

CHAPTER - 1

INTRODUCTION

1.1 Introduction – Process Mining

Process mining is the combination of two disciplines: **Data Science** and **Business Process Management**. Process Mining essentially uses Data Science techniques, such as Big Data and AI, to address Process Science problems such as process improvement and automation.

It is a powerful and innovative methodology that involves extracting insights and knowledge from event logs generated by various information systems. It offers a data-driven approach to analyze, visualize, and improve business processes within organizations. By applying various analytical techniques and algorithms to event data, process mining aims to provide a clearer understanding of how processes actually unfold in practice, identify inefficiencies, bottlenecks, and opportunities for optimization, and support evidence-based decision-making.

"Process Mining is a set of techniques used for obtaining knowledge of and extracting insights from processes by the means of analyzing the event data, generated during the execution of the process. The end goal of process mining is to discover, model, monitor, and optimize the underlying processes."

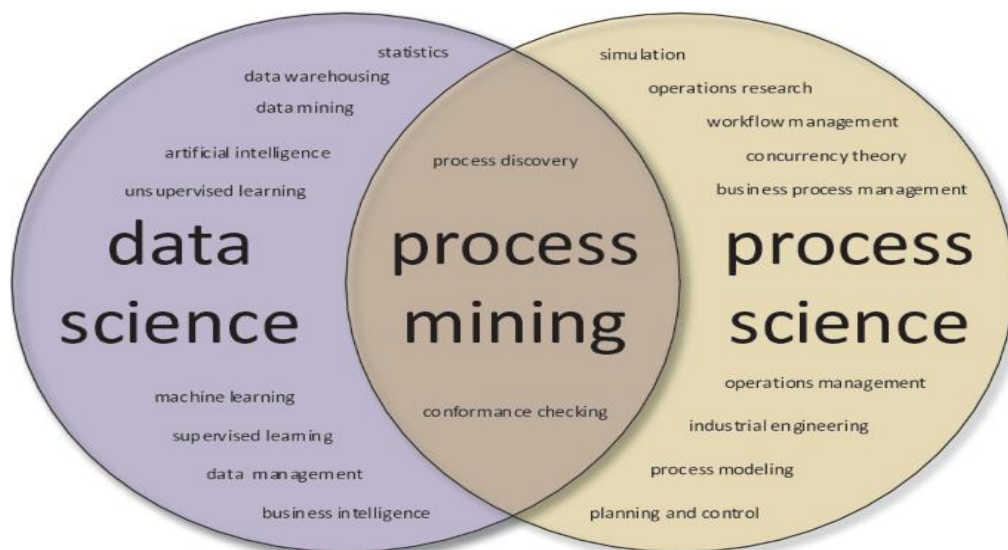


Fig. No. 1.1: Process Mining Science Techniques

1.2 History of Process Mining

Ever wondered how today's leading businesses manage their global activities and processes across tens of countries, hundreds of offices, and thousands of employees? Traditionally, businesses had to rely on assumption and models to reconstruct organization processes.

- This manual modeling could take months, cost \$100,000 in consultancy fees, or employee wages and was subject to human error, like any other manual activity. And the data it was based on very often coming from assumptions and human observations was incomplete at best, and simply inaccurate at worst.
- Now we know something much better exists it's called process mining: a technology that has developed over the last 20 years and which enables business to visualize, analyze and improve their processes in an automated way, using the objective data from their IT systems.

For businesses nowadays, it's quite hard to keep up with all the challenges they face. They have to deal with high customer expectations from across the world with lots of different demands such as same day delivery, transparency, the highest product value, and so on.

At the same they are confronted by the regular demand on the market. For example, things happening to digital transformation, supply chain becoming more digital, automating workflows and many more! All these challenges both on the customer and the market side make it difficult for businesses to survive in the long run. When we compare the Fortune 500 companies in 1955 and in 2015, we see that only 12% of them managed to remain on the list. Taking a closer look at the customer expectations, please take a moment and think about how you, as a customer, were disappointed by a business the last time.

1.3 Process Mining Early Stages

Process Mining originally emerged from academic research into how event log data retrieved from Information Systems could be used to discover, monitor, and improve real processes.

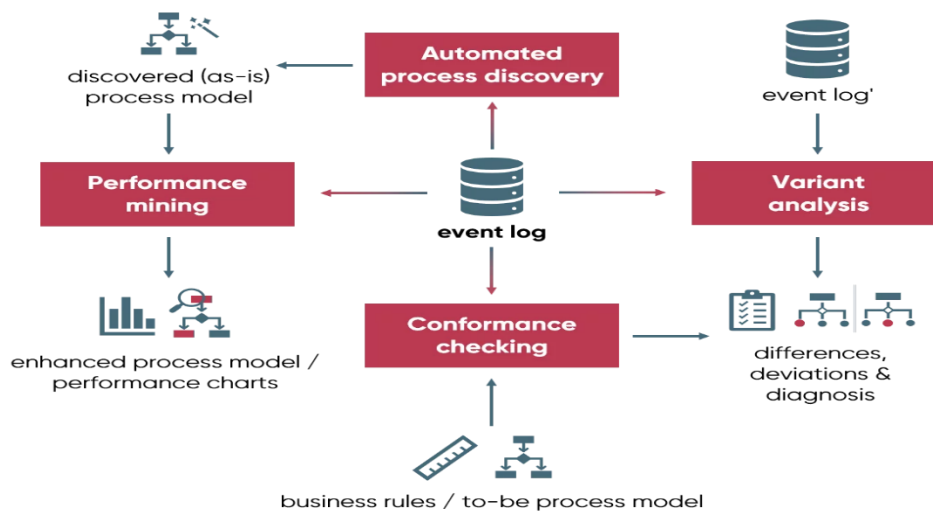


Fig. No. 1.2: Stages of Process Mining

This real data can facilitate several aspects of Business Process Management including:

- Process discovery
- Conformance checking
- Organizational mining, i.e., using data to analyze the roles and people involved in a process.
- Automation
- Simulation, i.e., foreseeing and testing the outcome of a process depending on the variation of variables
- Prediction
- History-based recommendations

Process mining helps businesses reduce these costs by quantifying the inefficiencies in their operational models, allowing leaders to make objective decisions about resource allocation. The discovery of these bottlenecks can not only reduce costs and expedite process improvement, but it can also drive more innovation, quality, and better customer retention.

1.4 Importance of Process Mining

Process mining helps auditors analyze data faster and enables you to predict where compliance issues and risk factors are likely to exist. Since process mining gives you complete insights into your processes, you get a clearer picture of potential problem areas.

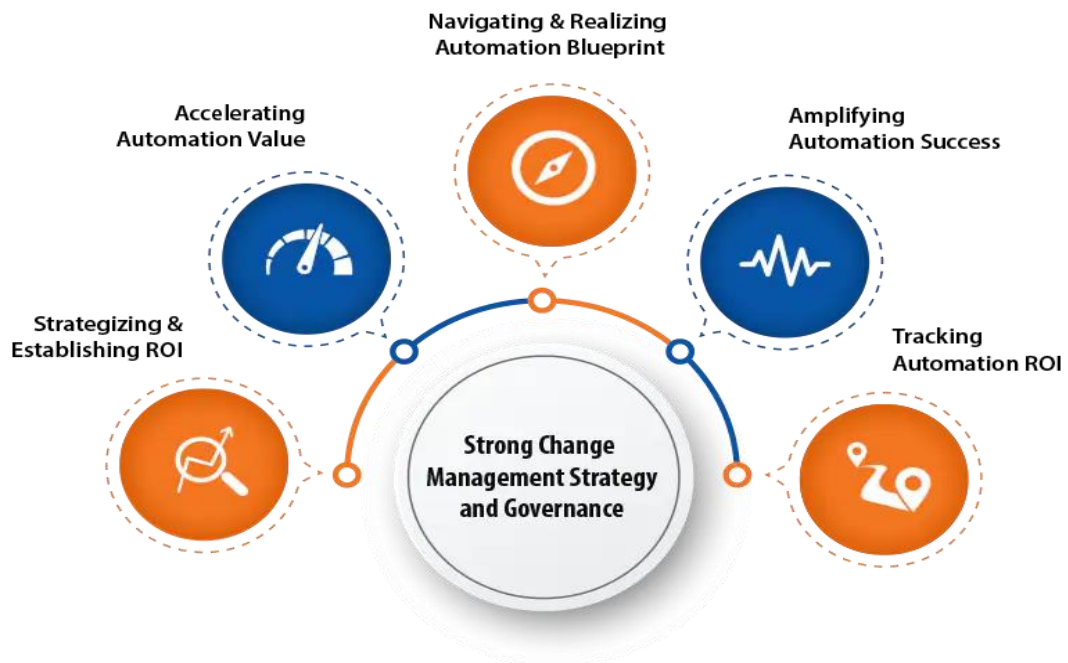


Fig.No.1.3: Importance of Process Mining

Process mining is a rapidly evolving discipline that involves extracting insights and knowledge from event logs recorded by information systems in various organizations. It holds significant importance due to its ability to provide valuable insights into real-world processes, improve process efficiency, and support informed decision-making. Here are some key reasons highlighting the importance of process mining.

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TECHNOLOGY

Process mining is a field that involves using data from information systems to analyze and improve business processes. It aims to discover, monitor, and improve real processes by extracting knowledge from event logs and other data sources. There are several technologies and techniques used in process mining to achieve these goals. Here are some of the key technologies of process mining:

2.1 Automated Process Discovery

Automated process discovery is a subset of process mining that defines the data-driven visualization of a process. It provides an intuitive, visual, and interactive method for exploring each and every step of processes in order to identify bottlenecks. It uses both machine learning and artificial intelligence to keep track of all the possible ways in which a process might be carried out and to suggest ways to automate them.

The following are the steps involved in automated process discovery:

1. **Data Extraction:** Get data from a variety of sources in the form of event logs and performance metrics.
2. **Event processing and mapping:** Using the event logs, the collected data is analysed and mapped out for each specific case. This is also the point at which process deviations appear. Variations are usually due to manual changes or errors.
3. **Create "as-is" processes by combining events:** To fully comprehend each process variation and the associated subprocesses, the generated process maps must be combined and visualized.

2.2 Conformance Checking

Process mining makes use of event logs to show how a process works. Conformance checking is the process of comparing an actual process or event log to an existing reference model or target model. The event log and process model are used as

inputs, and the output is diagnostic data showing the model's differences and similarities with the log. Event logs are examined for compliance with four main quality dimensions:

- 1.Fitness:** indicates how well the process model captures observed behaviour.
- 2.Simplicity:** prevents models with excessive complexity.
- 3.Precision:** restricts process models that allow unlikely event log behaviour.
- 4.Generalization:** refers to process models' ability to generalize and recreate future behaviour, rather than capturing each log trace.



Fig.No.2.1: Technologies of Process Mining

All quality dimensions must be considered when evaluating a process model. Performing conformance tests will reveal any discrepancies between the actual process and the ideal process or reference model. This entails skipping, duplicating, or performing unplanned process activities. Inaccuracies in these processes can lead to audit issues and other regulatory violations. In addition, process deviations may necessitate additional resources or undermine product or service quality, making it more difficult to achieve the desired outcome. Because of this, the majority of process deviations lead to financial losses. Finding and correcting any unplanned process sequences is a top priority for businesses.

2.3 Performance Mining

This is sometimes called model enhancement, extension, or organizational mining. It is the process of analyzing a data-driven process model for potential optimization. The data-driven process paradigm uses a progress log. Depending on this information, changes or improvements are made. If these changes are not implemented correctly, they can have unintended consequences on the business. Performance mining results reflect analysis quality and serve as a benchmark for future analysis. These **results** are used in process discovery and conformance checking methods.

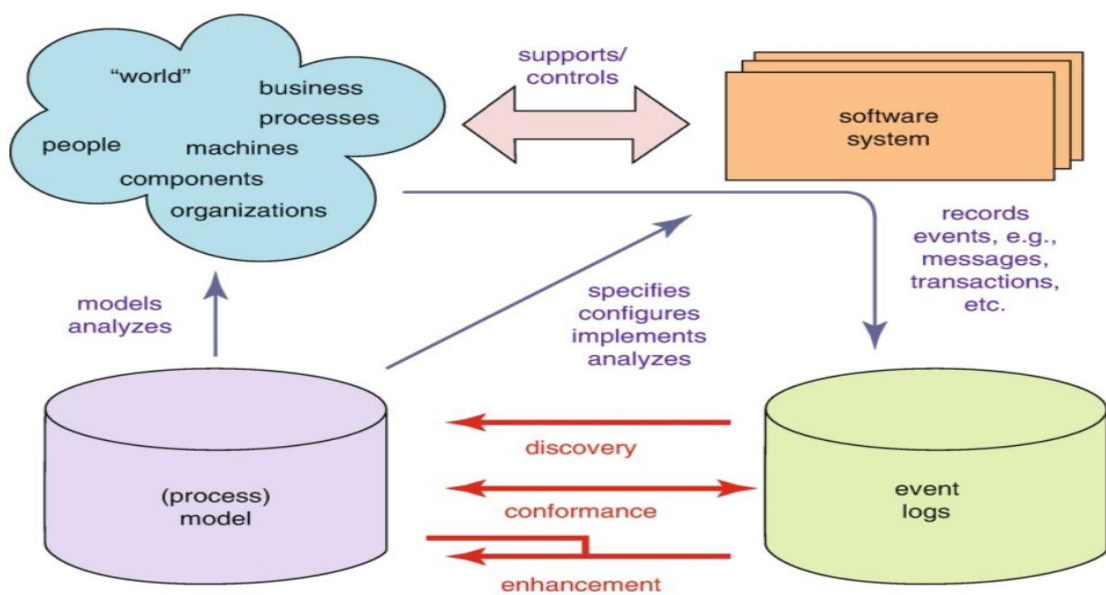


Fig.No.2.2: Event Logs to Process Explanation

Changes in processes may only be evaluated after they have been implemented for some time period. With performance mining, you can continuously improve your operations and make them more efficient.

2.4 Variant Analysis

Variant analysis techniques compare two or more event logs from different business process variants to determine their differences. Business processes can be analyzed from a distinct perspective using variant analysis techniques.

Control flow: Variants are compared based on the occurrence of activities in execution traces and their relative execution order. The control-flow perspective is a type of analysis that focuses on the discovery of the sequence of activities in a business process.

Performance: Variants are compared based on performance measures. Process variant analysis splits an event log into two sub-logs, each of which represents a cohort. The split can be carried out based on contextual data. Then, we can identify distinct process maps for each log files.

2.5 Some other Technologies

Process Visualization Tools: Visualization tools help present the process models, performance metrics, and analysis results in a comprehensible and visually appealing manner. Process maps, flowcharts, and dashboards aid in conveying insights to stakeholders.

Real-time Process Monitoring: Real-time process monitoring technologies continuously analyze event logs as events occur, allowing organizations to respond quickly to deviations and anomalies.

Simulation Tools: Simulation tools use event log data to create simulations of processes. These simulations help organizations predict the impact of changes before implementing them, reducing the risk of negative outcomes.

Process Mining Software: There are various commercial and open-source process mining software tools available that combine several of these technologies into integrated platforms. Examples include Celonis, Disco, ProM, and UiPath Process Mining.

Integration with Other Systems: Process mining technologies often need to integrate with existing enterprise systems, such as ERP (Enterprise Resource Planning) systems, CRM (Customer Relationship Management) systems, and workflow management tools, to access event log data.

CHAPTER-3

APPLICATIONS

Process mining has a wide range of applications across various industries and sectors. Its ability to analyze and improve processes using real event data makes it a valuable tool for optimizing business operations, enhancing efficiency, and ensuring compliance.

Supply Chain Optimization: In industries with complex supply chains, process mining can help optimize processes related to procurement, production, distribution, and inventory management.



Example of Supply Chain Information Systems for Process Mining — (Image by Author)

Fig.No.3.1: Example of Supply Chain

It identifies delays, bottlenecks, and areas for improvement. In supply chain operations, real-time process mining helps provide visibility into the movement of goods, inventory levels, and order fulfillment. By monitoring supply chain processes in real-time, organizations can respond quickly to disruptions, optimize inventory levels, and ensure timely delivery of products.

Fraud Detection and Prevention:

Fraud Detection can be used to detect fraudulent activities or unauthorized actions in financial transactions or other sensitive processes. By analyzing real-time

event data, organizations can identify unusual patterns or deviations from expected behaviors, triggering immediate investigations or automated response mechanisms.

Healthcare Patient Flow Optimization:

Process Mining is valuable in healthcare settings where patient flow and resource allocation are critical. By analyzing real-time data on patient movements, wait times, and resource availability, healthcare providers can make real-time adjustments to optimize patient care and resource utilization.

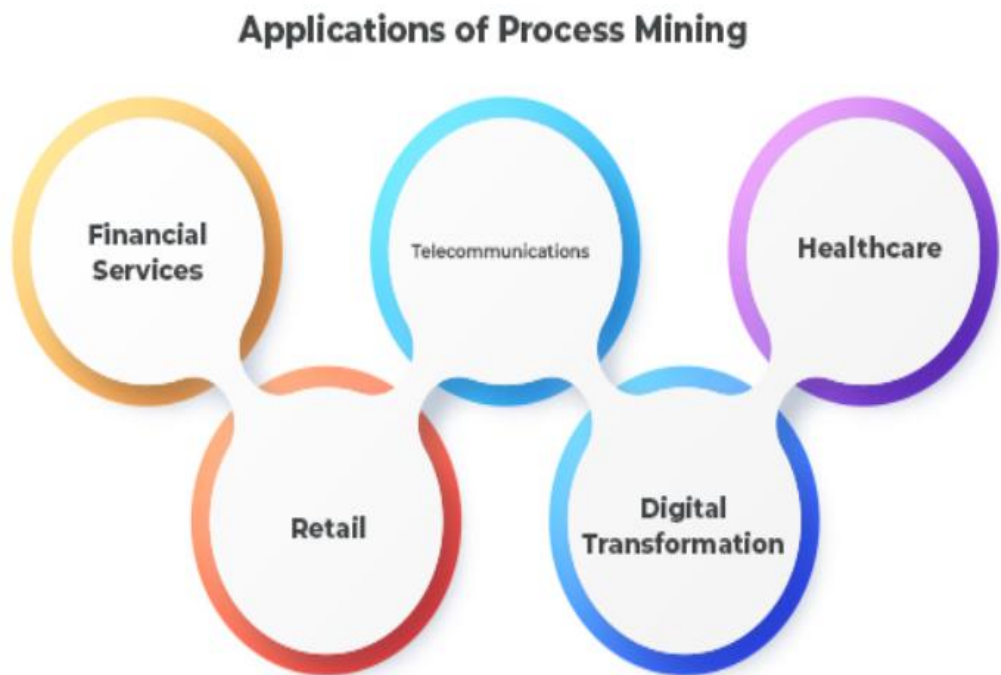


Fig.No.3.2: Applications of process Mining

IT Service Management:

It can be applied to monitor IT service management processes. It helps in identifying performance bottlenecks, system failures, or anomalies in real-time, allowing IT teams to address issues promptly and ensure smooth operations.

Customer Experience Enhancement:

Process mining can be applied to monitor customer interactions and journeys in real-time. By analyzing customer behavior and feedback as it occurs, organizations can make immediate improvements to enhance the customer experience.

Visualization and Reporting:

1.Process Maps: Graphical representations of processes, often using flowcharts or Petri nets, that make it easier to understand process flows.

2. Dashboards: Interactive visualizations that provide real-time insights into process performance and bottlenecks.

Software Tools:

1. **ProM:** An open-source framework for process mining that offers a wide range of plug-ins for different process mining techniques.
2. **Disco:** A commercial process mining tool that focuses on ease of use and offers various analysis and visualization features.
3. **Celonis:** A popular process mining platform that combines process discovery, conformance checking, and process optimization.

CHAPTER-4

MODULES EXPLANATION

Process mining is a set of techniques used for obtaining knowledge and extracting insights from processes by the means of analyzing the event data, generated during the execution of the process. This training track provides both the theoretical and applied foundations around Process Mining.

Process mining reads this data, converts it into an event log, and then creates visualizations of the end-to-end process, along with insightful analytics. An event log contains each step performed during the process (the activity), the time at which the event occurred (the timestamp), and for which instance of the process (the case ID).

Using this event log, algorithms generate a process model that shows the process as it really is - including the timing of each step and all variations.

Process mining is the technology at the heart of the Celonis Execution Management System (or EMS), enabling enterprises to fully understand how their core business processes run and find the hidden value opportunities, before taking intelligent, automated action to improve performance and unlock hundreds of millions across the enterprise.

Process mining creates an “MRI” of a business process that helps you gain visibility and uncover value opportunities hiding within core operations. Celonis process mining has quickly become the backbone of many companies’ efforts to streamline and optimize processes.

In this chapter we are going to learn about Process Mining modules. It includes the following :

1.Fundamentals of Process Mining

1. Review and Interpret
2. Build Analysis
3. Case Study

2.Enhance The Analysis Building Skills And Learn To Get data into Celonis

1. Write PQL Queries
2. Get Data into EMS

4.1 Fundamentals of Process Mining

4.1.1 Review and Interpret Analyses

Process mining is an analytical discipline for discovering, monitoring, and improving processes as they actually are and not as you think they might be. Process Mining works by extracting knowledge from event logs (also called digital footprints) readily available in today's information systems, in order to visualize business processes—and their every variation—as they run.

4.1.1.1 Get To Know Celonis Analysis

Celonis Analysis tools work the same way regardless of the process but since every organization's process is unique with its own nuances, you'll need to apply critical thinking on your part to "connect the dots" so to say, between this training and your own process.

With a Celonis Analysis to identify process inefficiencies, you'll see that three core concepts repeatedly come up: process, activity, and case.

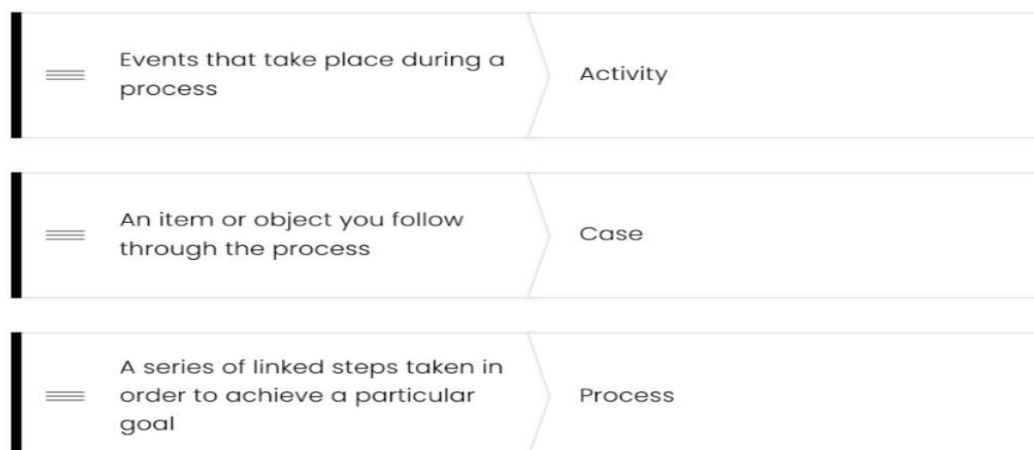


Fig.No.4.1: Process, Case And Activity

4.1.1.2 Navigate to an Analysis:

In the concept of navigate to analysis there are three words in it, that are space, package, analysis. These are arranged in hierarchically. These are used to represent the data in pictorially. By seeing that and graph related to it. We can analyse the data.

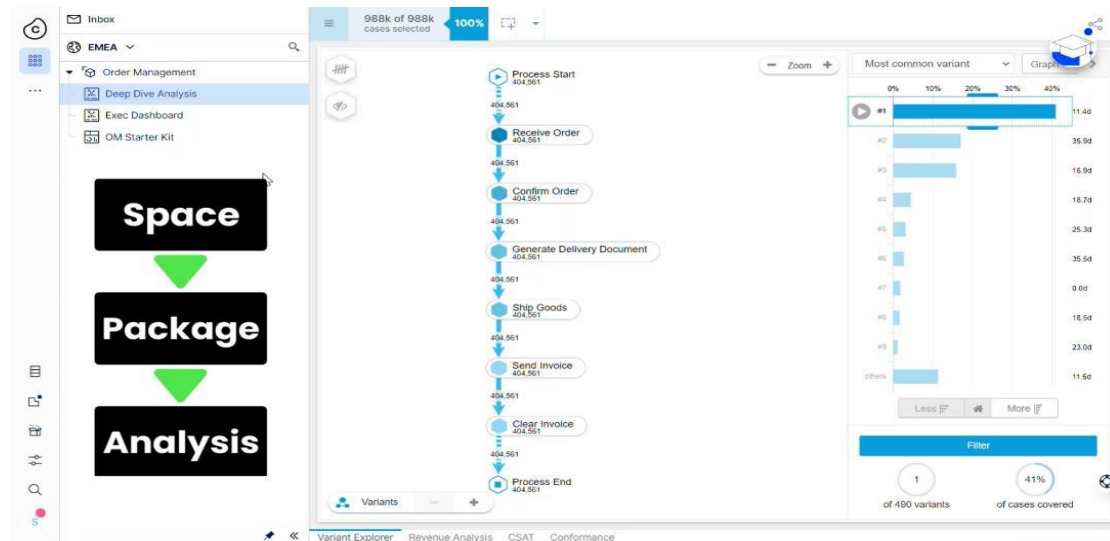


Fig.No.4.2: Navigate Analysis

4.1.1.3 Use The Variant Explorer:

As the name implies, using the Variant Explorer, you can discover all the process variants—that is all the different ways the process flows in your organization. The Variant Explorer is one of the Analysis tools to help you take an "exploratory" approach to find out how your process is performing.

As we can saw, with the Variant Explorer, you can get a quick sense of whether most cases follow an acceptable flow of activities or not, and raise your first analysis questions.

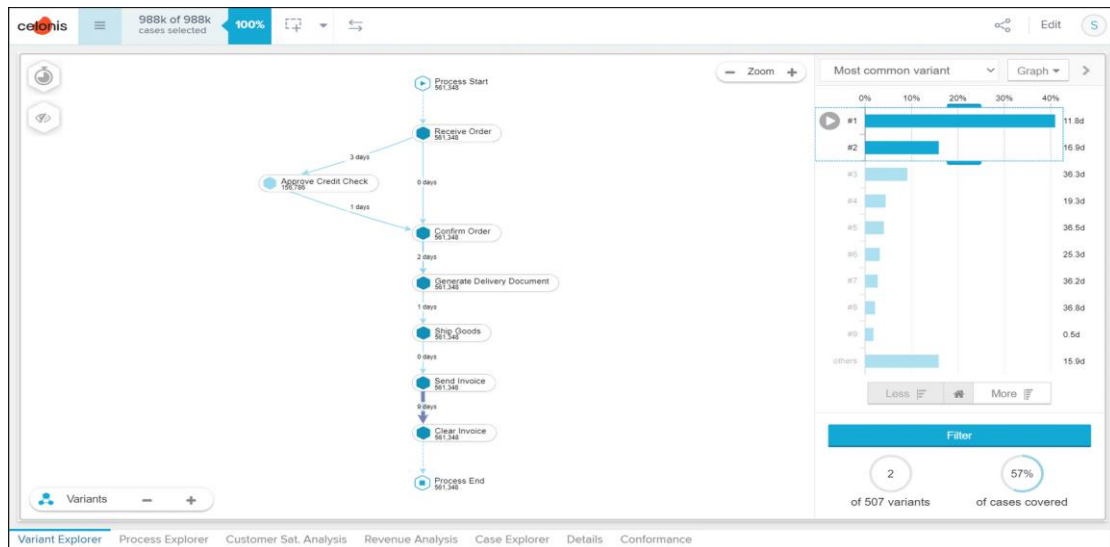


Fig.No.4.3: Variant Explorer

4.1.1.4 Use The Process Explorer:

The Process Explorer is another analysis tool to use when taking an exploratory approach. It's especially useful for quickly revealing activities beyond the most common ones. It also allows you to narrow your focus on a single activity, for example an undesired activity, to see which activities cases typically come from and which activities they're going to.

- The Process Explorer is heavily used by process experts to get a perspective on all process activities in a rather efficient manner.
- In the Process Explorer, you can switch KPIs (Key Performance Indicators) just as you're able to do in the Variant Explorer.

4.1.1.5 Use Charts And Tables , Review KPIs:

With both the Variant and Process Explorers, you got a good sense of what it's like to take an exploratory approach to understand our process. With the addition of charts and tables, we can go deeper into our understanding and drill down on potential root causes of process inefficiencies. We can do this by displaying process dimensions and KPIs .

- dimensions, depending on the nature of the process, can include vendor name, sales organization, region, and material group.

- Key Performance Indicators (KPIs) are used to calculate and add aggregated values; for example, case count, order value, invoice value, throughput time, and automation rate. Process Mining Charts and tables are critical components of analyses.

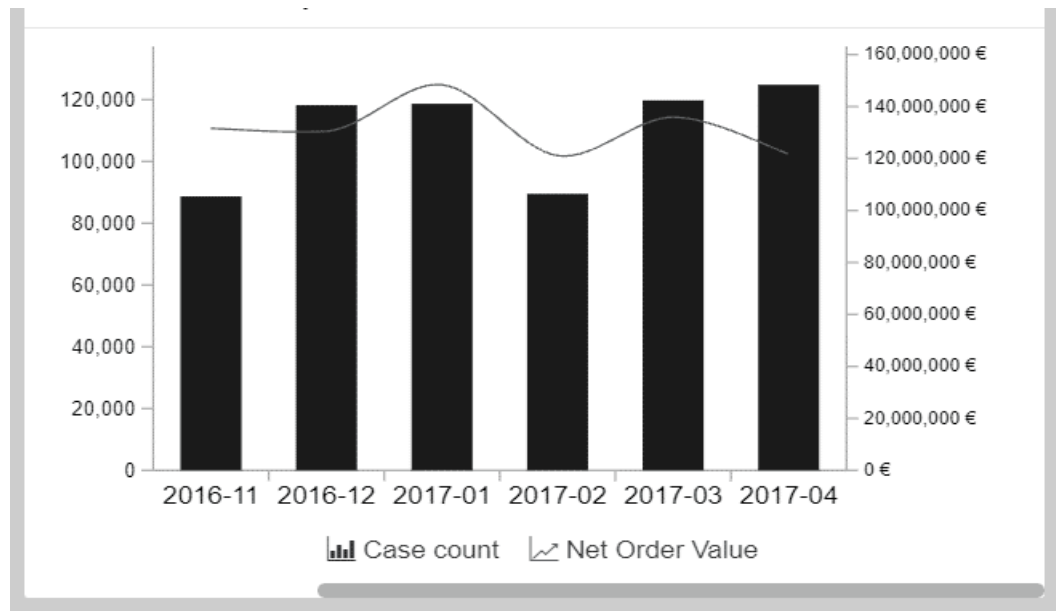


Fig.No.4.4: Development of so items and net profit

4.1.1.6 Use Selection Views:

Selection Views offer a more comprehensive set of options to filter on cases as compared to what you can do in the components in analysis sheets. We can access the six Selection Views from anywhere in the analysis by clicking on the Selection Views button located in the analysis toolbar.

- Attribute selection
- Activity Selection
- Process Flow Selection
- Throughput Time Selection.
- Rework Selection
- Crop Selection

4.1.1.7 Use Case Explorer:

The Case Explorer is useful once we have narrowed down the analysis to a few cases that we want to investigate further. we can view specific case details such as

timestamp of activities, user type (manual or automatic), possibly even user name (depending on your setup), and other useful pieces of info.

- Activities not reflected in the process model
- Order of activities not reflected in the process model

we can use the Conformance checker to complement our efforts in interacting with the analysis visualizations and charts and tables.

4.1.1.8 Use the Conformance Checker

Every organization has an optimal process in mind that they want to achieve. With the conformance checker, you can see how far away the organization is from reaching that goal and investigate common patterns for inefficiency. The Conformance checker evaluates each case against the process model your organization has specified to determine whether it conforms to it or not. More specifically, the Conformance checker is looking at each case's set and sequence of activities to the one defined in the process model.

4.2.1 Build Analyses

As a Celonis Analysis builder, the analyses you create are the interface between the data and the end-users. You can help make digital business processes transparent so that users in operational and leadership roles can make data-driven decisions.

4.2.1.1 Get Ready To Build Analyses

Everyone become familiar with best practices in gathering user requirements as well as in data visualization to make data understandable, easy to work with, and visually appealing. Beyond uncovering process execution gaps and causes of inefficiency, some of our customers choose to use Celonis services such as process automation (using Action Flows) and Apps (using Knowledge Models and Views) to address inefficiencies and maximize their organization's execution capacity..

4.2.1.2 Configure Tables and Charts in Analysis

With Configure Tables and Charts With Dimensions and KPIs anyone can become familiar with three data tables used to configure OLAP Tables, Column and Line Charts, and Pie Charts. You also learned that sometimes you might save time by copying a component (right-click) and then adjust it from there instead of building a new one. You saw how you can even change the type of component from within its Component options.

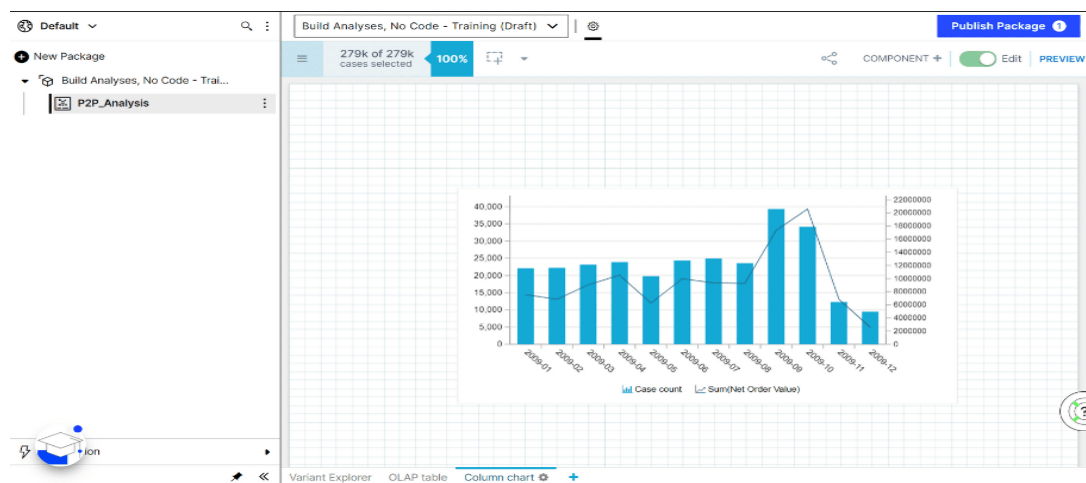


Fig.No.4.5: Configure Tables and Charts in Analysis

4.2.1.3 Configure single KPI, Selection and Design components

Celonis Analysis includes four types of single KPI components. The most common use cases for the single KPI component include the case count and net value. For both, you would use the Number KPI.

Aside from the Number, you might choose other Single KPI components such as Gauge, Fill, and Radial, depending on what you need to display. The Radial, for example, would be appropriate for displaying percentages.

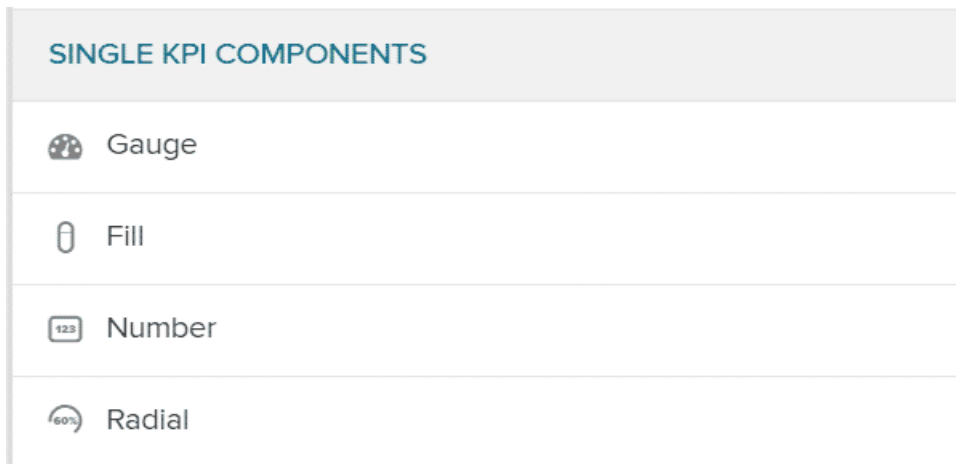


Fig.No.4.6: Single KPI Components

What are Selection Components?

Celonis Analysis includes seven types of visual design components. With these components, you can enhance the user interface of the analysis, guide users' eyes in a certain direction, and enhance their experience interpreting the analysis

What are Design Components?

Celonis Analysis includes seven types of visual design components. With these components, you can enhance the user interface of the analysis, guide users' eyes in a certain direction, and enhance their experience interpreting the analysis.

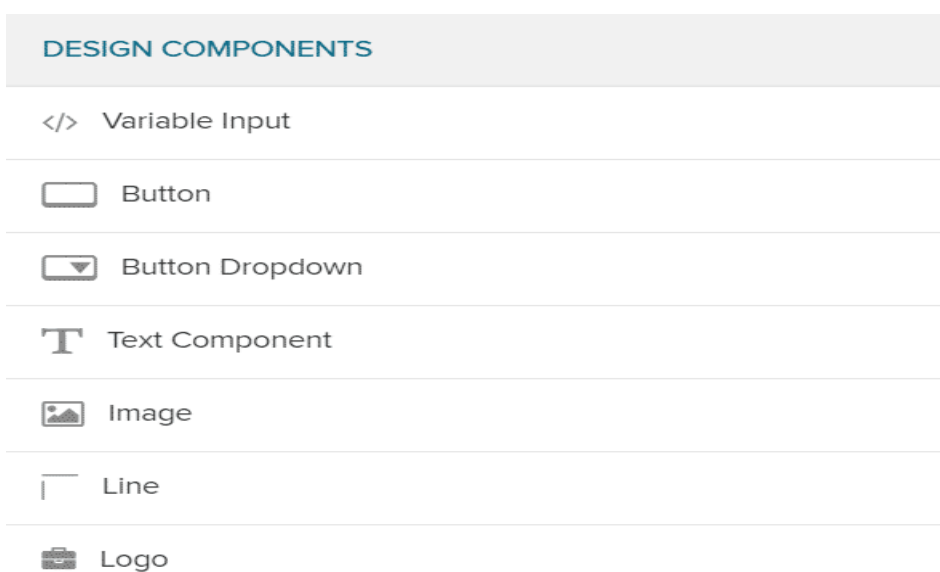


Fig.No.4.7: Design Components

Single KPIs give a quick snapshot of aspects of the process to the user, and dropdowns and date pickers allow users to filter on cases based on dimensions such as vendor or customer name and time frames.

4.2.4 Configure standard process KPIs in the Visual Editor

Standard Process KPIs are generic KPIs that apply across any process you analyze. They are accessible in all Celonis Analyses, regardless of process, in the KPIs selection window.

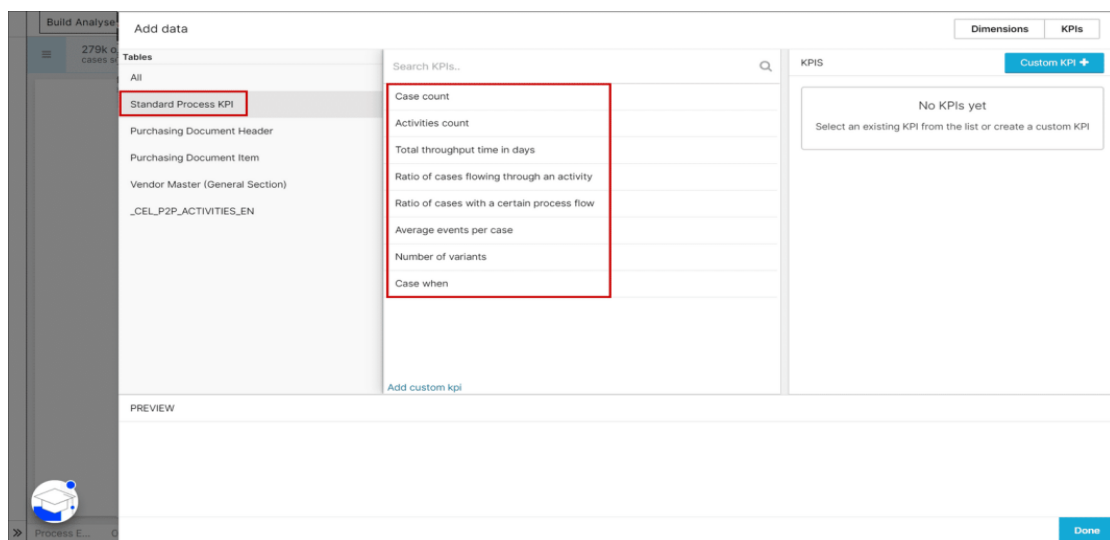


Fig.No.4.8: Standard Process KPI

Let's say you want to enhance users' understanding of the process by making visible the throughput time between two activities. That's where the Standard Process KPI, Total throughput time in days comes in. By default, this KPI calculates the average total throughput time between the first and last activities of the process. But, using the Visual Editor, you can customize it to calculate the throughput time between specific activities in the process.

4.2.5 Configure a Conformance Checker Sheet

Conformance checker complements the analysis user's own efforts in understanding the process and identifying inefficiencies as well as the potential root

causes for such inefficiencies. It brings a lot of value and is easy to configure. you can add multiple Conformance checker sheets to an analysis, where each one compares the cases to a different target process model.

4.3 Case Study: Pizzeria Mamma Mia

We are looking at the digitization journey of the Pizzeria Mamma Mia from the perspective of Giovanni, the owner of the business, and Martin, his Junior Manager. The focus will be on the Order-to-Cash process which is the core process of the Munich based business. The journey starts with the digitization of all process steps, continues with the discovery of inefficiencies and bottlenecks, and closes with recommendations for short-term enhancements as well as for sustaining the businesses success.

The case study is based on the Celonis Execution Management System (Academic version) and a data model provided by the Celonis Academic Alliance . The course will enable you to use Process Mining in a realistic environment in order to understand the functionalities and potentials of the Celonis EMS. You will learn how to build and interpret analyses in Celonis! .

The Pizzeria Mamma Mia case study is built up in a modular structure consisting of different lessons and quizzes as displayed below. You have the freedom to jump directly to a specific lesson or do the full training in the recommended order.

4.2 Enhance The Analysis Building Skills And Learn To Get data into Celonis

4.2.1 Write PQL Queries

In the course of digitization, an increasing number of log data is recorded in IT systems of companies worldwide. This data is precious, as it represents how business processes are running inside a company. Process Mining comprises data-driven methods to discover, enhance and monitor processes based on such data. The heart of Process Mining are the Event Logs.

Those Event Logs are a collection of process events that can be described by the following attributes:

1. Case

2. Activity

3. Timestamp

1. Case :

The case attribute indicates which process instance the event belongs to. A process instance is called a case, usually consisting of multiple events. Let's consider an example: Imagine you are running a restaurant with food delivery. Each order has a specific number, the order number. This number is the unique case ID, and all related activities are assigned to this ID.

2. Activity :

The activity attribute describes the action that is captured by the event. In our food delivery example, these are all the steps an order has passed through, from receiving the order, to cooking the meal, delivery and payment.

The data model always contains an event log, which we call the activity table. The activity table always contains the three columns of the core event log attributes, while additional columns may be present. Within one case, the corresponding rows in the activity table are always sorted based on the timestamp column. Usually, the activity table is not directly present in the source systems and therefore needs to be generated depending on the business process being analyzed.

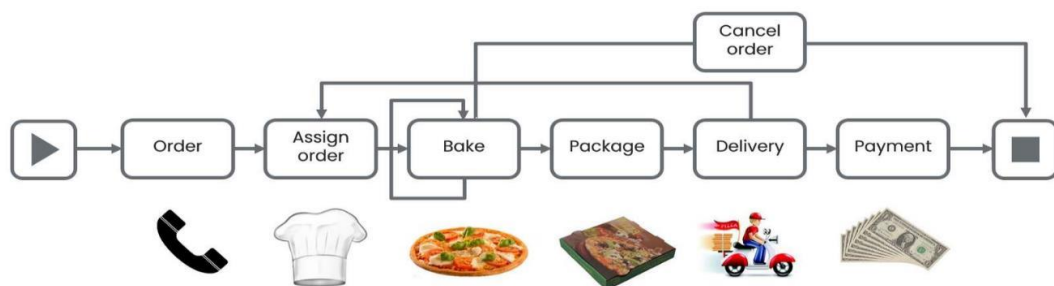


Fig.No.4.9: Food Delivery Activities

3.Timestamp Each activity leaves a digital footprint with a timestamp, indicating precisely when each event took place.

With the help of timestamps, we know precisely in which chronological order the different activities have run off.

Executable Queries in Process Mining

To gain valuable process insights, it is essential for Process Mining users to formalize their process questions as executable queries. For this purpose, we present the Celonis Process Query Language (Celonis PQL), which is:

- a domain-specific language .
- tailored towards a particular process data model and .
- designed for business users.

Celonis Software Architecture

Celonis PQL is an integral component of the Celonis Software Architecture. All Celonis applications use this language to query data from a data model.

Different Components in the software architecture are

- Source System
- Data Model
- metadata
- data
- Celonis PQL engine

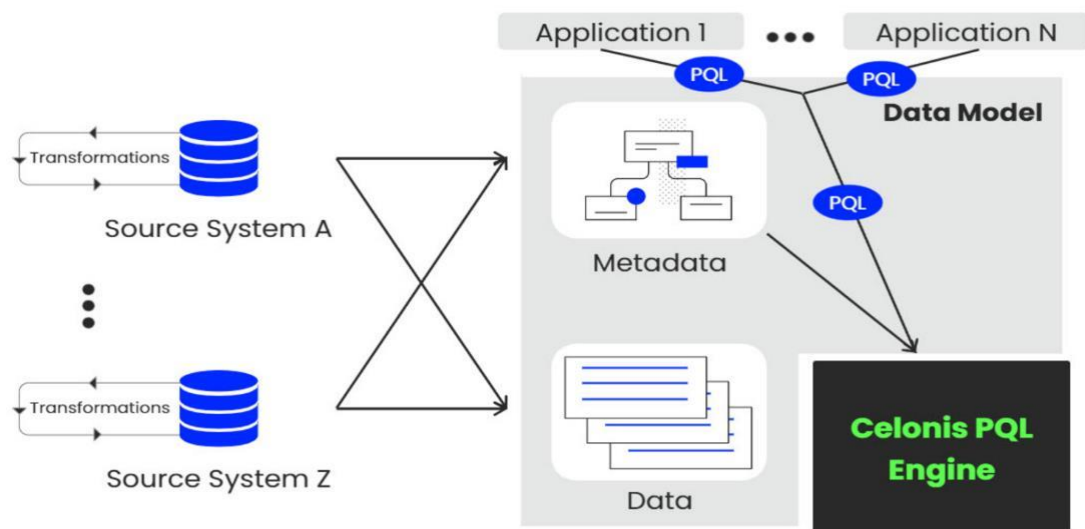


Fig.No.4.10: Software Architecture

SQL vs. PQL

Even though Celonis PQL is inspired by SQL, there are major differences between the two query languages. On a high level, Celonis PQL varies along four key dimensions:

- Language Scope
- Data Manipulation Language
- Data Definition Language

Language Scope :

Celonis PQL does not support all operators that are available in SQL. This is because customer requirements drive the development of the language, and only operators needed for the target use cases are implemented.

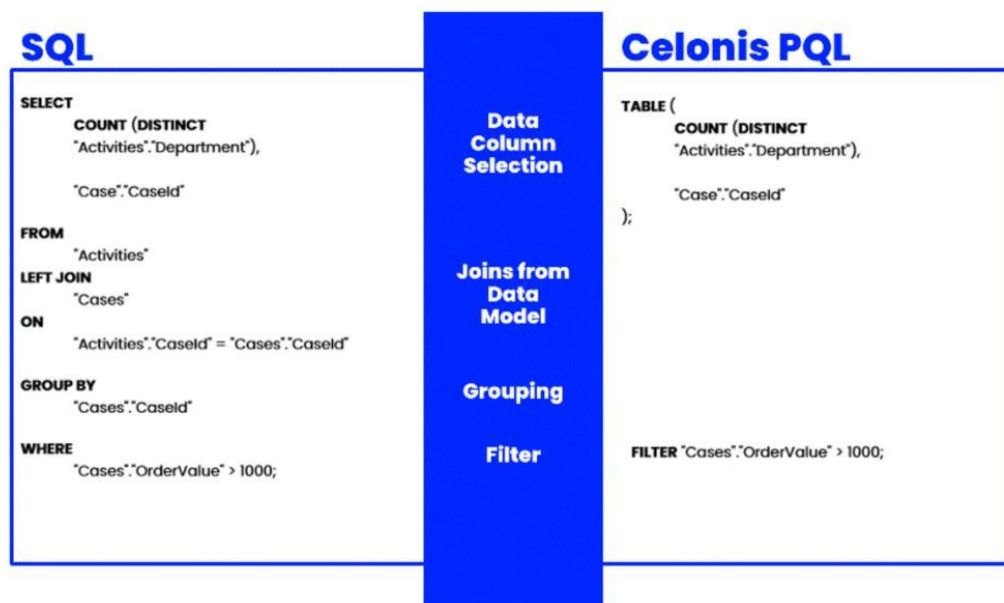


Fig.No.4.11: SQL Vs Celonis PQL

Data Manipulation Language:

Celonis PQL is not supported by a data manipulation language (DML). As all updates in the Process Mining scenario should come from the source systems, there is no need to manipulate and update the data through the query language directly.

Data Definition Language:

Celonis PQL does not provide any data definition language (DDL).

As the data model is created by a visual data model editor and stored internally, there has not been any need for creating and modifying database objects.

Domain Specific:

In contrast to SQL, Celonis PQL is domain-specific and offers a wide range of Process Mining operators not available in SQL. Consequently, Celonis PQL seamlessly integrates the data with the process perspective.

Celonis PQL follows four language features:

1. First, operators usually create and return a single column that is either added to an existing table (e.g., the case or activity table) or to a new, temporary result table. But note, there are also a few operators that create and return one or more tables with multiple columns (e.g., for computing a process graph).
2. Second, the supported data types comprise STRING, INT, FLOAT, and DATE.
3. Third, Boolean values are not directly supported, but can be represented as integers.
4. Fourth, each data type can hold NULL values. Celonis PQL operates as follows:

In aggregations: treats NULL values as non-existing and ignores them.

In row-wise operations: returns NULL if one of its inputs is NULL

CHAPTER-5

REAL TIME EXAMPLES OF PROCESS MINING

Process mining is a technique that involves extracting insights and knowledge from event logs generated by various information systems. It can be applied to a wide range of domains and industries to improve processes and make data-driven decisions. Here are some real-time examples of process mining:

Order Processing in E-Commerce:

Imagine an online retail company that receives a large number of orders daily. Process mining can help analyze the entire order processing cycle, identifying delays, errors, and bottlenecks. This information can be used to optimize the order fulfillment process, leading to improved customer satisfaction and quicker order processing times.

Healthcare Patient Journey:

In a hospital setting, process mining can be applied to analyze the patient journey. It can help identify the average time taken for different medical procedures, uncover inefficiencies in patient flow, and highlight areas where resources are underutilized. Hospitals can then use this information to streamline patient care and resource allocation.

IT Incident Management:

For an IT support team, process mining can provide insights into the incident management process. It can reveal how tickets are escalated, the average time taken to resolve different types of issues, and patterns in incident resolution. This can aid in optimizing the support process and reducing downtime.

Manufacturing Process Optimization:

In manufacturing, process mining can be used to analyze the production line. It can help identify bottlenecks in the production process, track variations in cycle times, and monitor the efficiency of different machines. Manufacturers can then adjust their processes to enhance productivity and reduce waste.

Loan Approval in Banking:

For a bank, process mining can be applied to the loan approval process. By analyzing the steps involved, the time taken for each step, and the decision-making points, the bank can identify areas for improvement. This can lead to faster loan processing and improved customer experience.

Customer Support Interaction Analysis:

Companies can analyze customer support interactions using process mining. It can help uncover common customer issues, track the effectiveness of different support channels, and identify areas where customer queries tend to get stuck. This data can guide improvements in customer service strategies.

Travel Expense Reimbursement:

In organizations, the process of reimbursing travel expenses can be complex. Process mining can be applied to understand the end-to-end expense reimbursement process, pinpoint delays in approvals, and detect discrepancies. This can lead to a smoother reimbursement process for employees.

These examples illustrate how process mining can be applied across various industries and domains to improve operational efficiency, identify opportunities for optimization, and enhance overall process performance.

CHAPTER-6

LEARNING OUTCOMES

After you complete this training, you should be able to:

1. Understand what process mining is and the basics of how it works.
2. Understanding how process mining helps in Business world.
3. Summarize what an event log is and why we need it for processing.
4. Identify business use cases for process mining.
5. Learn how to find training courses to get started.
6. Understanding how to discover, analyses, and improve business process using data driven techniques.
7. You will learn to extract insights from event logs, identify bottlenecks, inefficiencies, and opportunities for optimization.
8. You will gain skills in using process mining tools and interpreting the results to enhance organizational efficiency and effectiveness.
9. Comparing Real and To-Be Worlds: Conformance Checking and Root Cause Detection.
10. Understanding patterns and taking preventative measures: Comparative and predictive process mining

CONCLUSION

Process mining is a powerful and versatile technique that enables organizations to gain valuable insights into their operations by analyzing event logs and visualizing processes. It provides a data-driven approach to understanding how processes are actually executed, revealing bottlenecks, inefficiencies, variations, and opportunities for improvement.

By using process mining, organizations can make informed decisions to streamline their operations, enhance customer experiences, reduce costs, and optimize resource allocation. It bridges the gap between theoretical process models and real-world execution, allowing businesses to achieve greater efficiency and effectiveness in their processes. As technology continues to advance, process mining will likely play an increasingly important role in helping organizations stay competitive and responsive in an ever-evolving business landscape.

References

- <https://academy.celonis.com/learn/learning-path/process-mining-fundamentals-for-students>
- <https://academy.celonis.com/learn/dashboard>
- <https://apromore.com/process-mining-101/>

Internship Certificate





