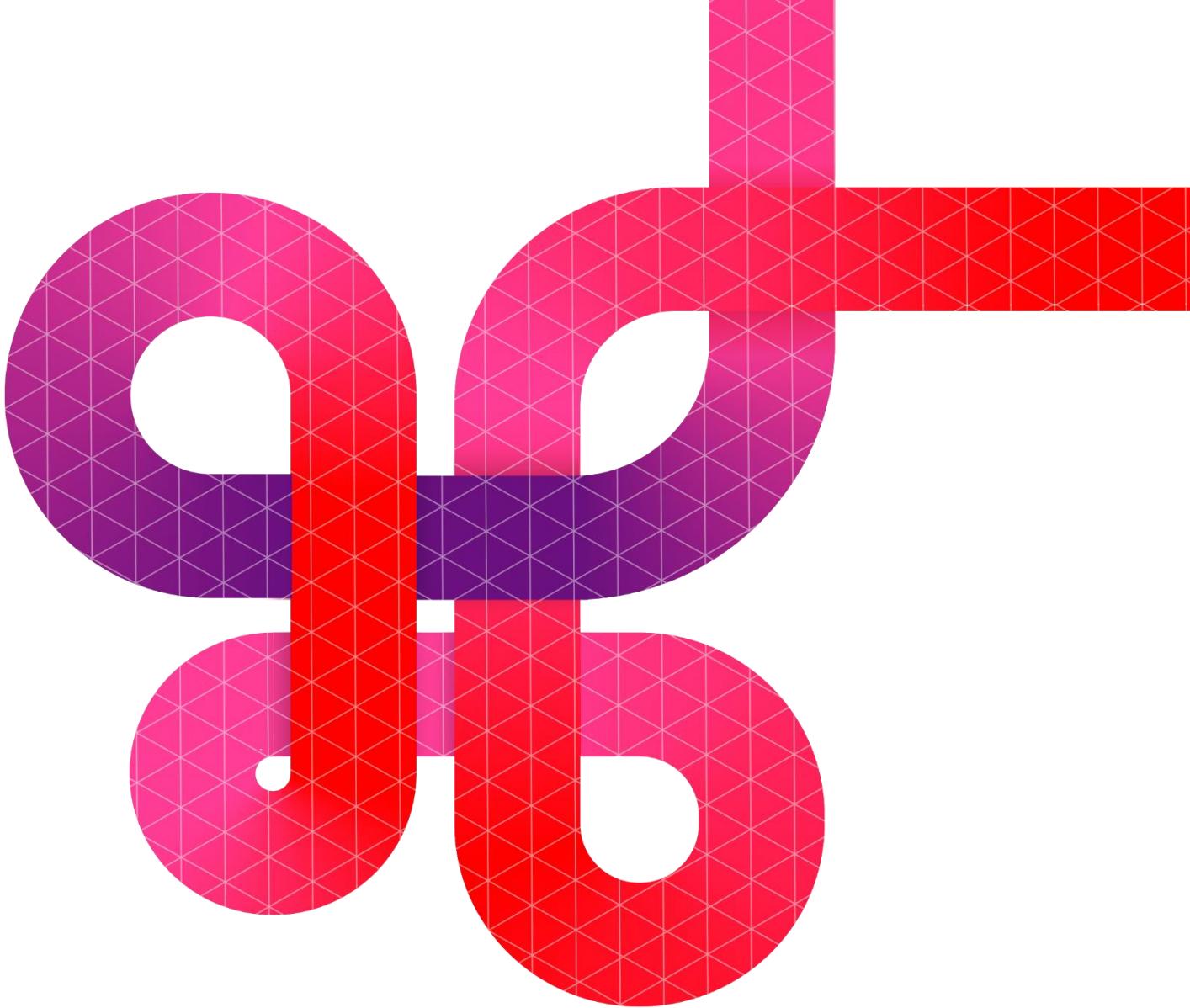




Celonis Academy– AP Case Study

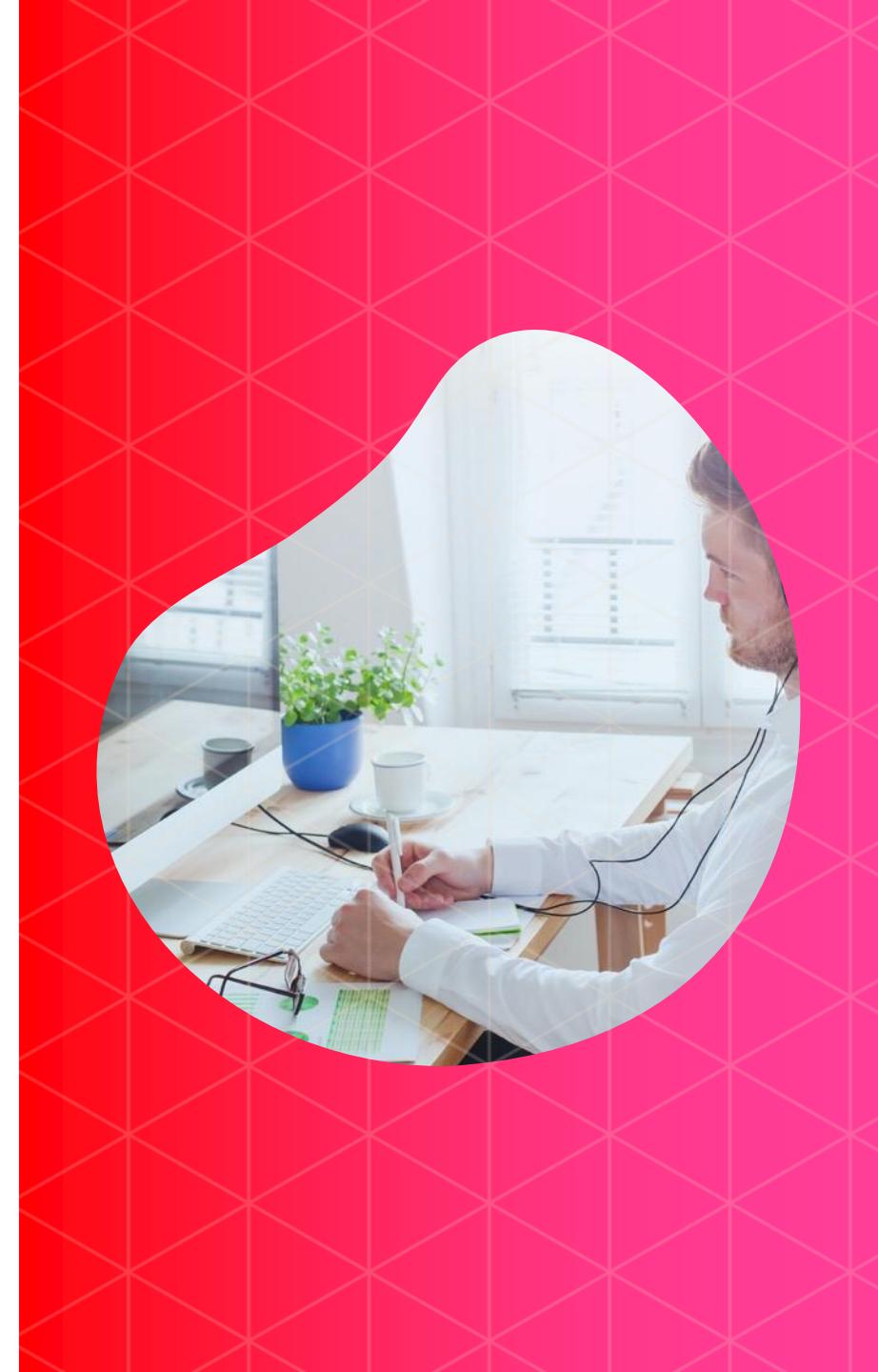
Detailed Answers and Guide



Accounts Payable Case Study

Agenda

1. Connecting to the Source System
2. Setting Up Extraction
3. Filtering and Execute Extraction
4. Creating Activity Table (Transformations)
5. Adding an Activity
6. Setting Up the Initial Data Model
7. Extending the Data Model
8. Finalizing the Data Model
9. Analysis Question Answers



1

Celonis Intelligent Business Cloud

Connecting to the Source System



Connecting to the Source System

- 1 Let's begin by signing into your training workspace.

Sign in - Celonis

EMAIL

PASSWORD

[Forgot Password?](#)

Sign In

- 2 From your IBC Homepage, select Event Collection.

The navigation bar includes: Process Analytics, Action Engine, **Event Collection**, Transformation Center, and more.

Workspaces Analyses

All Workspaces

TAGS Untagged CLEAR ALL

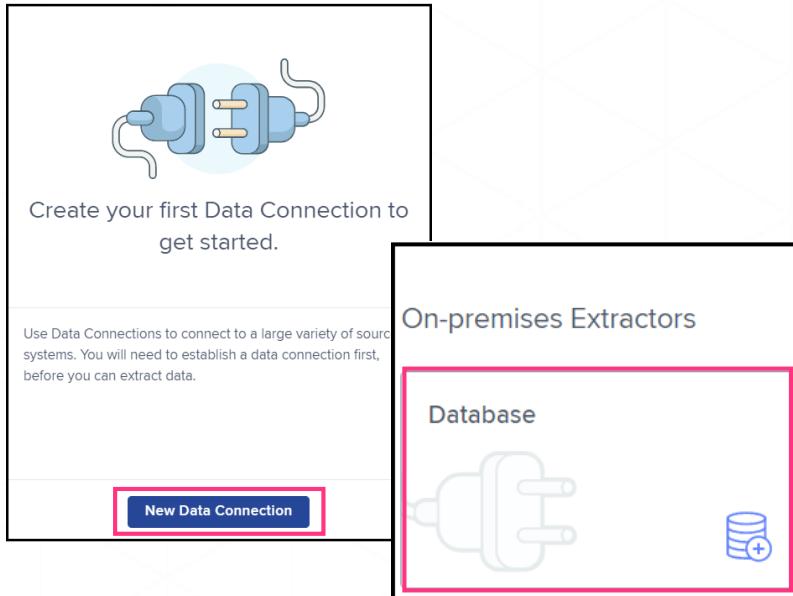
- 3 On the Event Collection page, create a New Data Pool.

The top navigation bar includes: Q, App Store, S, Group by, Search, and **New Data Pool**.



Connecting to the Source System

- 4** Once a New Data Pool is created, create a New Data Connection and select Database as the extraction type.



- 5** Enter the following information for the corresponding fields.
Please do not make any additional changes to other fields..

Credentials

Name: Data Engineer AP Case Study
Connection type: Direct
Type: Microsoft SQL Server (native)
Host: 3.120.99.40
Port: 1433
Database Name: celonis
Schema Name: CASESTUDY
Username: Training_CelonisDataEngineer
Password: Celonis123!

- 6** Once you select Done, the Data Connection will be successfully established like what is shown below:

Data Connections				New Data Connection
Name	Type	Uplink Name	Additional Information	⋮
Data Engineer AP Case Study	Database			⋮

2

Celonis Intelligent Business Cloud

Setting up an Extraction



Setting up the Extraction

1

To set up an Extraction, select **Go To Data Jobs** from the Event Collection page or by selecting **Data Jobs** from the left-hand side.

The screenshot shows the Celonis interface. On the left, there is a message: "You have not executed any Data Jobs yet." Below it, a descriptive text states: "Data Jobs combine extraction and transformation tasks and allow you to execute them in sequence. For extractions, you first need to establish a Data Connection." At the bottom, a button labeled "Go To Data Jobs" is highlighted with a red box. On the right, a sidebar menu is open, showing various options: Overview, System Administration, Data Connections, File Uploads, Data Configuration, Data Jobs (which is highlighted with a red box), Process Data Models, Advanced Settings, Data Pool Parameters, Task Templates, Scheduling, and Execution History.

2

When creating a Data Job for the first time, you will need to select **New Data Job** shown in the image below.

The screenshot shows the "New Data Job" creation screen. It displays a message: "You do not have any jobs created yet". Below it, a descriptive text explains: "Jobs allow you to import and manipulate data from your source systems to Celonis. In a job you can orchestrate extractions from source systems and data transformations one after another. A job can be executed manually or scheduled for reoccurring executions." A prominent blue button labeled "New Data Job" is highlighted with a red box.

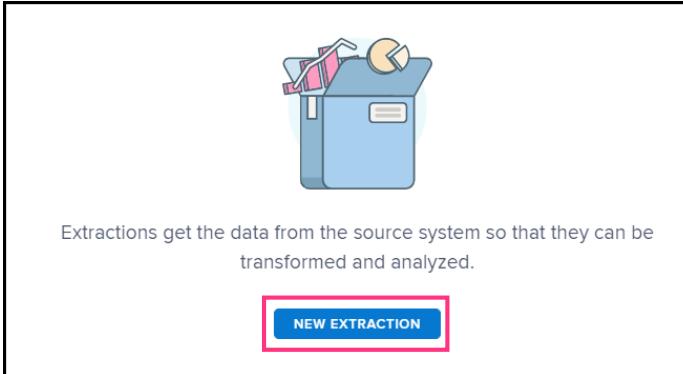
Name: Accounts Payable
Data Connection: Data Engineer AP Case Study

The screenshot shows the "New Data Job" configuration dialog. It has fields for "NAME" (set to "Accounts Payable") and "Data Connection" (set to "Data Engineer AP Case Study"). At the bottom, there are "Cancel" and "Save" buttons, with "Save" highlighted with a red box.

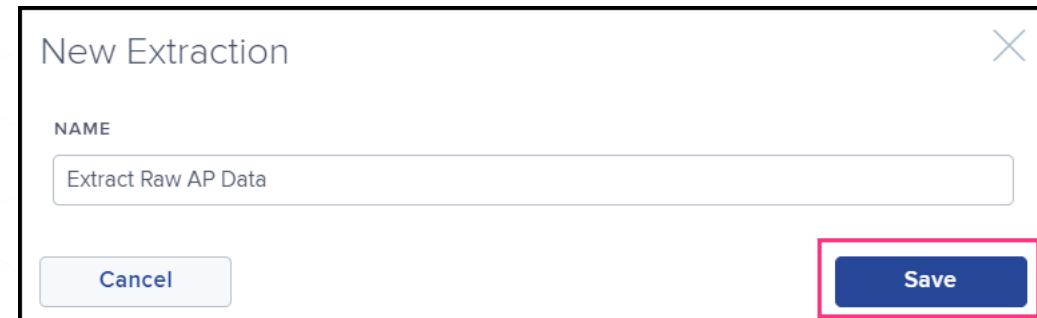


Setting up the Extraction

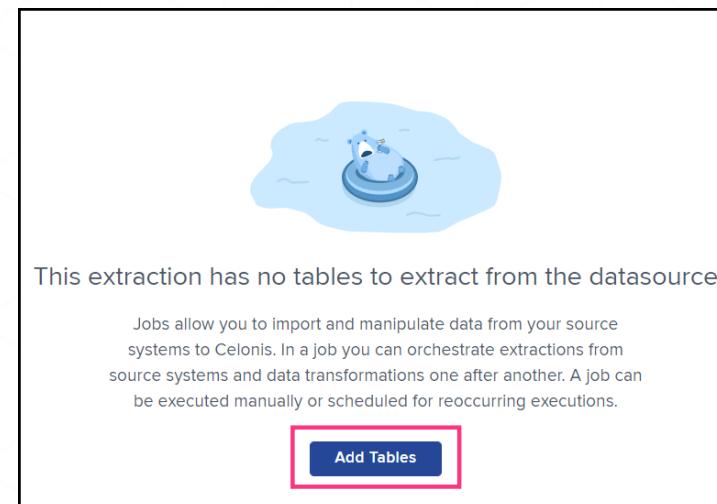
- 3 To create the first extraction, select New Extraction.



- 4 Because we're extracting the raw Accounts payable data, lets name the New Extraction Extract Raw AP Data.



- 5 Click on Add Tables to select which tables to extract from the Raw Accounts Payable Data.





Setting up the Extraction

6

Select all the available tables on the Add Table page and press Save.

Add Table

Search Tables Import Table List

SEARCH FOR TABLES

Use '*' for partial match (e.g. "%data" will search for tables ending with "data") and use ":" to search for schemas (e.g. "A.B" will search for table "B" in schema "A")

AVAILABLE TABLES

CASESTUDY.BKPF

CASESTUDY.BSEG

CASESTUDY.CDHDR

CASESTUDY.CDPOS

CASESTUDY.DD02T

CASESTUDY.DD03M

CASESTUDY.LFA1

Cancel Save

Add Table

Search Tables Import Table List

SEARCH FOR TABLES

Use '*' for partial match (e.g. "%data" will search for tables ending with "data") and use ":" to search for schemas (e.g. "A.B" will search for table "B" in schema "A")

CASESTUDY.BKPF x CASESTUDY.BSEG x CASESTUDY.CDHDR x CASESTUDY.CDPOS x CASESTUDY.DD02T x CASESTUDY.DD03M x CASESTUDY.LFA1 x

No results found

Your search found no matching results.
Please try searching again with different criteria.

Cancel Save

7

After completing the extraction, you should have a screen like the following:

Accounts Payable

Tasks Logs

EXTRactions

EXECUTE DATA JOB

ENABLED

NEW EXTRACTION

Extract Raw AP Data Yes



3

Celonis Intelligent Business Cloud

Filtering and Executing an Extraction

Filtering and Executing an Extraction

1

After setting up the Extraction, lets click on Extract Raw AP Data to apply an extraction filter.



Why do we set filters?

Filters are set because sometimes we don't need all the information in the Data Model. For example, if you want to look at data in the past 10 years, you would filter out data prior to that because it's not required.

This screenshot shows the configuration details for the 'Extract Raw AP Data' extraction. On the left, under 'Tables', several SAP tables are listed: CASESTUDY_BKPF, CASESTUDY_BSEG, CASESTUDY_CDHDR, CASESTUDY_CDPOS, CASESTUDY_D002T, CASESTUDY_D003M, and CASESTUDY_LFA1. The 'BKF' tab is selected. The main area contains three sections: 'General', 'Time Filter', and 'Additional Filter'. In the 'General' section, there are checkboxes for 'Join another table during extraction' and 'Override the primary key columns'. In the 'Time Filter' section, there are checkboxes for 'Enable creation date filter' and 'Enable change date filter'. The 'Additional Filter' section contains two code snippets: 'Filter Statement' and 'Delta Filter Statement', both of which contain the SQL query: `1: COLUMN_A > 1 AND COLUMN_B IN ('example1', 'example2')`.



In most cases, there will be a time filter for CDHDR and CDPOS because tables usually are huge in SAP. However, in this case study no filter is needed for CDHDR or CDPOS.



Filtering and Executing an Extraction

- 2 From the CASESTUDY.BKPF table, enable the creation date filter.

The screenshot shows the 'Time Filter' configuration for the CASESTUDY.BKPF table. It includes:

- A checked checkbox for "Enable creation date filter".
- A dropdown menu for "Set creation date timestamp column" containing "CPUDT".
- A note: "The creation date timestamp will be used for the initial data load and for following loads including delta loads. Leave empty for loading a table without time restriction."
- A section for "Set Default Start Date" with dropdowns for "Custom Date" (set to "Now") and "Until" (set to "Now").
- A note: "Set default start date for initial loads. You can choose a parameter or define a custom date."
- A date input field "Load Data From" showing "10/01/1994 12:00 AM".
- An unchecked checkbox for "Enable change date filter".

- 3 Why do we need to join tables?

Joining tables will establish a relationship between the two. In simpler terms, it's like combining multiple tables into one big table. This join enables us to extract the same time scope of BSEG as from BKPF, because the time is only stored in BKPF.

The screenshot shows the 'Join Configuration' dialog for the CASESTUDY.BKPF table. It includes:

- A radio button for "Join another table during extraction" which is selected.
- A section for "CASESTUDY.BKPF" with a "CHANGE TABLE" button.
- A "Custom join condition" section containing:

```
1 BSEG.MANDT = BKPF.MANDT AND
2 BSEG.BUKRS = BKPF.BUKRS AND
3 BSEG.BELNR = BKPF.BELNR AND
4 BSEG.GJahr = BKPF.GJahr
```
- A "Filter on joined table" section containing:

```
1 BKPF.CPUDT >= '01.10.1994'
```
- Buttons for "ADD JOIN" (top right), "CHANGE TABLE" (top right), and "REMOVE JOIN" (bottom right).



The code for the connections are interchangeable, so there will be no issues if you have the BSEG.NAME = BKPF.NAME reversed.

Filtering and Executing an Extraction

4

Navigate back to the Extraction page by clicking the Back Arrow or the Data Jobs trail.

A screenshot of a web-based application interface titled "Data Pools". The navigation path is "Data Pools > Data Engineer Case Study > Data Jobs > Accounts Payable". A red box highlights the "Data Jobs" link in the trail. Below the trail, a button labeled "Edit Extraction: Extract Raw AP Data" is shown, also with a red box around it.

5

Select Options from the Extract Raw AP Data Extraction and press Execute to refresh the data with the Data Filter.

A screenshot of the "Accounts Payable" extraction configuration page. The title bar says "Accounts Payable". Below it are tabs for "Tasks" and "Logs", and sections for "EXTRactions" and "ENABLED". Under "EXTRactions", there is a single entry: "Extract Raw AP Data" with a status of "Yes". To the right of the extraction list is a circular icon with three colored shapes (blue, pink, yellow) and arrows indicating data flow. Below the icon is the text: "Transformations take the extracted data and modify them using SQL statements." At the bottom right is a "NEW TRANSFORMATION" button. On the far right, a context menu is open with various options: Rename, Disable, Move Up, Move Down, Duplicate, **Execute** (which is highlighted with a red box), Execute from here, Convert to template, and Delete.

6

A screenshot of the "Execute Data Job: Accounts Payable" dialog box. It shows a list of extractions under "Extractions": "Extract Raw AP Data" (with "Extractions" expanded). There are buttons for "Select None" and "Select All". Below the list are buttons for "Cancel", "Delta Load" (radio button), "Full Load" (radio button, highlighted with a red box), and "Execute Selection" (button, highlighted with a red box).

6

Make sure that you've selected Full Load and then Execute Selection. You should then receive a Successful Status like what is shown below.

Date	Schedule Name	Status
2019-08-09 11:14:21	Manual Execution	Successful

Celonis Intelligent Business Cloud

Creating Activity Table (Transformations)



Creating Activity Table (Transformations)

Create Table: Activity Table

1

Create a New Transformation to add the activity table.

New Transformation

NAME
Creating Table: Activity Table

DESCRIPTION
This is to create an Activity Table for Data Job

Cancel Save

```
DROP TABLE IF EXISTS _CEL_AP_ACTIVITIES;  
  
CREATE TABLE _CEL_AP_ACTIVITIES(  
    "_CASE_KEY" VARCHAR (50),  
    "_ACTIVITY" VARCHAR (50),  
    "_EVENTTIME" DATETIME,  
    "_SORTING" INT)  
;
```

Schema Explorer

- > BKPF
- > BSEG
- > CDHDR
- > CDPOS
- > DD02T
- > DD03M
- > LFA1
- > **_CEL_AP_ACTIVITIES**

Once you've created the Activity Table, Save and refresh the Transformation page and the new _CEL_AP_ACTIVITIES table will be added.

5

Celonis Intelligent Business Cloud

Adding an Activity



Adding an Activity

Name Section: Add Activity: Activity Name

New Transformation

NAME

DESCRIPTION

Cancel Save



Please note the following throughout this section:

1. You will have to create a **New Transformation** for each activity. The name can be found as the header of each section.
2. **DO NOT** copy and paste the code as the syntax conversion from PowerPoint/PDF to the IBC is not accurate.
3. Everyone codes differently, so your Vertica SQL may look slightly different. Please make sure the logic is the same.



Adding an Activity

Add Activity: Vendor Creates Invoice

```
INSERT INTO _CEL_AP_ACTIVITIES("_CASE_KEY", "_ACTIVITY", "_EVENTTIME", "_SORTING")  
  
SELECT DISTINCT  
    "BSEG"."MANDT" || "BSEG"."BUKRS" || "BSEG"."BELNR" || "BSEG"."GJAHR" || "BSEG"."BUZEI" AS "_CASE_KEY",  
    'Vendor creates invoice' AS "_ACTIVITY",  
    "BKPF"."BLDAT" AS "_EVENTTIME",  
    0 AS "_SORTING"  
  
FROM "BSEG"  
JOIN "BKPF" ON  
    "BSEG"."MANDT"="BKPF"."MANDT"  
    AND "BSEG"."BUKRS"="BKPF"."BUKRS"  
    AND "BSEG"."BELNR"="BKPF"."BELNR"  
    AND "BSEG"."GJAHR"="BKPF"."GJAHR"  
  
WHERE "BSEG"."BSCHL" = '31'  
    AND "BKPF"."BLDAT" IS NOT NULL;
```

Output: 85951 rows affected



Adding an Activity

Add Activity: Enter Invoice in SAP

```
INSERT INTO _CEL_AP_ACTIVITIES("_CASE_KEY", "_ACTIVITY", "_EVENTTIME", "_SORTING")  
  
SELECT DISTINCT  
    "BSEG"."MANDT" || "BSEG"."BUKRS" || "BSEG"."BELNR" || "BSEG"."GJAHR" || "BSEG"."BUZEI" AS "_CASE_KEY",  
    'Enter invoice in SAP' AS "_ACTIVITY",  
    CAST("BKPF"."CPUUDT" AS DATE) + CAST("BKPF"."CPUTM" AS TIME) AS "_EVENTTIME",  
    10 AS "_SORTING"  
  
FROM "BSEG"  
JOIN "BKPF" ON  
    "BSEG"."MANDT" = "BKPF"."MANDT"  
    AND "BSEG"."BUKRS" = "BKPF"."BUKRS"  
    AND "BSEG"."BELNR" = "BKPF"."BELNR"  
    AND "BSEG"."GJAHR" = "BKPF"."GJAHR"  
  
WHERE "BSEG"."BSCHL" = '31'  
    AND "BKPF"."CPUUDT" IS NOT NULL  
    AND "BKPF"."CPUTM" IS NOT NULL;
```

Output: 85950 rows affected



Adding an Activity

Add Activity: Set or Remove Payment Block

```
INSERT INTO _CEL_AP_ACTIVITIES("_CASE_KEY", "_ACTIVITY", "_EVENTTIME", "_SORTING")

SELECT DISTINCT
    "BSEG"."MANDT" || "BSEG"."BUKRS" || "BSEG"."BELNR" || "BSEG"."GJAHR" || "BSEG"."BUZEI" AS "_CASE_KEY",
    CASE
        WHEN "CDPOS"."VALUE_NEW" IS NULL THEN 'Remove payment block'
        WHEN "CDPOS"."VALUE_OLD" IS NULL THEN 'Set payment block'
    END AS "_ACTIVITY",
    CAST("CDHDR"."UDATE" AS DATE) + CAST("CDHDR"."UTIME" AS TIME) AS "_EVENTTIME",
    CASE
        WHEN "CDPOS"."VALUE_NEW" IS NULL THEN 30
        WHEN "CDPOS"."VALUE_OLD" IS NULL THEN 20
    END AS "_SORTING"

FROM "BSEG"
JOIN "BKPF" ON
    "BSEG"."MANDT"="BKPF"."MANDT"
    AND "BSEG"."BUKRS"="BKPF"."BUKRS"
    AND "BSEG"."BELNR"="BKPF"."BELNR"
    AND "BSEG"."GJAHR"="BKPF"."GJAHR"

JOIN "CDPOS" ON
    "CDPOS"."TABKEY" = "BSEG"."MANDT" || "BSEG"."BUKRS" || "BSEG"."BELNR" || "BSEG"."GJAHR" || "BSEG"."BUZEI"
    AND "CDPOS"."TABNAME"='BSEG'

JOIN "CDHDR" ON
    "CDPOS"."MANDANT"="CDHDR"."MANDANT"
    AND "CDPOS"."OBJECTCLAS"="CDHDR"."OBJECTCLAS"
    AND "CDPOS"."OBJECTID"="CDHDR"."OBJECTID"
    AND "CDPOS"."CHANGENR"="CDHDR"."CHANGENR"

WHERE BSEG.BSCHL = '31'
AND (CDPOS.VALUE_NEW IS NULL OR CDPOS.VALUE_OLD IS NULL)
AND CDPOS.FNAME = 'ZLSPR' ;
```

Output: 1653 rows affected



Adding an Activity

Add Activity: Clear Invoice

```
INSERT INTO _CEL_AP_ACTIVITIES("_CASE_KEY", "_ACTIVITY", "_EVENTTIME", "_SORTING")  
  
SELECT DISTINCT  
    "BSEG"."MANDT" || "BSEG"."BUKRS" || "BSEG"."BELNR" || "BSEG"."GJAHR" || "BSEG"."BUZEI" AS "_CASE_KEY",  
    'Clear Invoice' AS "_ACTIVITY",  
    "BSEG"."AUGDT" AS "_EVENTTIME",  
    40 AS "_SORTING"  
  
FROM "BSEG"  
JOIN "BKPF" ON  
    "BSEG"."MANDT" = "BKPF"."MANDT"  
    AND "BSEG"."BUKRS" = "BKPF"."BUKRS"  
    AND "BSEG"."BELNR" = "BKPF"."BELNR"  
AND "BSEG"."GJAHR" = "BKPF"."GJAHR"  
  
WHERE "BSEG"."BSCHL" = '31'  
    AND "BSEG"."AUGDT" IS NOT NULL;
```

Output: 59865 rows affected



Adding an Activity

Add Activity: Due Date Expired

```
INSERT INTO _CEL_AP_ACTIVITIES("_CASE_KEY", "_ACTIVITY", "_EVENTTIME", "_SORTING")  
  
SELECT DISTINCT  
    "BSEG"."MANDT" || "BSEG"."BUKRS" || "BSEG"."BELNR" || "BSEG"."GJAHR" || "BSEG"."BUZEI" AS "_CASE_KEY",  
    'Due date expired' AS "_ACTIVITY",  
    CASE  
        WHEN "BSEG"."ZBD3T" > 0 THEN "BSEG"."ZBD3T" + "BSEG"."ZFBDT"  
        WHEN "BSEG"."ZBD2T" > 0 THEN "BSEG"."ZBD2T" + "BSEG"."ZFBDT"  
        WHEN "BSEG"."ZBD1T" > 0 THEN "BSEG"."ZBD1T" + "BSEG"."ZFBDT"  
        ELSE "BSEG"."ZFBDT" END AS "_EVENTTIME",  
    50 AS "_SORTING"  
  
FROM "BSEG"  
JOIN "BKPF" ON  
    "BSEG"."MANDT" = "BKPF"."MANDT"  
    AND "BSEG"."BUKRS" = "BKPF"."BUKRS"  
    AND "BSEG"."BELNR" = "BKPF"."BELNR"  
    AND "BSEG"."GJAHR" = "BKPF"."GJAHR"  
  
WHERE "BSEG"."BSCHL" = '31'  
    AND "BSEG"."ZFBDT" IS NOT NULL;
```

Output: 85914 rows affected



6

Celonis Intelligent Business Cloud

Setting Up the Initial Data Model



Setting up the Initial Data Model

- 1 Once you have created all the new activities, you should have something like the following:

TRANSFORMATIONS	INFO	ENABLED	PUBLISHED
Creating Table: Activity Table	i	Yes	No
Add Activity: Clear Invoice	i	Yes	No
Add Activity: Enter invoice in SAP	i	Yes	No
Add Activity: Vendor Creates Invoice	i	Yes	No
Add Activity: Set or Remove Payment Block	i	Yes	No
Add Activity: Due Date Expired	i	Yes	No

- 2 Press the Execute Data Job button on the top right. Make sure to select Full Load before clicking Execute Selection.

Execute Data Job: Accounts Payable

[EXECUTE DATA JOB](#)

Select None Select All Search tables in extractions

7 / 7 selected
[Select All](#) | [Select None](#)

Extract Raw AP Data
Extractions

Transformations

[Cancel](#) Delta Load Full Load [Execute Selection](#)

- 3 The Data job will now run. Please be patient until the Status changes to Successful

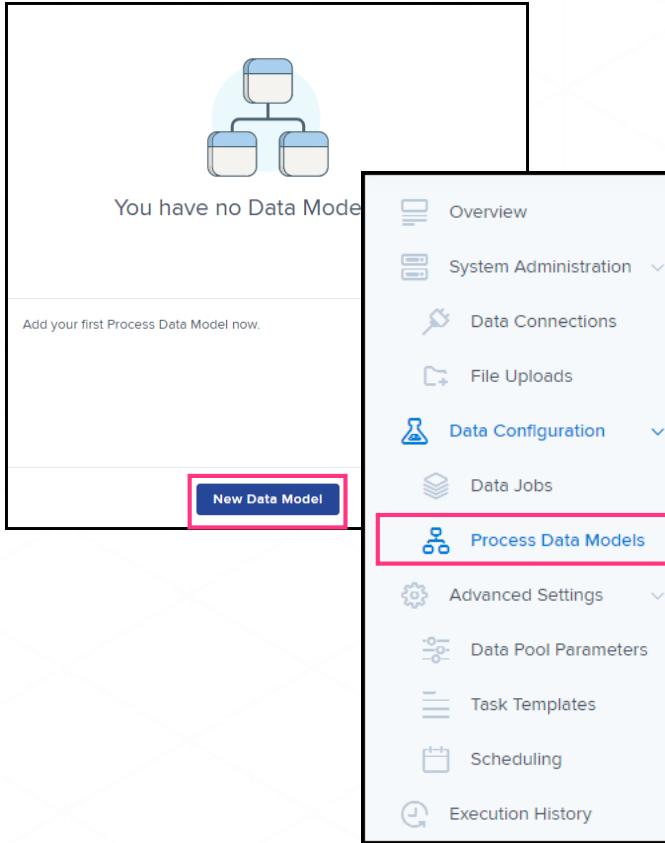
Date	Schedule Name	Status
2019-08-13 09:38:38	Manual Execution	Running



Setting up the Initial Data Model

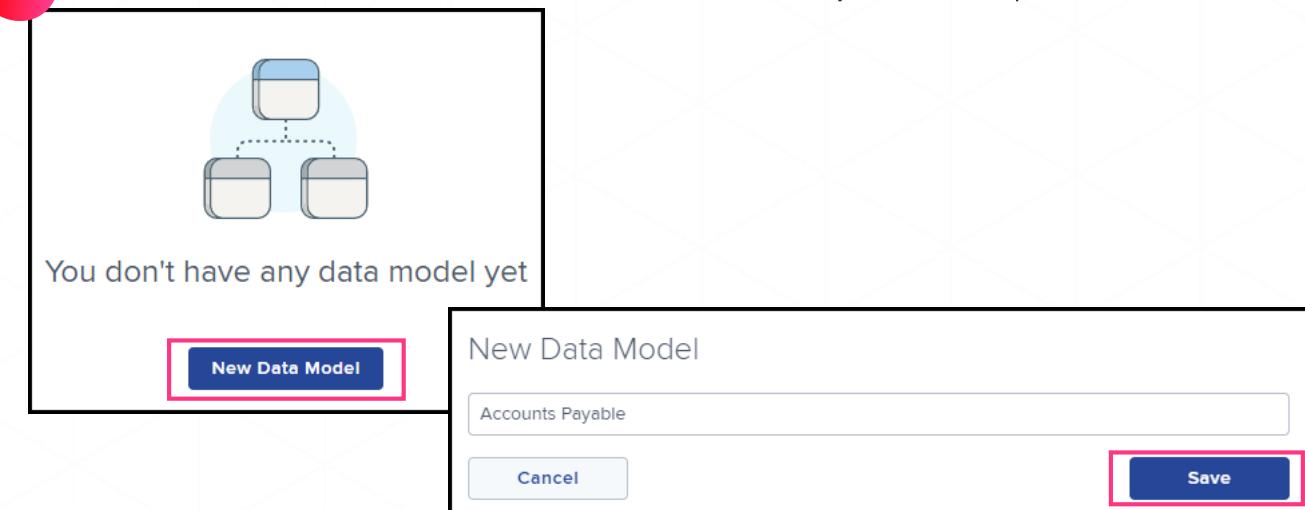
4

To create the Data Model, you can click **New Data Model** from the Overview page or click on **Process Data Models** on the left-hand side.



5

Create a New Data Model, name it **Accounts Payable**, and press **Save**.





Setting up the Initial Data Model

- 6 Select Activity Table and press **Next**.

Selected items

REMOVE ALL FROM SELECTION (1)

Search

_CEL_AP_ACTIVITIES from data connection: Data Engineer AP Case Study REMOVE

Next

- 7 Select the **_CEL_AP_ACTIVITES** as the Activity Table and follow the instructions in the IBC and configure the Activities Table.

ABC	_CASE_KEY	ABC	_ACTIVITY	DATE	_EVENTTIME	123	_SORTING
	80030001900002872...		Clear Invoice	2006-02-16	19:00:00	40	
	800300019000059372...		Clear Invoice	2003-08-13	20:00:00	40	
	8003000190000106720...		Clear Invoice	2007-05-18	20:00:00	40	
	800100019000010720...		Clear Invoice	2006-03-09	19:00:00	40	
	8001000190000475720...		Clear Invoice	2003-08-21	20:00:00	40	
	8001000190000450720...		Clear Invoice	2003-08-21	20:00:00	40	
	8001000190000559720...		Clear Invoice	2003-11-27	19:00:00	40	
	800300019000080672...	x Case ID	x Activity Name	2004-02-25	19:00:00	40	x Sorting
	80030001900007372...		Clear Invoice	2005-05-13	20:00:00	40	
	80010001900001417199...		Clear Invoice	1997-01-17	19:00:00	40	
	8001000190000491720...		Clear Invoice	2003-08-21	20:00:00	40	
	800300019000049772...		Clear Invoice	2003-06-10	20:00:00	40	
	800300019000029672...		Clear Invoice	2002-11-01	19:00:00	40	
	8001000190000238719...		Clear Invoice	1997-04-25	20:00:00	40	
	800200019000021719...		Clear Invoice	1996-09-26	20:00:00	40	
	8001000190000324720...		Clear Invoice	2003-03-27	19:00:00	40	
	80030001900007872...		Clear Invoice	2009-03-25	20:00:00	40	

Finish

- 8 Force Complete Reload your data model and proceed to create a new Analysis to verify the results.

Model Data Loads Calendar Name Mapping

No Data Model has been loaded

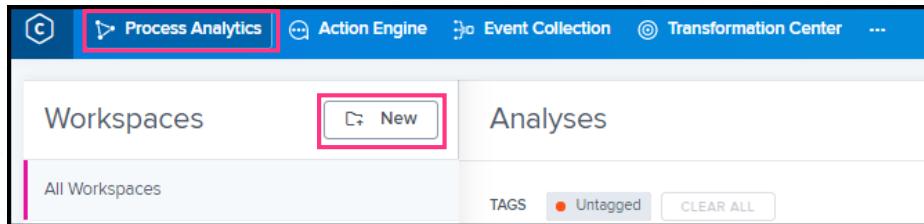
Reload From Cache Force Complete Reload

No Live Data Model has been configured



Setting up the Initial Data Model

- 8 Once the Activity Table has been configured, create a new Analysis by clicking on the Process Analytics tab, and New next to Workspaces.



- 9 Select the Accounts Payable Data Model and press Connect.

A screenshot of the 'Create Workspace' dialog box. The title is 'Create Workspace' with a close button 'X' in the top right corner. Below the title, there is a 'Choose Data Model' section with a search bar labeled 'Search' and a magnifying glass icon. The main area shows a table with two columns: 'Data Model' and 'Parent Data Pool'. There are five rows in the table:

Data Model	Parent Data Pool
Purchase-To-Pay_Training_EN	Demo Processes
O2C-DataModel ActionEngineTraining	Demo Processes
P2P-DataModel ActionEngineTraining	Demo Processes
CelonisCertificationExam_Order-to-Cash_DataModel	Demo Processes
Accounts Payable	Data Engineer Case Study

At the bottom left is a 'Cancel' button, and at the bottom right is a large blue 'Connect' button, which is highlighted with a red box.



Setting up the Initial Data Model

Create Workspace

WORKSPACE NAME
Accounts Payable

Cancel Create

6 Name the new Workspace "Accounts Payable" and click Create.

Create a New Analysis within the Workspace you created. Name the New Analysis "Accounts payable Case Study and click Create.

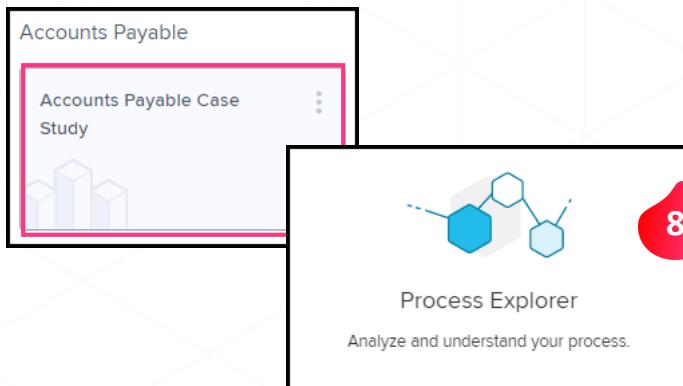
7 Accounts Payable

New Analysis

New Analysis

NAME
Accounts Payable Case Study

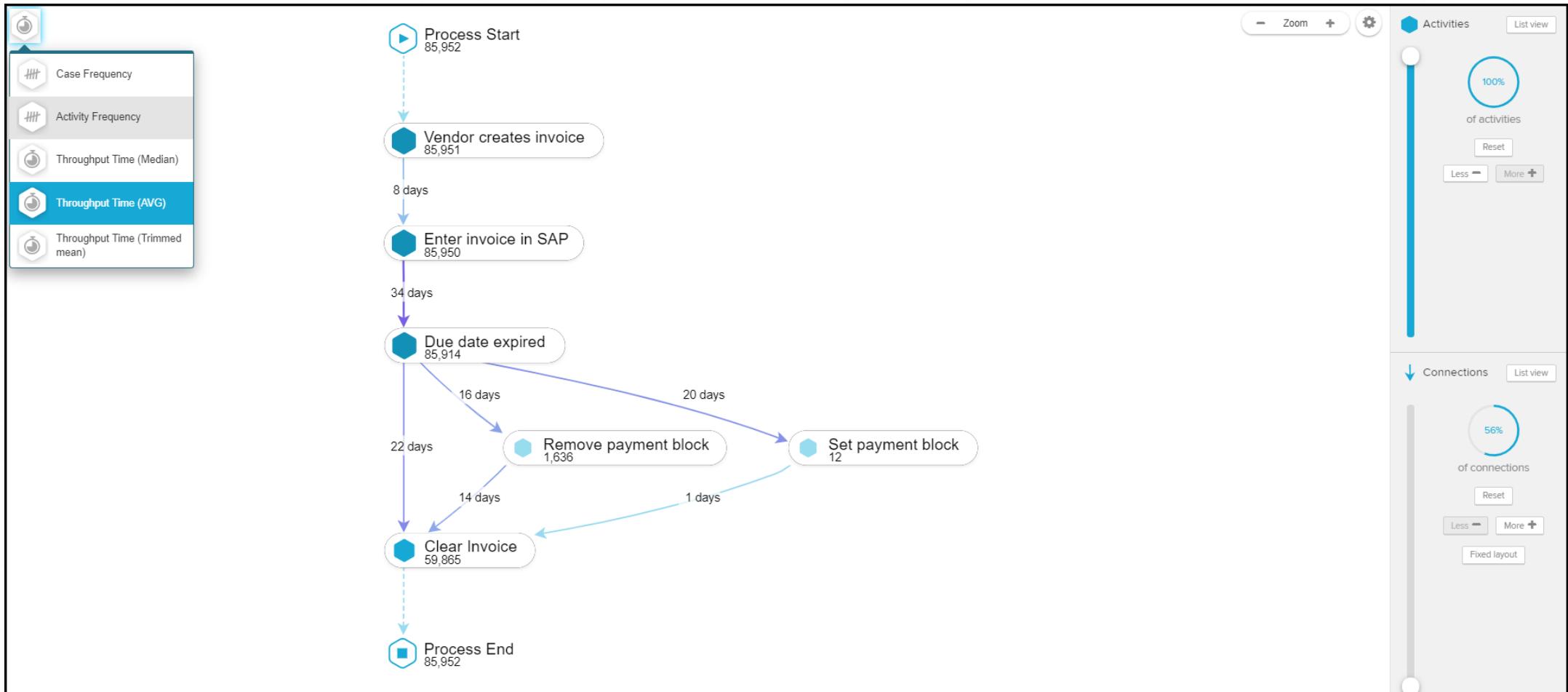
Cancel Create



8 Open the new Analysis and Create a new Process Explorer.
You can also create a New App and drag a Process Explorer onto it.



Setting up the Initial Data Model



9

Your Process Explorer should be the same as the one above. Remember, the KPI of the explorer can be changed on the top left-hand side.

Celonis Intelligent Business Cloud
Extending the Data
Model



Extending the Data Model

1

Like adding an activity, you will have to create new views using the code shown on the next slides.

The screenshot shows the 'Your last Data Job Executions' section. It includes a sidebar with navigation links: Overview, System Administration, Data Connections, File Uploads, Data Configuration, Data Jobs (selected), and Process Data Models. Below the sidebar, there is a table with four rows of data job executions for 'Accounts Payable'. Each row contains a green checkmark icon, the job name, and the execution date. At the bottom of the table is a 'Go To Data Jobs' button.

Date	Job Name
2019-08-30 13:51:39	Accounts Payable
2019-08-29 16:00:06	Accounts Payable
2019-08-28 16:00:09	Accounts Payable
2019-08-27 16:00:07	Accounts Payable

2

Press the Execute Data Job button on the top right. Make sure to select Full Load before clicking Execute Selection.

The screenshot shows the 'Execute Data Job: Accounts Payable' dialog box. It has two buttons at the top: 'Select None' and 'Select All'. On the right side, there is a search bar labeled 'Search tables in extractions' with a magnifying glass icon. Below the search bar, there are two sections: 'Extract Raw AP Data Extractions' and 'Transformations'. Each section has a 'Select All' link. At the bottom of the dialog box are 'Cancel', 'Delta Load', 'Full Load' (which is selected), and 'Execute Selection' buttons.

3

The Data job will now run. Please be patient until the Status changes to Successful

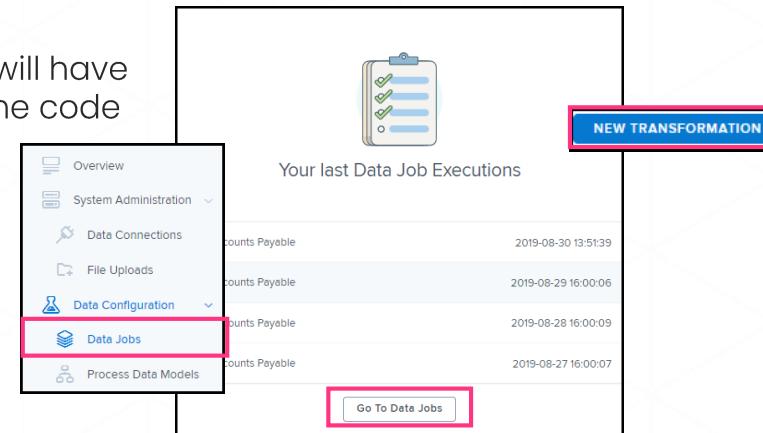
Date	Schedule Name	Status
2019-08-13 09:38:38	Manual Execution	Running



Extending the Data Model

1

Like adding an activity, you will have to create new views using the code provided.



Create Table: AP_BSEG

```
DROP TABLE IF EXISTS "AP_BSEG";
CREATE TABLE "AP_BSEG" AS
SELECT DISTINCT
    "BSEG".*, "BSEG"."MANDT" || "BSEG"."BUKRS" || "BSEG"."BELNR" || "BSEG"."GJAHR" || "BSEG"."BUZEI" AS "_CASE_KEY"
FROM "BSEG"
JOIN "BKPF" ON
    "BSEG"."MANDT"="BKPF"."MANDT"
    AND "BSEG"."BUKRS"="BKPF"."BUKRS"
    AND "BSEG"."BELNR"="BKPF"."BELNR"
    AND "BSEG"."GJAHR"="BKPF"."GJAHR"
WHERE "BSEG"."BSCHL" = '31';
```



Extending the Data Model

Create Table: AP_BKPF

```
DROP TABLE IF EXISTS "AP_BKPF";
CREATE TABLE "AP_BKPF" AS
SELECT DISTINCT
    BKPF.* 
FROM "BKPF"
JOIN "BSEG" ON
    "BSEG"."MANDT"="BKPF"."MANDT"
    AND "BSEG"."BUKRS"="BKPF"."BUKRS"
    AND "BSEG"."BELNR"="BKPF"."BELNR"
    AND "BSEG"."GJAHR"="BKPF"."GJAHR"
WHERE "BSEG"."BSCHL" = '31';
```

Create Table: AP_LFA1

```
DROP TABLE IF EXISTS "AP_LFA1";
CREATE TABLE "AP_LFA1" AS
SELECT DISTINCT
    LFA1.* 
FROM "LFA1"
JOIN "BSEG" ON
    "BSEG"."MANDT"="LFA1"."MANDT"
    AND "BSEG"."LIFNR"="LFA1"."LIFNR"
WHERE "BSEG"."BSCHL" = '31';
```



Extending the Data Model

?

Why do we have to replicate the tables?

Because sometimes the database is messy, we want to make sure we're extracting the Distinct data from each of required tables so that we can produce clean and accurate information.

Can we create Views instead of Tables?

Yes, you can create Views instead of Tables. For additional practice, try creating both!

2

Press the Execute Data Job button on the top right. Make sure to select Full Load before clicking Execute Selection.

The screenshot shows the 'Execute Data Job: Accounts Payable' dialog. At the top right is a large blue button labeled 'EXECUTE DATA JOB'. Below it is a search bar with placeholder text 'Search tables in extractions'. Underneath are two buttons: 'Select None' and 'Select All'. The main area contains two sections: 'Extract Raw AP Data Extractions' and 'Transformations'. Each section has a 'Select All' link next to its status. At the bottom are 'Cancel', 'Delta Load' (radio button), 'Full Load' (radio button, selected), and 'Execute Selection' buttons.

3

The Data job will now run. Please be patient until the Status changes to ✓ Successful

Date	Schedule Name	Status
2019-08-13 09:38:38	Manual Execution	⌚ Running

Celonis Intelligent Business Cloud
**Finalizing the Data
Model**



Finalizing the Data Model

- 1 Revisit the Accounts Payable data model that was created earlier by going to the Overview page or click on Process Data Models on the left-hand side.

Overview

System Administration

Data Connections

File Uploads

Data Configuration

Data Jobs

Process Data Models

Advanced Settings

Data Pool Parameters

Task Templates

Scheduling

Execution History

Process Data Models

Accounts Payable 2019-08-14 08:48:32

New Data Model

- 2 Click on Add Tables and add the newly created views onto the model.

Graph List Add Tables New Foreign Key

Tables

Available items

ADD ALL TO SELECTION (7)

Search

BKPF from data connection: Data Engineer AP Case Study

BSEG from data connection: Data Engineer AP Case Study

CDHDR from data connection: Data Engineer AP Case Study

CDPOS from data connection: Data Engineer AP Case Study

DDO2T from data connection: Data Engineer AP Case Study

DDO3M from data connection: Data Engineer AP Case Study

LFA1 from data connection: Data Engineer AP Case Study

Selected items

REMOVE ALL FROM SELECTION (4)

Search

AP_BKPF from data connection: Data Engineer AP Case Study

AP_BSEG from data connection: Data Engineer AP Case Study

AP_LFA1 from data connection: Data Engineer AP Case Study

_CEL_AP_ACTIVITIES from data connection: Data Engineer AP Case Study



Finalizing the Data Model

- 3 Once the new tables are added, establish the relationships between the tables by setting and connecting the foreign keys.

The screenshot shows the SAP Data Modeler interface with three main windows:

- Left Window:** Shows the table `_CEL_P2P_ACTIVITIES` with four "NEW FOREIGN KEY" buttons for tables `AP_BKPF`, `AP_BSEG`, `AP_LFA1`, and another `_CEL_P2P_ACTIVITIES`.
- Middle Window:** A modal for the second `_CEL_P2P_ACTIVITIES` table, prompting to "Select a table or CANCEL". It lists `AP_BKPF` and `AP_BSEG`, with a "CONNECT TO TARGET TABLE" button highlighted.
- Right Window:** A relationship configuration dialog. It shows the "SOURCE TABLE" as `_CEL_P2P_ACTIVITIES` and the "TARGET TABLE" as `AP_BSEG`. A blue line connects the source field `_CASE_KEY` to the target field `_CASE_KEY`. Both fields have a red "X" icon. Below the tables are search bars and a list of fields: `ABC _CASE_KEY`, `ABC ACTIVITY_EN`, `DATE _EVENTTIME`, `123 _SORTING` on the source side; and `ABC MANDT`, `ABC BUKRS`, `ABC BELNR`, `ABC GJAHR`, `ABC BUZEI` on the target side. A large "Save" button is at the bottom right.



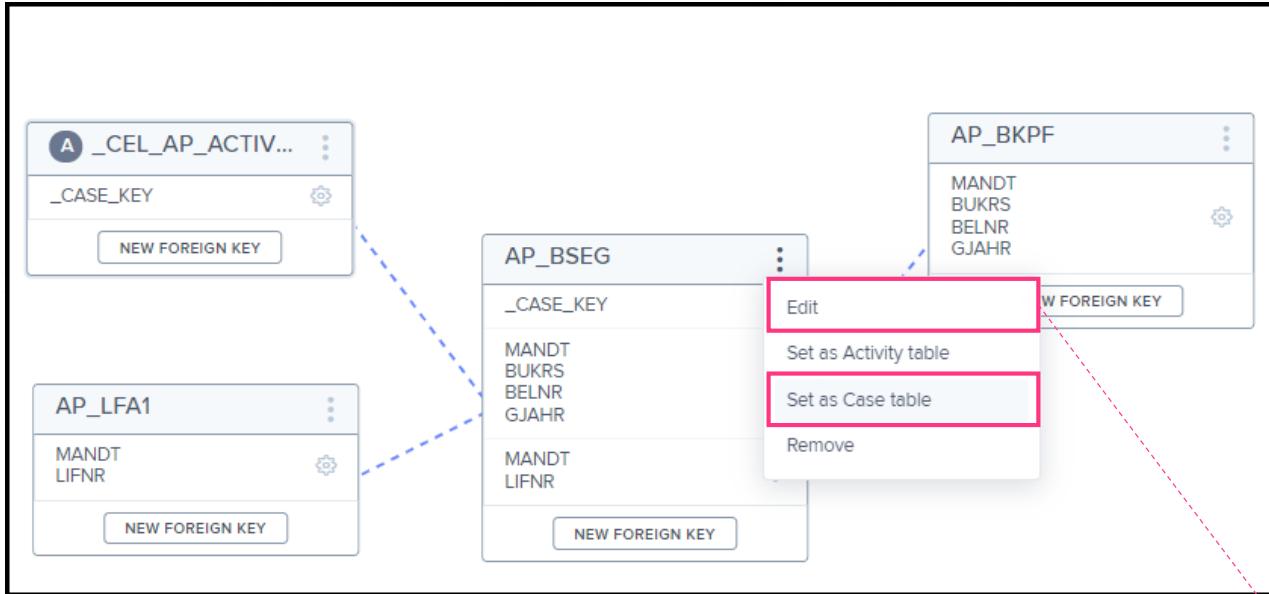
You will need to establish a relationship between all the tables. Continue to the next page to see the fully connected model. You can use <http://leanx.eu/en/sap/table/search> as a resource.



Finalizing the Data Model

4

Your finalized Data Model should be like the one below. Remember to set your Case Table.



5

Edit your Alias by clicking Edit.

The dialog box shows the following fields:

- SCHEMA**: Data Engineer AP Case Study
- NAME**: AP_BSEG
- ALIAS**: BSEG

Buttons at the bottom include `Cancel` and `Save`.



Finalizing the Data Model

6

Access Name Mapping and configure the fields with the information provided. After the fields are filled out, Load Mappings From Pool.

Model Data Loads Calendar **Name Mapping**

Table name mappings are in table

SELECT TABLE FROM POOL
Data Engineer AP Case Study > DD02T SELECT

Technical names column

SELECT COLUMN
TABNAME SELECT

Pretty names column

SELECT COLUMN
DDTEXT SELECT

Language key column

SELECT COLUMN
DDLLANGUAGE SELECT

Column name mappings are in table

SELECT TABLE FROM POOL
Data Engineer AP Case Study > DD03M SELECT

Table names column

SELECT COLUMN
TABNAME SELECT

Technical names column

SELECT COLUMN
FIELDNAME SELECT

Pretty names column

SELECT COLUMN
SCRTEXT_M SELECT

Language key column

SELECT COLUMN
DDLLANGUAGE SELECT

Load Mappings From Pool



Finalizing the Data Model

7

Your Name Mapping results should match was is shown below.

Table name mappings	
LANGUAGE KEY	NUMBER OF NAME MAPPINGS
DE	3 / 4
EN	3 / 4
Column name mappings	
LANGUAGE KEY	NUMBER OF NAME MAPPINGS
DE	174 / 185
EN	177 / 185

8

Force Complete Reload your data model and proceed to the Analysis to verify the results.

The screenshot shows the Celonis Data Model interface. At the top, there is a navigation bar with tabs: Model, Data Loads (which is highlighted with a pink underline), Calendar, and Name Mapping. Below the navigation bar, there is a message: "No Data Model has been loaded". Further down, another message says: "No Live Data Model has been configured". At the bottom right of the interface, there are two buttons: "Reload From Cache" and "Force Complete Reload". The "Force Complete Reload" button is highlighted with a pink rectangular box.

Celonis Intelligent Business Cloud Analysis Question Answers

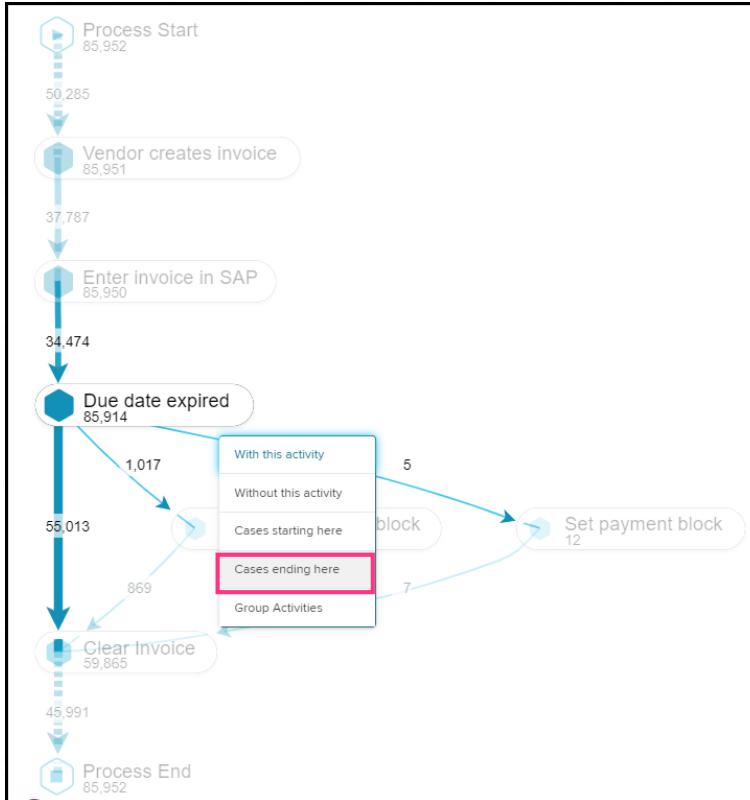
Note: There are multiple ways to produce the same answers!



Analysis Questions

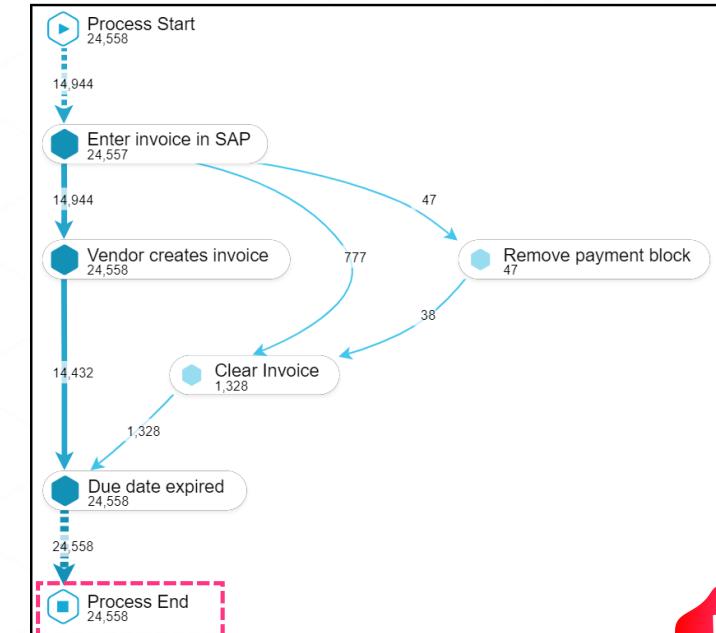
Determine the % and number of cases where the process ends with "Due date expired".

Answer: 29%, 24,558 Cases



1

Right-click on the Due date expired and select Case ending here.



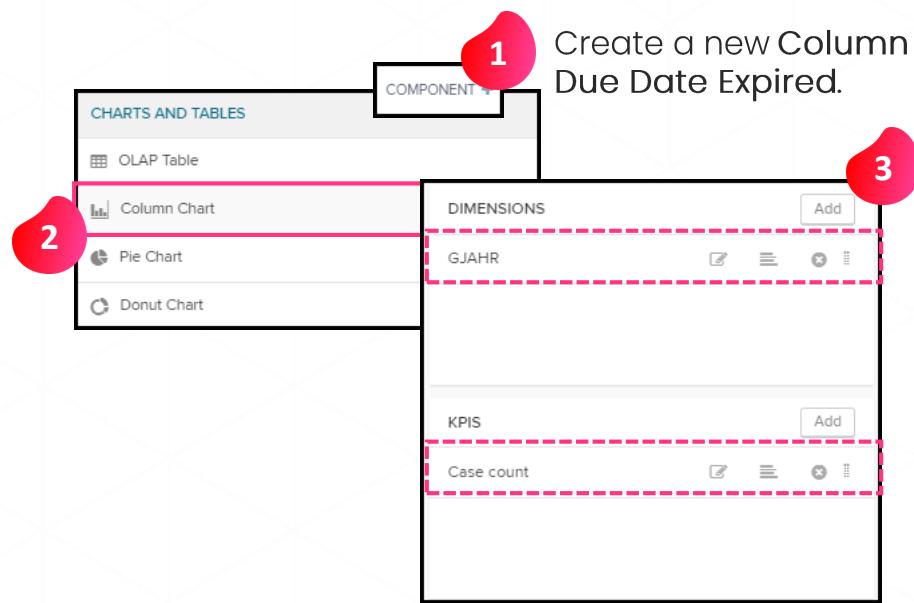
The number of cases can be found in the filtered process explorer. The % can be found on the top toolbar.



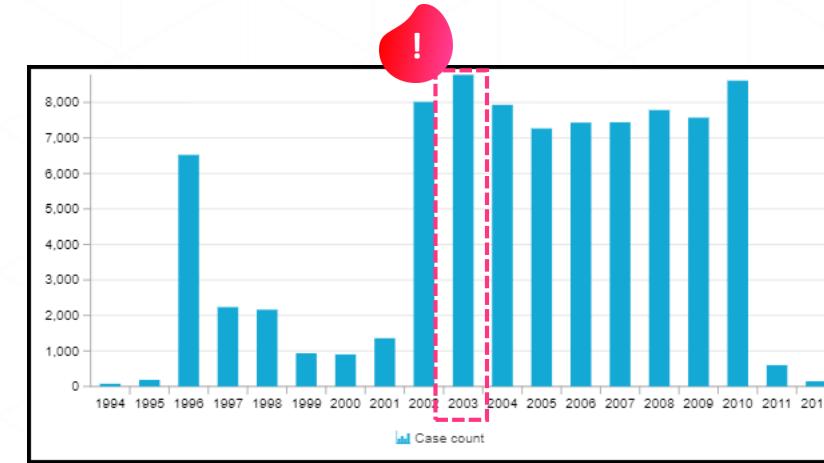
Analysis Questions

How many invoice items (cases) have been booked in per fiscal year (BKPF.GJAHR)? What is the year with the highest number of invoice items?

Answer: 2003



Create a new Column Chart, configure the correct DIMENSIONS and KPIs, and filter by the Activity Due Date Expired.





Analysis Questions

Calculate the percentage of cases that have not been cleared yet.

Answer: 30%

The screenshot illustrates the celonis platform interface for analyzing case data. At the top, a header bar shows "86k of 86k cases selected" and a progress bar at 100%. A red circle with the number 1 points to this area. Below the header, a purple hexagon icon represents "Activity selection". A callout box labeled 2 provides instructions: "Select cases that flow or don't flow through specified activities. e.g. only cases that start at 'Create Purchase Order' and flow through 'Delivery of goods'". To the right, a modal window titled "CASE DOES NOT FLOW THROUGH" lists activities: "Clear", "Clear Invoice" (which is highlighted with a red box and labeled 3), "Due date expired", "Enter invoice in SAP", "Remove payment block", "Set payment block", and "Vendor creates invoice". On the far right, a search bar and a magnifying glass icon are visible. The modal has an "ANY" button in the top right corner. To the right of the modal, another callout box labeled 3 contains instructions for activity selection: "Select cases based on activities that the case flows through. Use search or drag and drop from the list on the right to add activities." It also states "Your selection matches 30% of cases" and displays a circular chart with a dashed border containing the text "30%" and "26,087 Cases". A red exclamation mark is positioned at the bottom right of this callout box.

Activity selection

Select cases that flow or don't flow through specified activities.
e.g. only cases that start at "Create Purchase Order" and flow through "Delivery of goods"

1

CASE DOES NOT FLOW THROUGH

Clear

Clear Invoice

Due date expired

Enter invoice in SAP

Remove payment block

Set payment block

Vendor creates invoice

ANY

2

3

Activity selection

Select cases based on activities that the case flows through.
Use search or drag and drop from the list on the right to add activities.

Your selection matches 30% of cases

30%

26,087 Cases

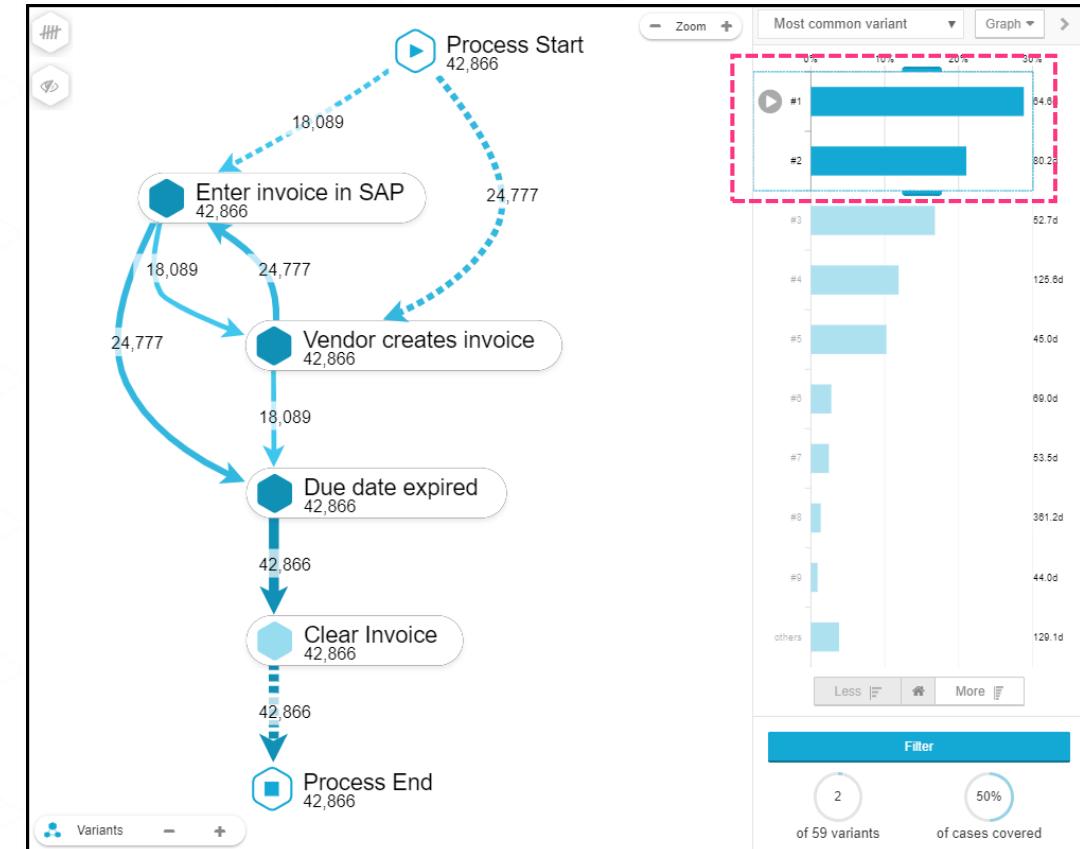
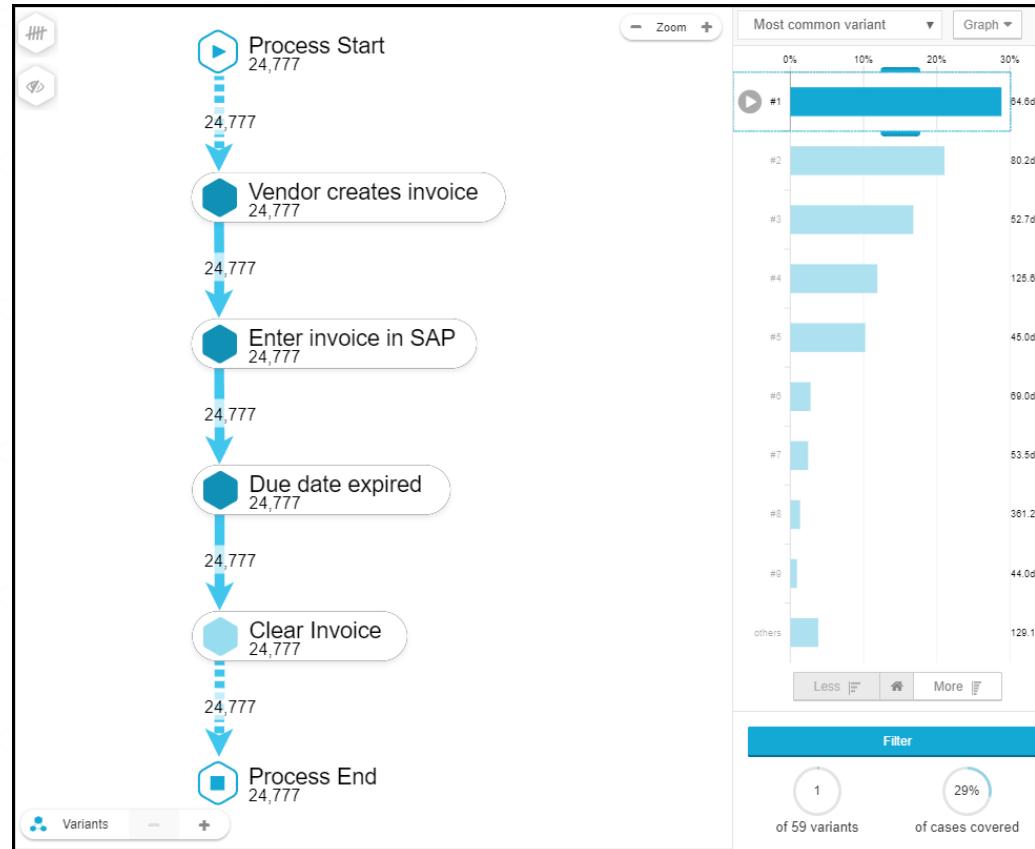
!



Analysis Questions

Select the first two variants on the Variant Explorer. What do you notice changes on the process flow?

Answer: The second variant shows that "Enter invoice in SAP" occurs before the "Vendor creates invoice".

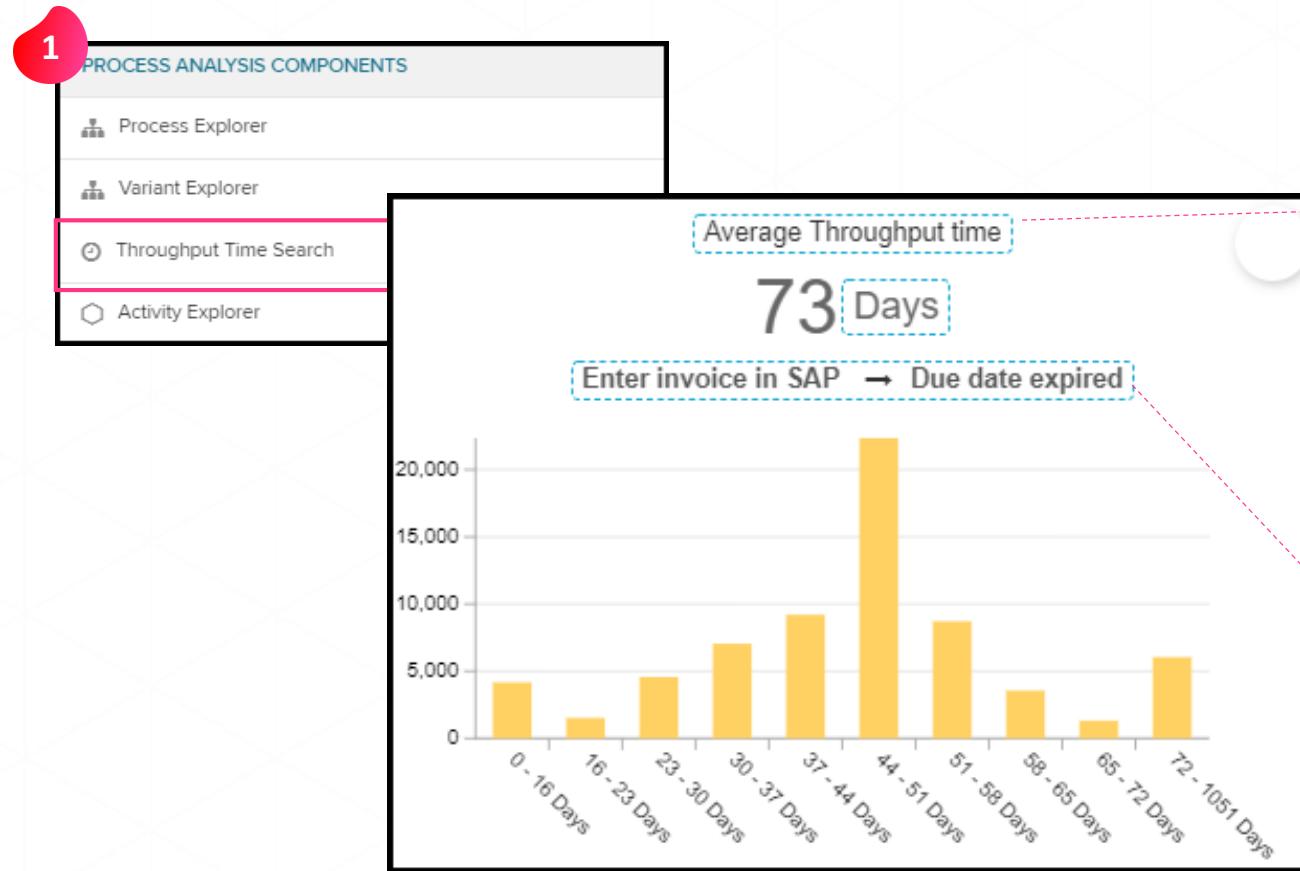




Analysis Questions

What is the average throughput time between Entering Invoice in SAP and Due Date Expired?

Answer: 73 Days



2

Average

Median

Trimmed mean

Maximum

Minimum

3

From: Enter invoice in SAP

To: Due date expired

First occurrence

Last occurrence

Done

Create a Throughput Time Search component and configure the correct fields.