Process Mining Virtual Internship

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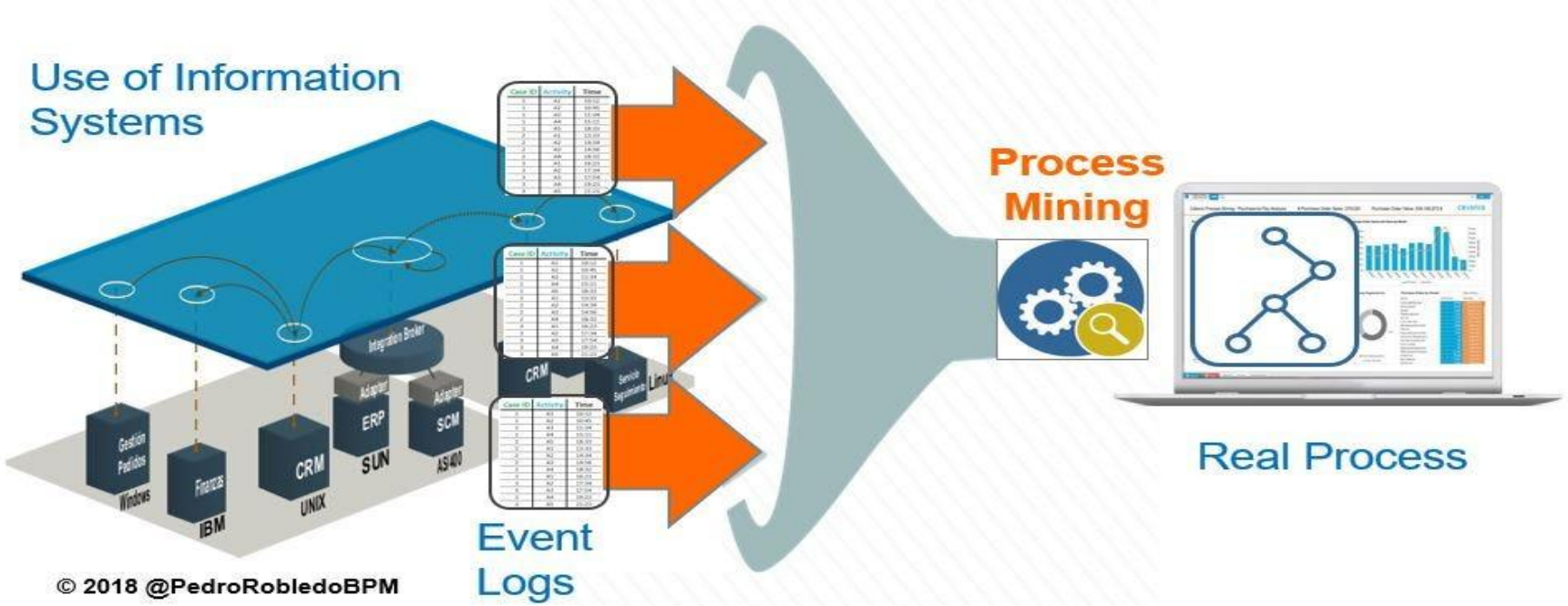
Course Objective

- **Learn Process Mining Techniques : One of the primary objective is to learn the fundamentals of process mining. This includes understanding the various techniques and tools used in process mining, such as data extraction, data preprocessing, process discovery, conformance check-in, and process enhancement.**

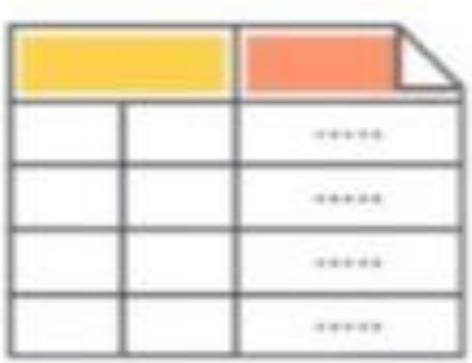
- **Gain Practical Experience, Apply Academic Knowledge, Improve Data Analysis Skills, Enhance Problem-Solving Skills, Understand Business Processes, Collaborate and Communicate Effectively, Contribute to Process Improvement, Networking and Career Development.**

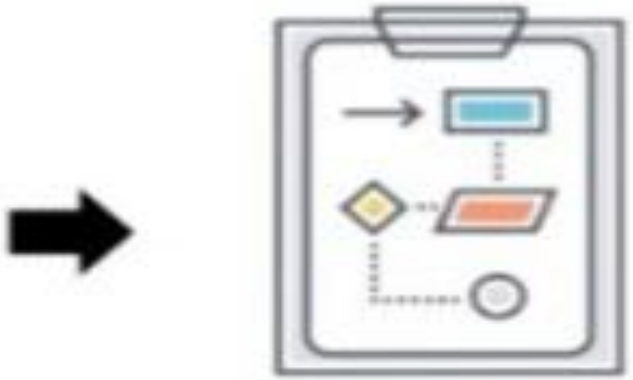
Introduction

- Process mining is a data-driven technique used to discover, monitor, and improve real business processes. It provides a systematic approach to understanding how processes actually operate within an organization by analyzing event logs, which are detailed records of activities and transactions.



Introduction





Process Data
(event logs)

Process Maps

Process Insights

Business have lots of processes…..

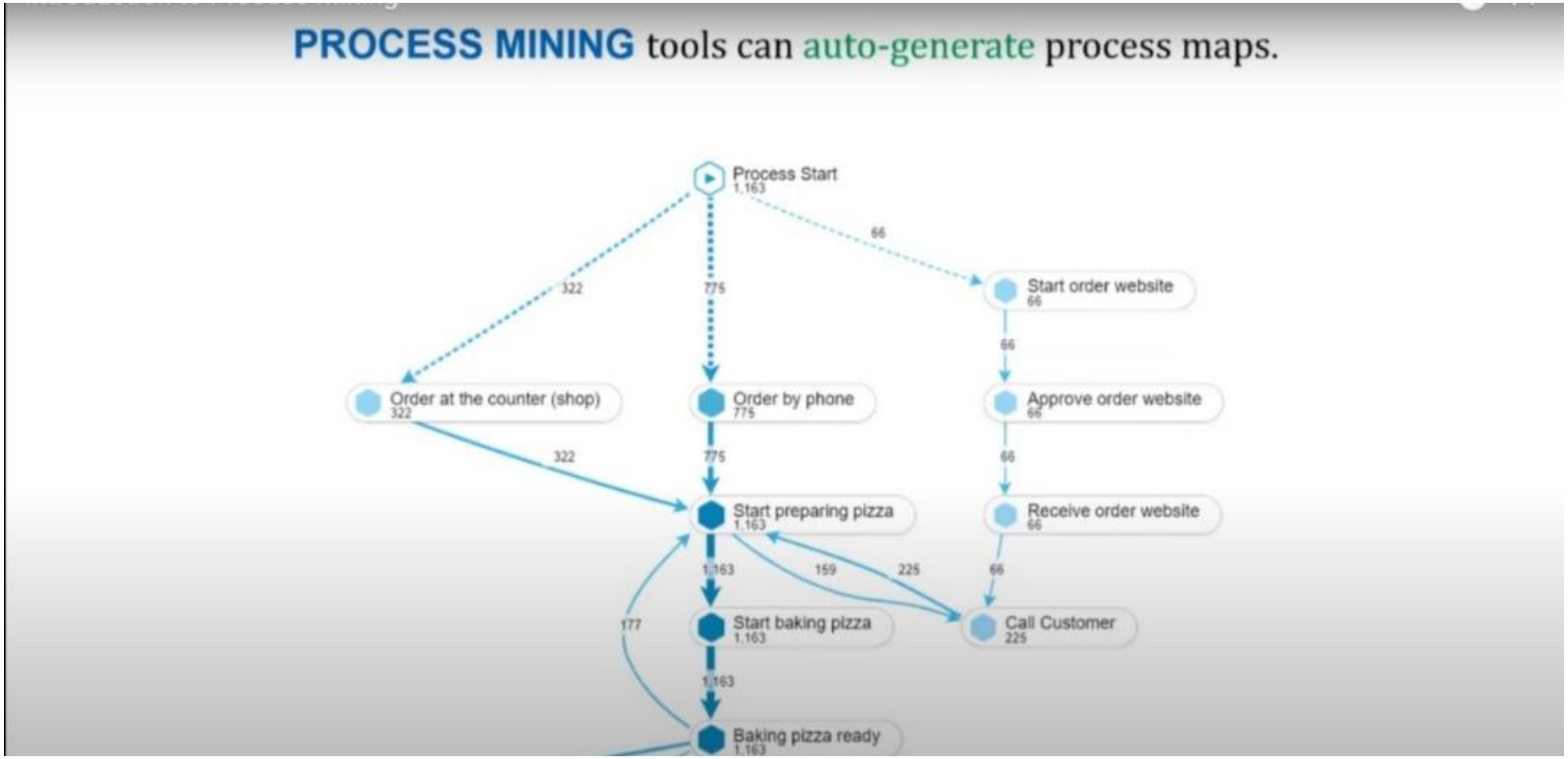
- In business we have **Process** and **Project**.
- Process are ongoing
- Projects are temporary

- **Processes in business are:**
  - Shipping orders
  - Resolving customer complaints
  - Hiring employees
  - Repairing equipment
  - Paying suppliers
  - Cleaning facilities
  - Handling returns
  - …
  - …

Process Mapping

- Process mapping, also known as process diagramming or flowcharting, is a visual representation technique used to document, analyze, and communicate business processes.
- It involves creating diagrams that illustrate the sequential flow of activities, decisions, and interactions within a process.
- Helps us understand and improve those processes.

Process Map for Shipping items

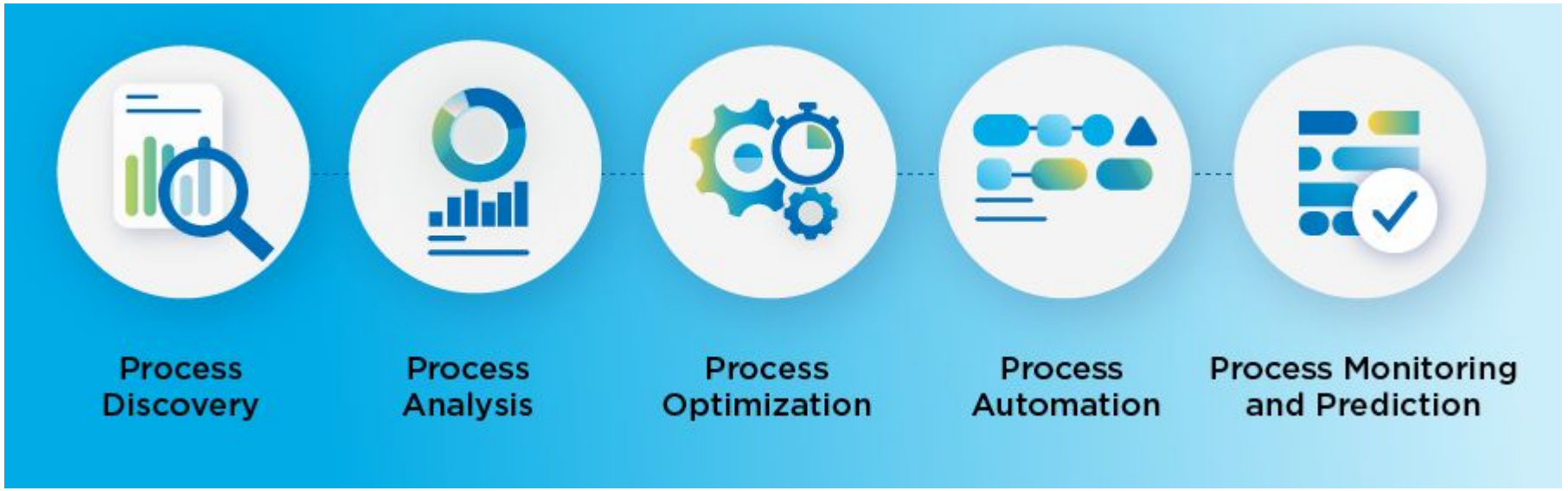


Technology

- **Process Discovery**: This is a fundamental component of process mining where algorithms are used to automatically construct process models from event log data. Popular techniques for process discovery include alpha algorithms, heuristic-based algorithms, and Petri net-based approaches.
- **Process monitoring**: It is the continuous and real-time observation, analysis, and measurement of a business process as it unfolds. It involves tracking various aspects of a process to ensure that it is running smoothly, efficiently, and in accordance with predefined standards and objectives. Process monitoring is essential for maintaining control over operations, detecting anomalies or deviations, and making timely adjustments when necessary.
- **Process optimization**: It is the systematic improvement of business processes to make them more efficient, effective, and aligned with organizational goals. It involves analyzing, identifying bottlenecks, and making changes to processes with the aim of achieving better performance, reduced costs, increased quality, and improved overall outcomes.

5 Process Mining Steps

- These are the 5 valuable steps to increase productivity and efficiency of your process.



Applications

- Business Process Improvement
- Process Discovery
- Conformance Checking
- Process Compliance
- Fraud Detection
- Supply Chain Management
- Customer Journey Analysis
- IT Service Management
- Healthcare Process Optimization
- Manufacturing Process Optimization
- Audit and Compliance Auditing
- Energy and Utilities
- Logistics and Transportation
- Telecommunications

Modules

- Discovery Module
- Conformance Module
- Extension Module

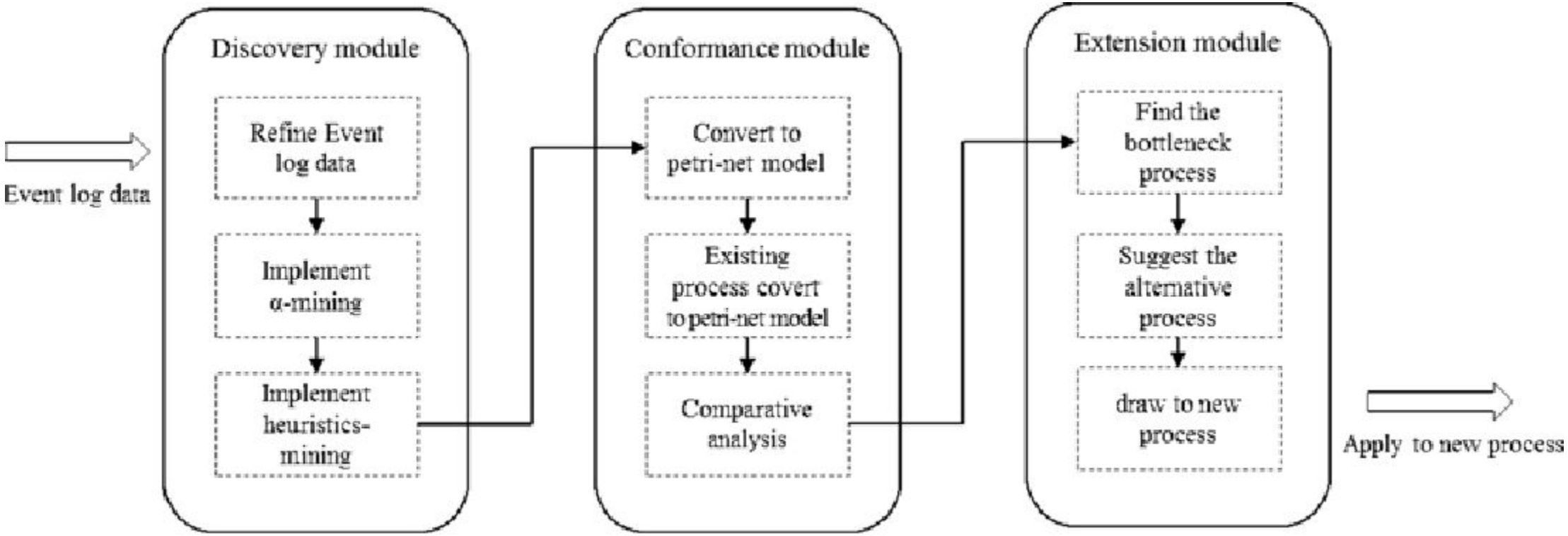


Fig. 1 Process mining module

Tools for Process Mining

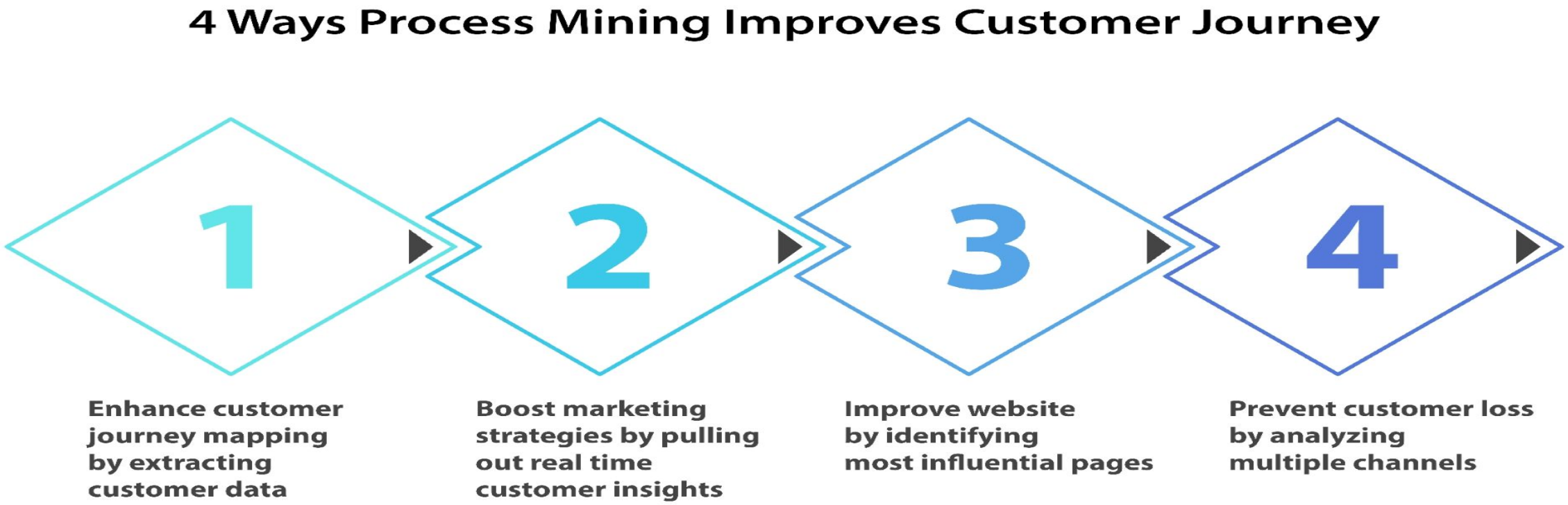
- The **Celonis** process mining platform is called the Execution Management System (EMS). In addition to traditional process mining functionality, the EMS offers a cloud-based solution for real-time data extraction and analysis, as well as task mining functionality. Celonis EMS also includes process modeling and process simulation functionality.

- Top Celonis features:
  - Wide adoption
  - Integrations
  - Customization
  - Broad user community

RealTime Applications

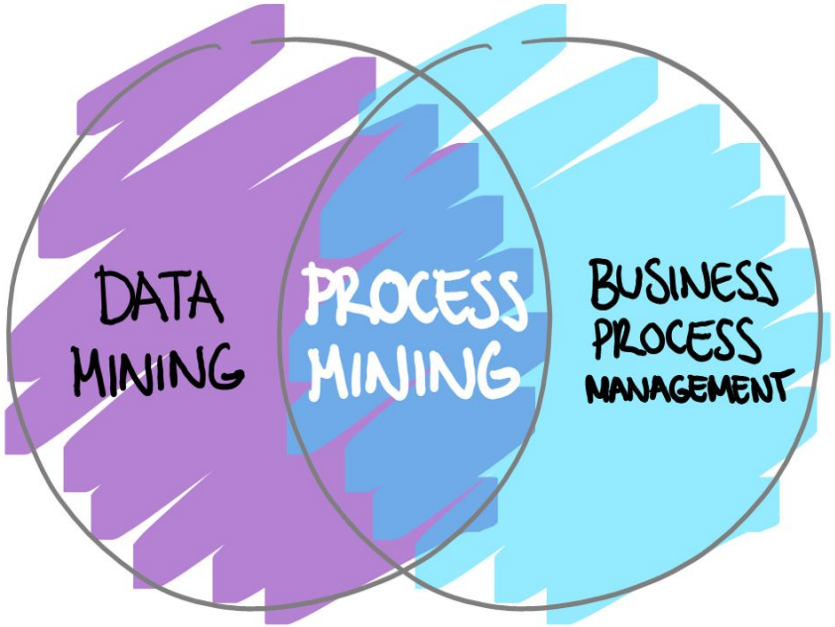
- **Performance Monitoring** : Organizations can use real-time process mining to monitor key performance indicators (KPIs) as events occur. This includes tracking cycle times, throughput, and resource utilization, enabling prompt interventions to optimize performance.
- **Anomaly Detection** : Real-time process mining can detect unusual patterns or anomalies in process data, such as unexpected deviations from standard procedures or compliance violations. This is valuable for identifying potential fraud or security breaches.
- **Healthcare Process Management** : Real-time process mining can be applied in healthcare settings to monitor patient care processes, manage patient flow, and ensure timely interventions based on critical events.
- **Transportation and Fleet Management** : Real-time monitoring of transportation and fleet processes enables organizations to track vehicle locations, optimize routes, and respond to unexpected events, such as traffic delays or vehicle breakdowns.

Process mining in Customer Journey Analysis



Learning Outcomes

- Understanding of Process Mining Concepts
- Practical Experience
- Data Analysis Skills
- Process Discovery
- Conformance Checking
- Critical Thinking
- Performance Analysis
- Career Development



Git Hub Dashboard

Any Queries?

Thank You!!!