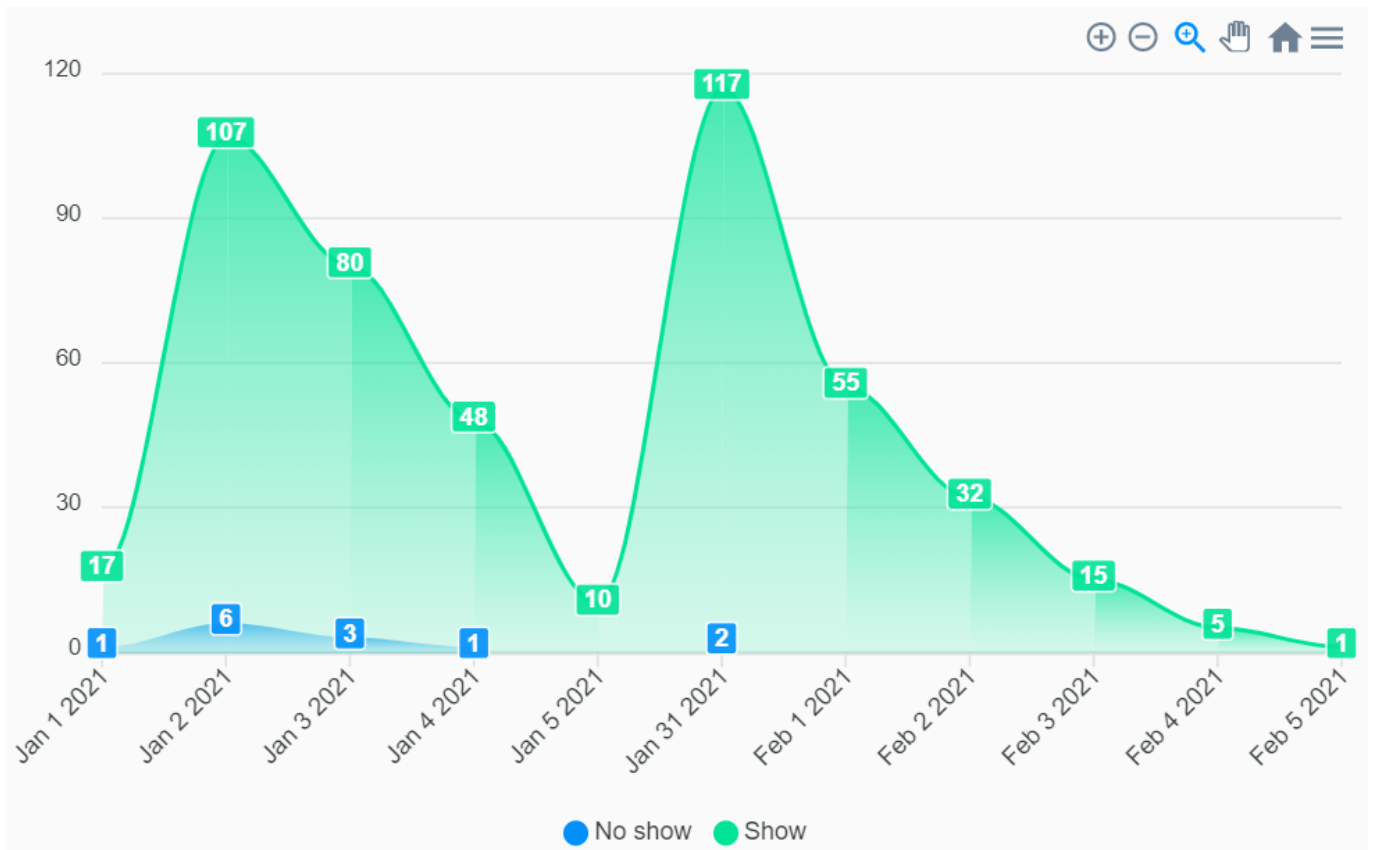
Using your new cube in a notebook:

As now you has a cube with dimensions that can show past appointments as do predictions about future appointments, you can explore this information in a notebook.

For example, you can create a pivot table showing the history of past appointments:



And ,you can also show the forecast for future appointments using the dimension which uses an IntegratedML prediction model:



You can access this example in my application by searching a notebook called "medical-appointments".

IRIS Analytics Notebook

New Save Save copy Delete

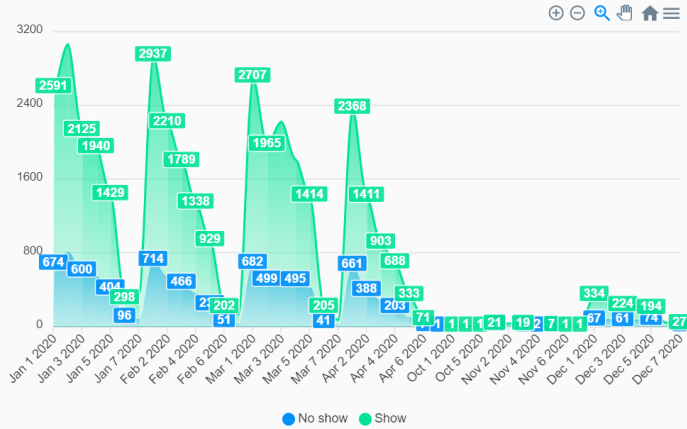
medical-appointments

No-show analysis

No-show distribution over 2020:

⊕ ⊖ Markdown

⊕ ⊖ Markdown



⊕ ⊖ Pivot table

No-show forecast for next 2 months:

⊕ ⊖ Markdown



⊕ ⊖ Pivot table

[#InterSystems IRIS #InterSystems IRIS Analytics \(DeepSee\)](#)  
[Check the related application on InterSystems Open Exchange](#)

Source URL: <https://community.intersystems.com/post/using-integrateddml-create-cube-dimension>