Process Mining

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Seminar on Data mining tools and CAQ (S1)

Vysoká škola manažmentu v Trenčíne

International Workshop on Knowledge Management
IWKM‘2017

Trenčín 12 - 13. 10. 2017

PROCESS REVOLUTION STARTS
IN BIG DATA UNDERGROUND

BIG DATA
BIG DATA

Eventlog

BIZZ
DISCO CLUB
& ami
SABADO
16 Outubro
monarquia-club.com
Warm up by
EDDIE
FERREIROS

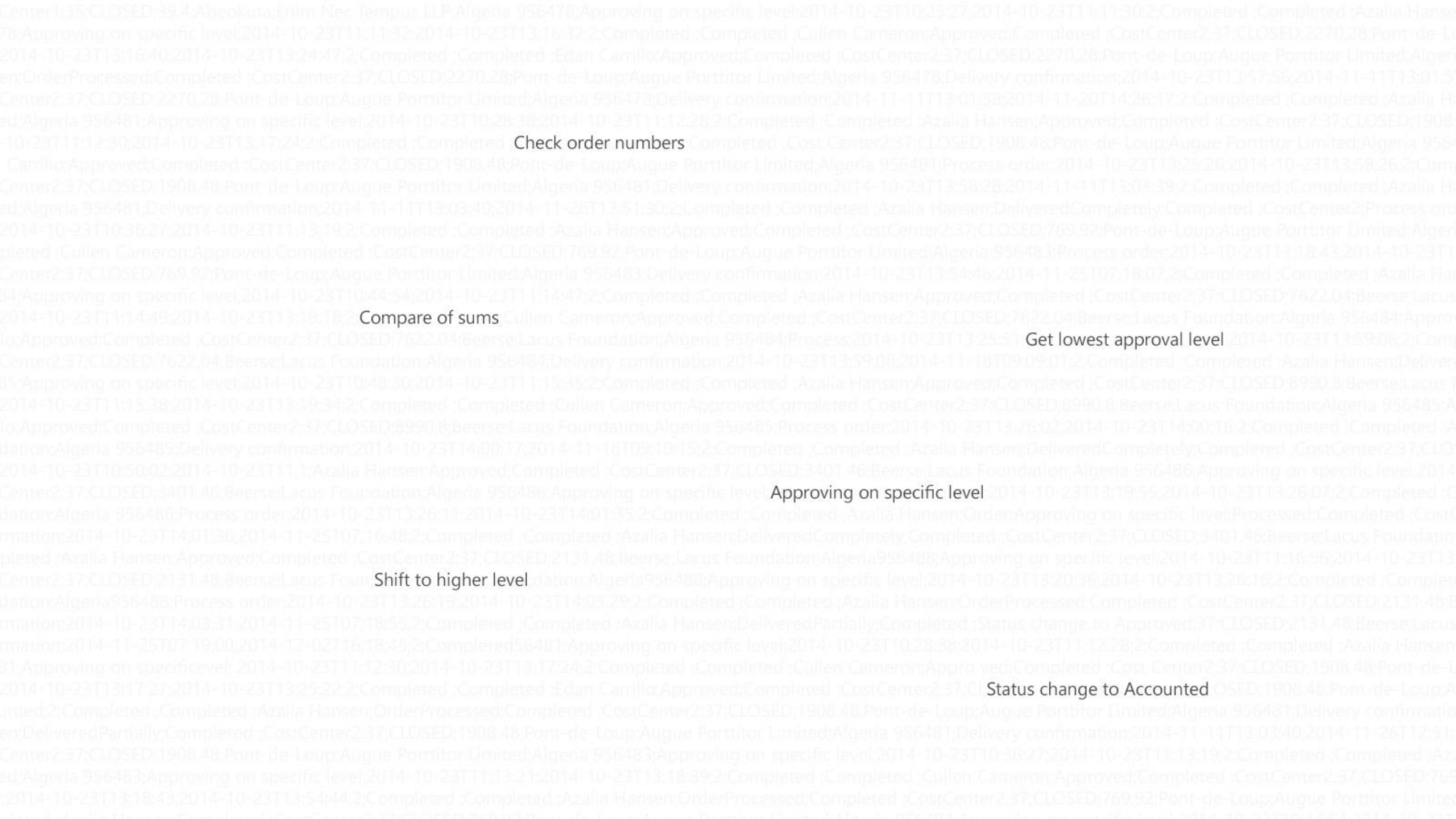
Data entries

(enterprise database data in cloud or on premises)

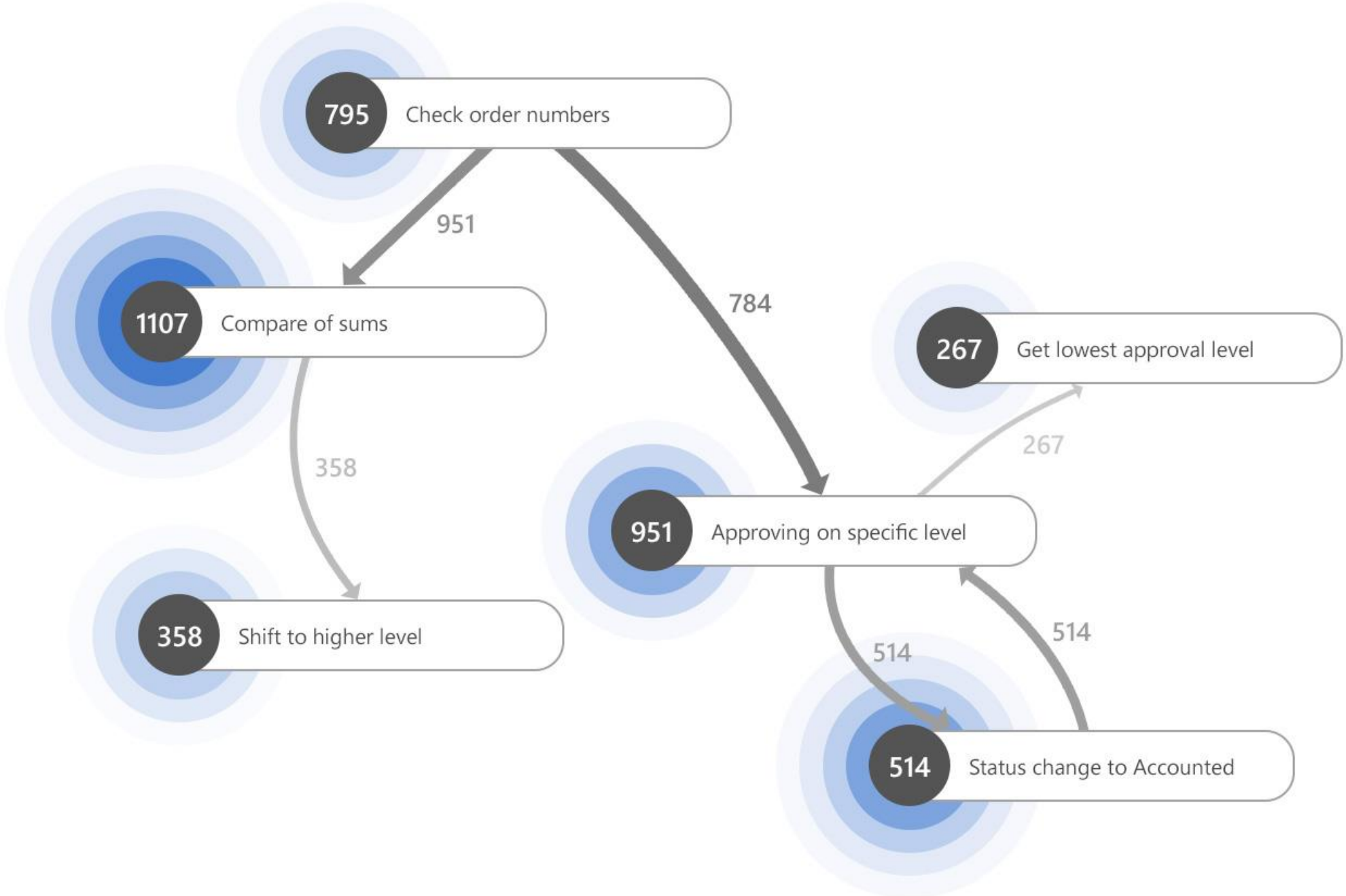
System logs

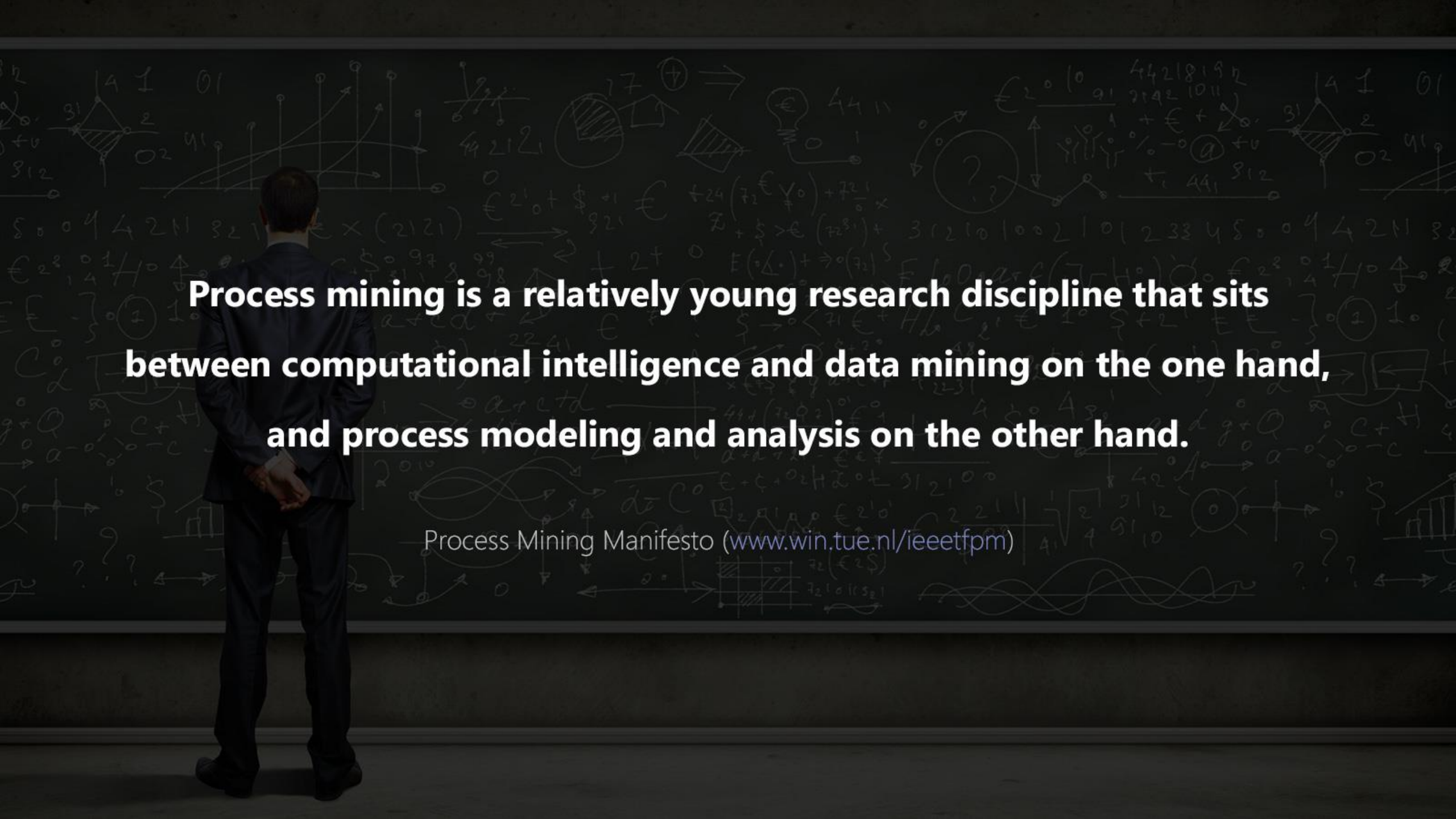
(in form of documents, click streams, XML data)

Check order numbers
Compare of sums
Get lowest approval level
Approving on specific level
Shift to higher level
Status change to Accounted


Check order numbers
Compare of sums
Get lowest approval level
Approving on specific level
Shift to higher level
Status change to Accounted

795
Check order numbers
1107
Compare of sums
267
Get lowest approval level
951
Approving on specific level
358
Shift to higher level
514
Status change to Accounted


795
Check order numbers
951
784
1107
Compare of sums
267
Get lowest approval level
267
358
951
Approving on specific level
514
514
358
Shift to higher level
514
Status change to Accounted



Process mining is a relatively young research discipline that sits between computational intelligence and data mining on the one hand, and process modeling and analysis on the other hand.

Process Mining Manifesto (www.win.tue.nl/ieeetfpm)

PROCESS REVOLUTION

subjective

adjective | sub·jec·tive | \(ˌ)səb-ˈjek-tiv\

relating to the way a person experiences things in his or her own mind

limited

adjective | lim·it·ed | \ˈli-mə-təd\

confined within limits : restricted <limited success>

exception

noun | ex·cep·tion | \ik-ˈsep-shən\

a case where a rule does not apply

visibility

noun | vis·i·bil·i·ty | \ˌvi-zə-ˈbi-lə-tē\

capability of being readily noticed

minit

VSM (City University)

Personalized University

Analytical Results

- Comparing A & B grade students to E graders
- 7 activities revealed in their flow
- Rising activity by 50% and redistributing in time

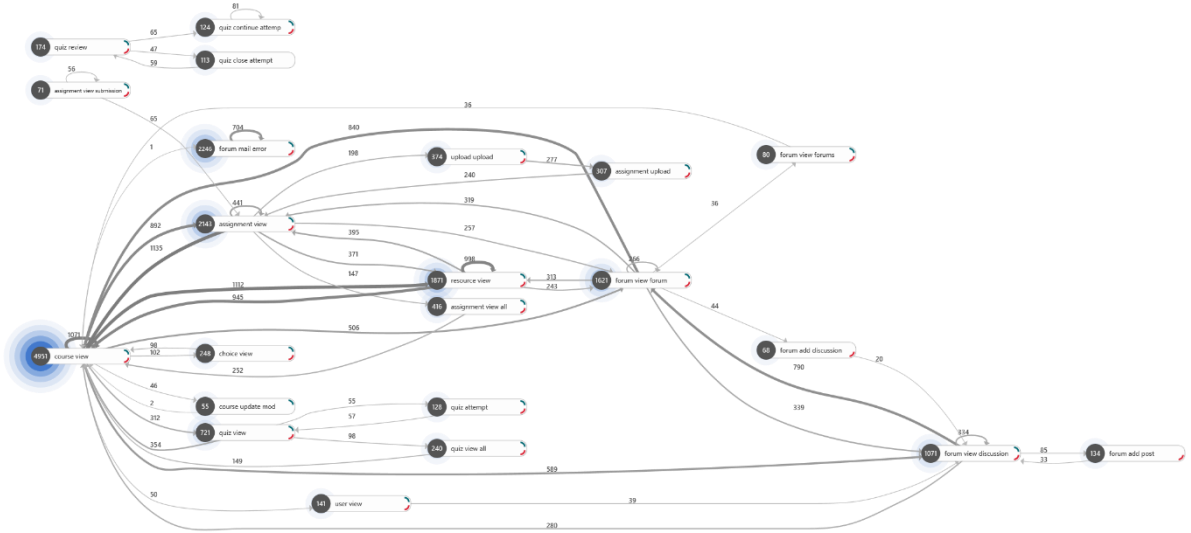
Outcome

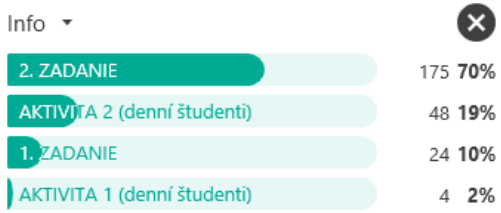
- Easier student onboarding
- Best practice guide

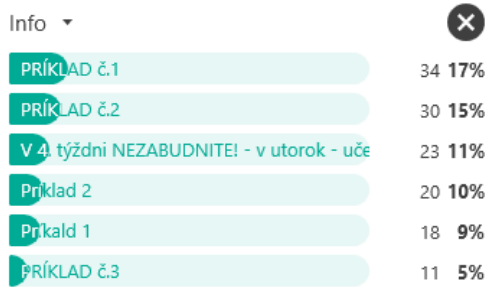
Phase 1 – Overview

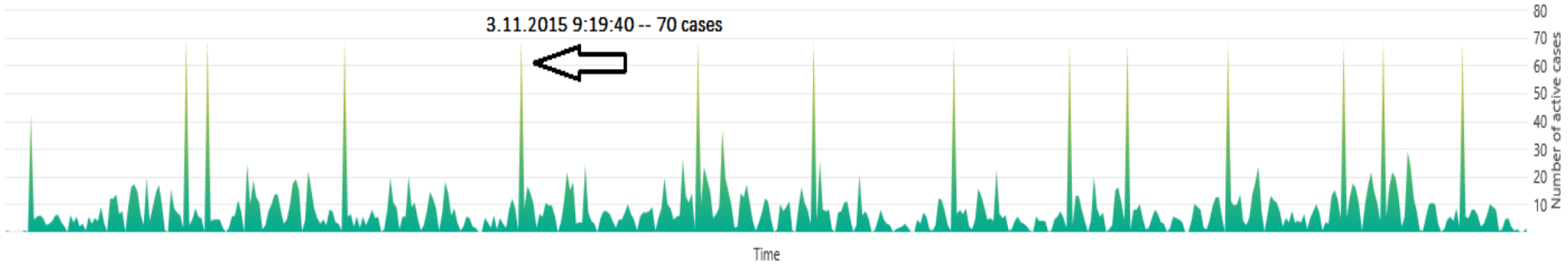
Low height flight over moodle data

Results

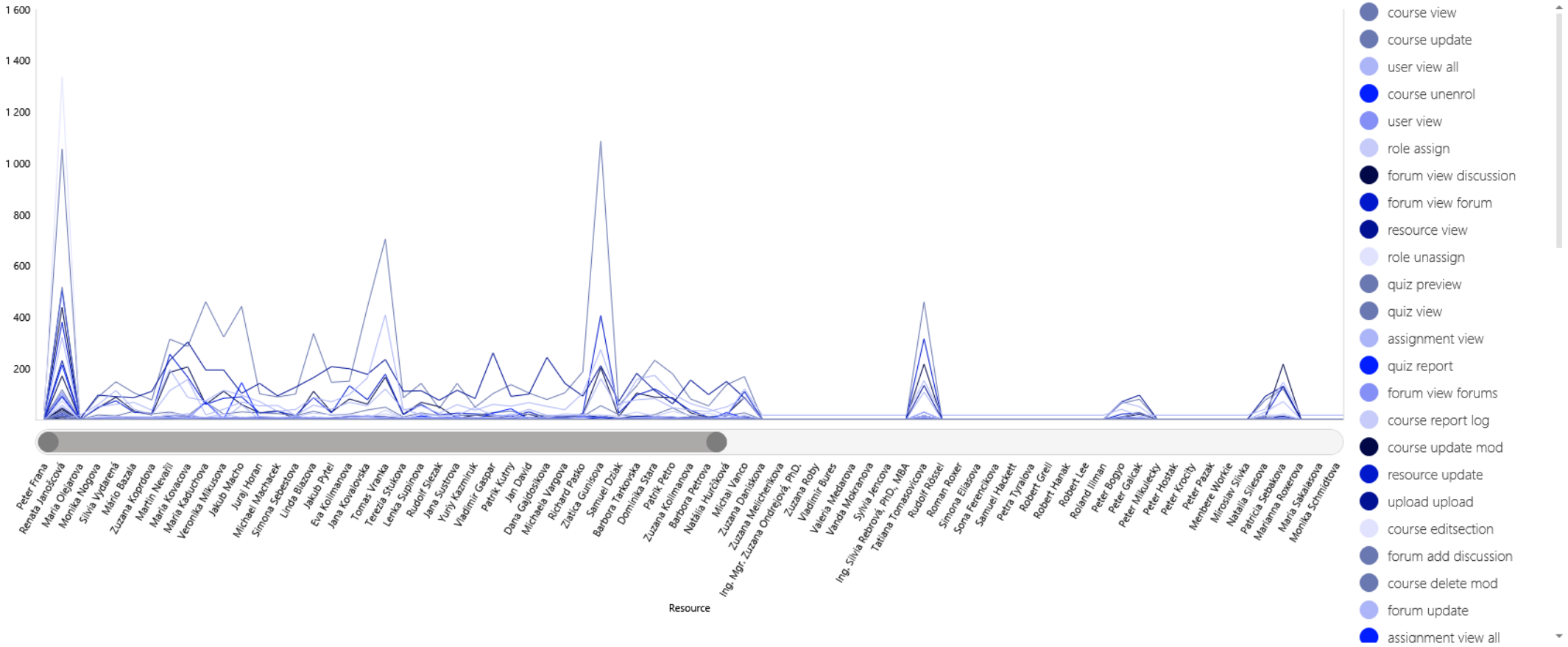



Info
2. ZADANIE 175 70%
AKTIVITA 2 (denní študenti) 48 19%
1. ZADANIE 24 10%
AKTIVITA 1 (denní študenti) 4 2%


Info
PRÍKLAD č.1 34 17%
PRÍKLAD č.2 30 15%
V 4. týždni NEZABUDNITE! - v utorok - uče 23 11%
Príklad 2 20 10%
Príkald 1 18 9%
PRÍKLAD č.3 11 5%


3.11.2015 9:19:40 -- 70 cases
Number of active cases
Time

Results


1 600
1 400
1 200
1 000
800
600
400
200
Peter Frana
Renata Janošcová
Maria Olejarova
Monika Nogova
Silvia Vydarená
Mário Bazala
Zuzana Koprdova
Martin Nevařil
Maria Kovacova
Maria Kaduchova
Veronika Mikusova
Jakub Macho
Juraj Horan
Michael Machacek
Simona Sebestova
Linda Blazova
Jakub Pytel
Eva Kolmanova
Jana Kovalovska
Tomas Vranka
Terezia Stukova
Lenka Supinova
Rudolf Slezak
Jana Sustrova
Yuriy Kazmiruk
Vladimir Gaspar
Patrik Kutny
Jan David
Dana Gajdosikova
Michaela Vargova
Richard Pasko
Zlatica Gunisova
Samuel Dziak
Barbora Tarkovska
Dominika Stara
Patrik Petro
Zuzana Kolmanova
Barbora Petrova
Natália Hurčíková
Michal Vanco
Zuzana Danisková
Zuzana Melicherikova
Ing. Mgr. Zuzana Ondrejová, PhD.
Zuzana Roby
Vladimir Bures
Valeria Medarova
Vanda Mokranova
Sylvia Jencova
Ing. Silvia Rebrová, PhD., MBA
Tatiana Tomasovicova
Rudolf Rössel
Roman Roxer
Simona Eliasova
Sona Ferencikova
Samuel Hackett
Petra Tyralova
Robert Greil
Robert Hanak
Robert Lee
Roland Illiman
Peter Bogyo
Peter Gaicak
Peter Mikulecky
Peter Hostak
Peter Krocity
Peter Pazak
Menbere Workie
Miroslav Slivka
Natália Sliesova
Patrícia Sebaková
Marianna Roxerova
Mária Sakalasova
Monika Schmidtova
Resource
course view
course update
user view all
course unenrol
user view
role assign
forum view discussion
forum view forum
resource view
role unassign
quiz preview
quiz view
assignment view
quiz report
forum view forums
course report log
course update mod
resource update
upload upload
course editsection
forum add discussion
course delete mod
forum update
assignment view all

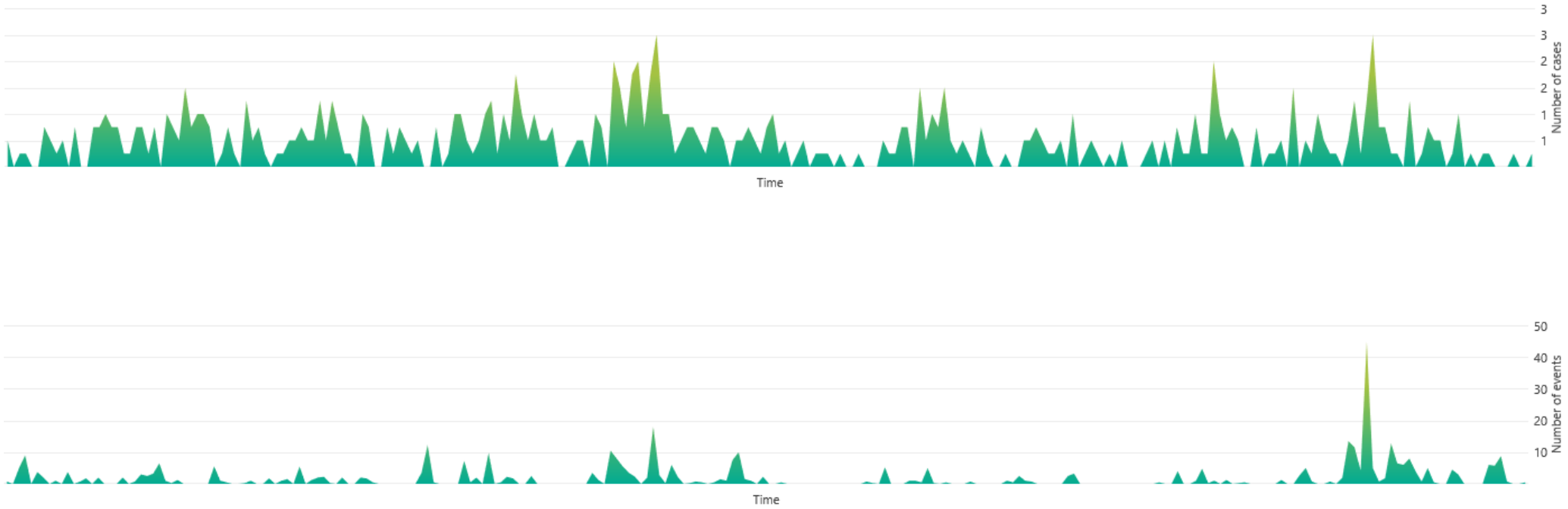
Questions

- Can we focus on a specific study field?
- Are we able to enrich the data with final grades and thus distinguish students?
- Are we able to distinguish the process variants and habits of best performers?
- And what about comparisons to low performers?
- Would it be possible to learn from the best and guide newcomers to achieve better final grades?

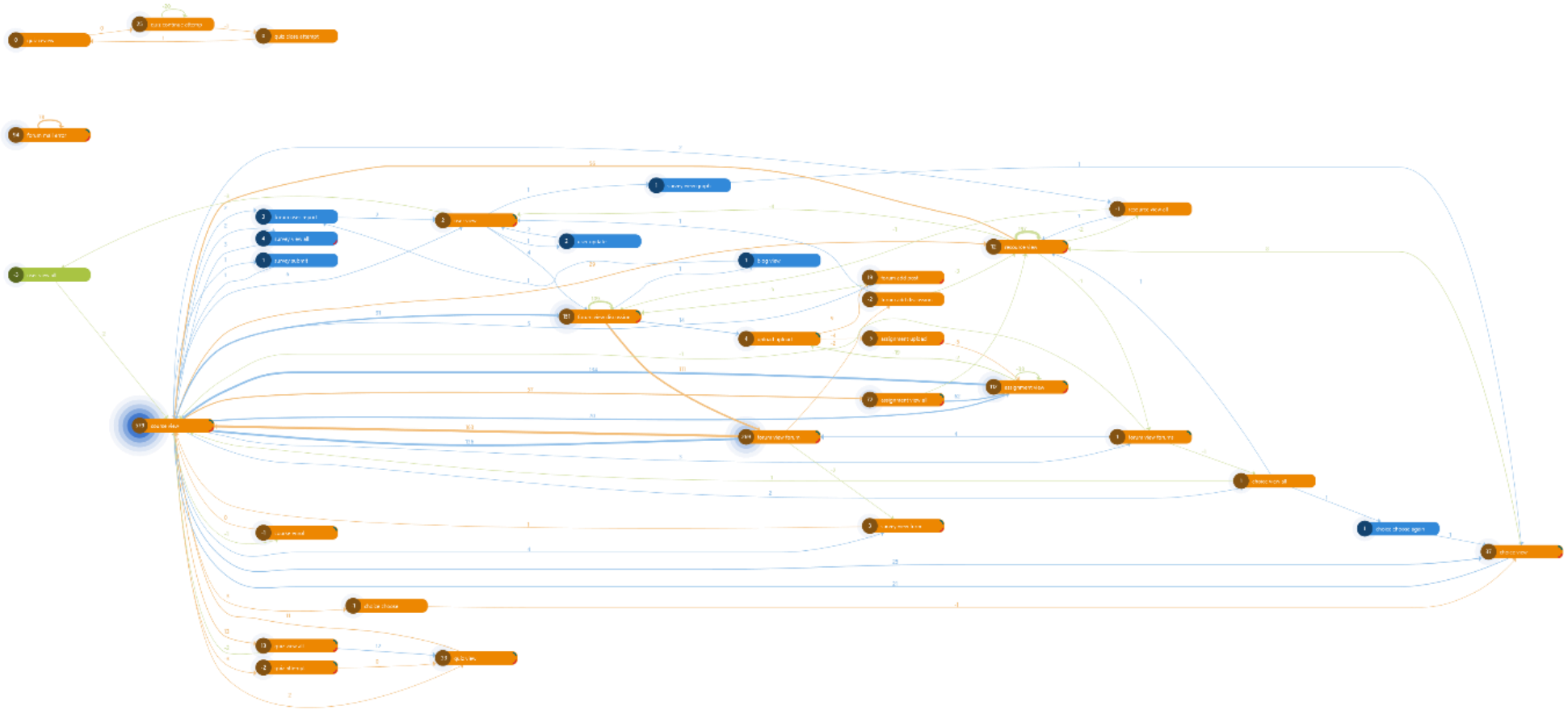
Phase 2 – Deep Insight

Drill-down into online study field based on focused questions

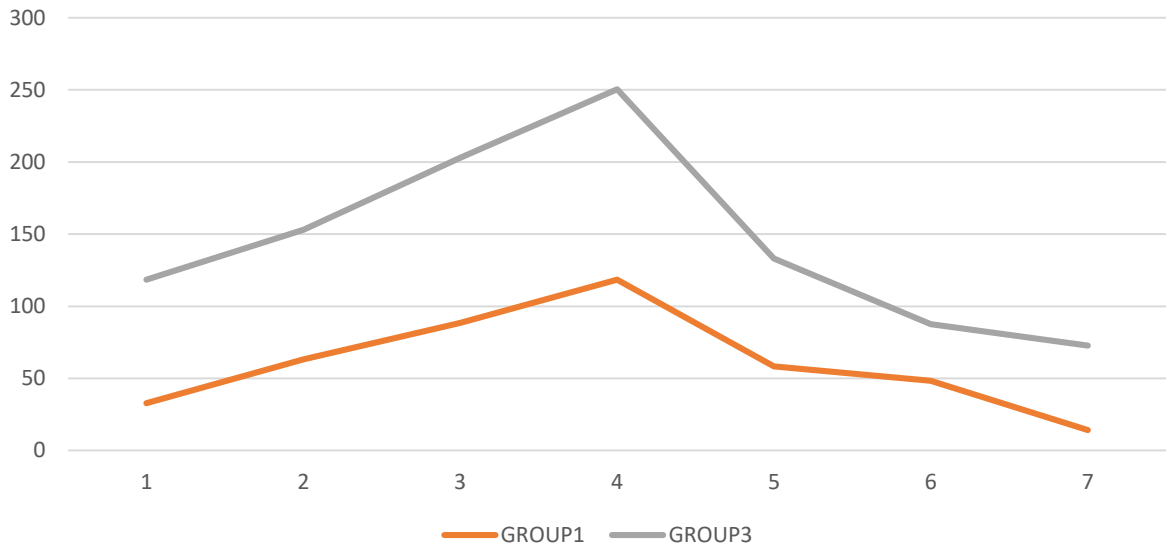
Activity comparison

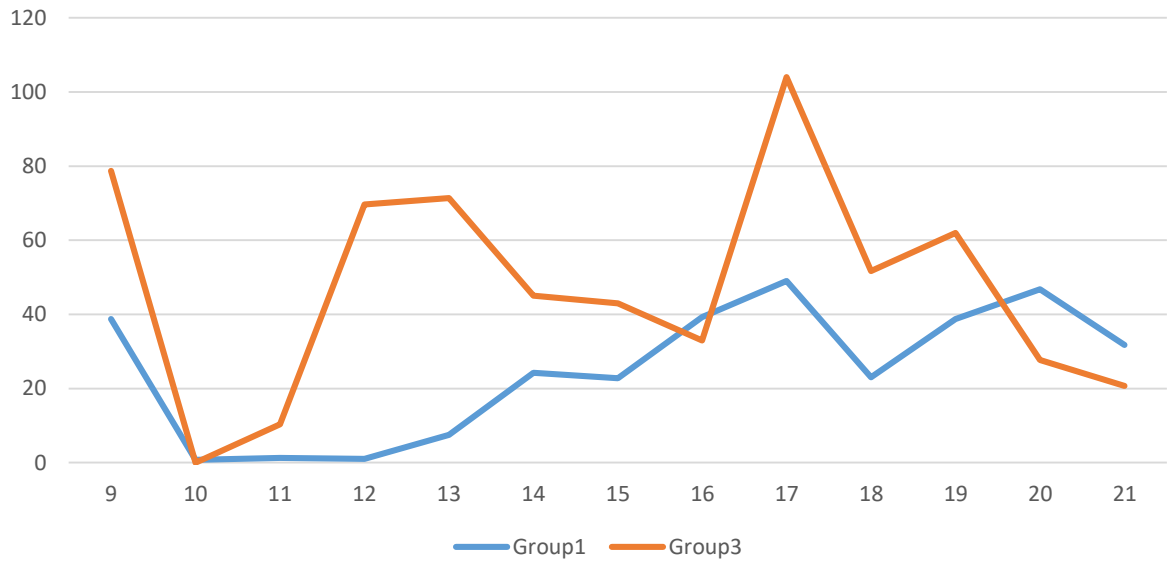


Process comparison



Activity distribution comparison





THANK YOU

Michal Rosik

PRODUCT VISIONARY

As Product Visionary for minit, Michal defines the Research & Development direction for this process mining solution, develops close ties to the academic community in this area and evangelises process mining benefits to enterprises worldwide. Michal previously lead Microsoft Consulting department in Siemens and was involved in several large enterprise projects as a consultant and project manager. In his free time, he is a passionate trail runner.

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