Research of methods of visualization of object processes

You will be presented with two different visualizations (**Object-Centric Petri Net and Object-Centric Sankey Diagram**). Using each of the visualizations, complete a series of tasks and answer the questions. After completing the tasks, we will ask you to evaluate your subjective perception of the convenience of each approach.

🛍️ Data description Visualization data

contains information about online purchases in an online store. There are three types of objects involved in this process:

Item (Product) – the unit that the user orders.
Order - may contain one or more items.
Package – may include items from one or more orders.

The process includes such actions as: *place order* (order creation), *pick item* (product selection), *reorder item* (product replacement), *payment* (order payment), *send package* (parcel dispatch), etc.

🔍 Tasks

Important: don't spend too much time on one task — if you can't find the answer, move on. Participation in the survey will take no more than 10 minutes.

Please indicate your level of education

- Undergraduate Student
- Master's Degree student
- Postgraduate student
- Bachelor's Degree graduate
- Graduate of the Master's degree
- Graduate student
- Candidate of Sciences
- Doctor of Sciences

Indicate the degree of your familiarity with the field under study (process mining)

- Not familiar at all
- I've heard something - I know the basic definition, without delving into the topic.
- I'm learning the basics – I've been reading(a) articles, watched(a) introductory materials, but did not apply(a) in practice
- I have practical experience – I have worked(a) with tools (Celonis, Disco, ProM, etc.) or used(a) in projects
- I conduct research – I study methods in depth, publish papers, or develop new approaches.
- An expert in the field – I am professionally engaged in process mining, implement solutions, and advise.

Object-Centric Petri Net

To view the visualization, open the image at the link.

Objects of the "item" type are marked in red
Objects of the "order" type are indicated in green
Objects of the "package" type are indicated in purple

Which event has the least number of "order" type objects involved?

- place order
- item out of stock
- reorder item
- confirm order
- payment reminder
- payment
- create package
- failed delivery

What types of objects are involved in the "confirm order" event?

- item
- order
- package

How many times have "order" type objects been involved in the "payment reminder" event?

_____

How difficult was it for you to navigate the visualization to find answers?

	1	2	3	4	5	
Very easy	○	○	○	○	○	Very difficult

Estimate the time spent on the answers

- Less than 5 minutes
- Up to 10 minutes
- Up to 15 minutes
- More than 15 minutes

Object-Centric Sankey Diagram

To view the visualization, follow the link and click the "start" button

Objects of the "item" type are indicated in pink
Objects of the "order" type are indicated in yellow
Objects of the "package" type are indicated in gray

Which event has the least number of "order" type objects involved?

- place order
- item out of stock
- reorder item
- confirm order
- payment reminder
- payment
- create package
- failed delivery

What types of objects are involved in the "confirm order" event?

- item
- order
- package

How many times have "order" type objects been involved in the "payment reminder" event?

_____

How many "order" type objects were involved in the "payment reminder" event exactly 4 times?

_____

Specify the order number (order) that contains the item with the number 880437

_____

Have you received a payment reminder (order) with the number 990188?

- Yes
- No
- It is impossible to answer

How difficult was it for you to navigate the visualization to find answers?

	1	2	3	4	5	
Very easy	○	○	○	○	○	Very difficult

Estimate the time spent on the answers

- Less than 5 minutes
- Up to 10 minutes
- Up to 15 minutes
- More than 15 minutes

Which visualization was more convenient for you to use to find answers to questions?

- Object-Centric Petri Net
- Object-Centric Sankey Diagram
- Both options

Which visualization, in your opinion, helps you better understand the behavior of objects in the process?

- Object-Centric Petri Net
- Object-Centric Sankey Diagram
- Both options

I don't mind that my answers will be used in the research. I understand that the data will be processed anonymously and only for scientific purposes.

- I give my consent

Thank you for participating!
Your answers will help us conduct research on visualization of object processes and improve business process analysis tools.
If you have any comments or comments, you can leave them below.
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