

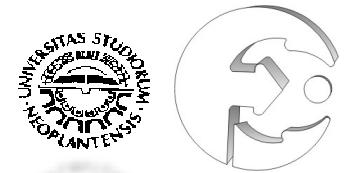


Sistemi poslovne inteligencije

7. nedelja

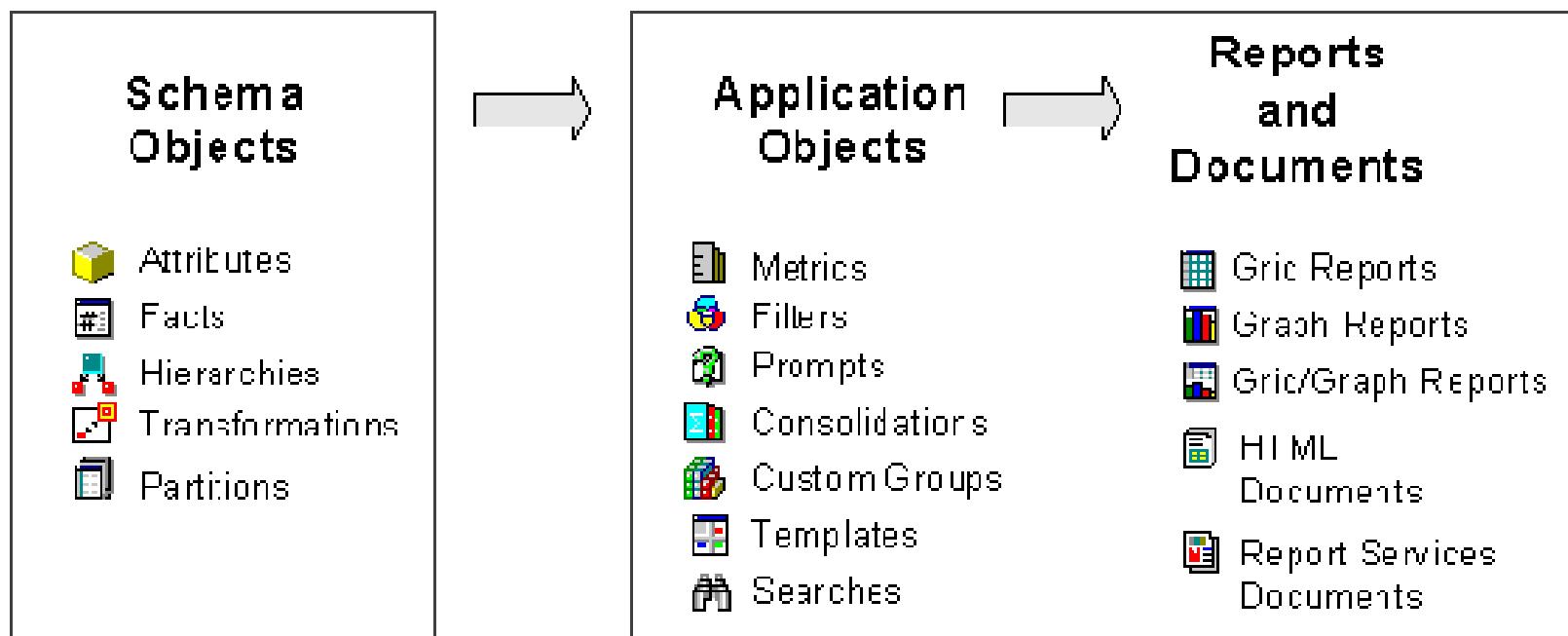
1. Metrics

Doc. dr Imre Petković



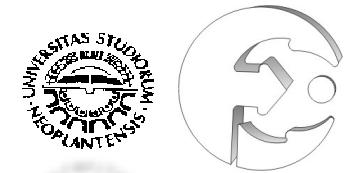
Kreiranje metrike Metric Editorom

Kreiranje metrika je neophodno za generisanje izveštaja:



Project Designers create schema objects, which can be used to create application objects.

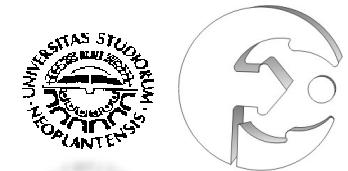
Report Designers create application objects, which are used to create reports and documents and can be used to create other application objects.



Kreiranje metrike Metric Editorom

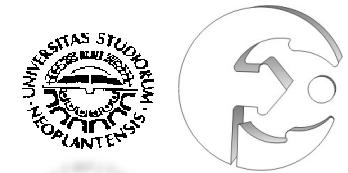
The screenshot shows the MicroStrategy Desktop interface. The menu bar includes File, Edit, View, Go, Tools, Administration, Schema, Window, and Help. The left sidebar has a 'New' section with options like Folder, Shortcut, External Mobile Folder, Report, Document, HTML Document, Prompt, Intelligent Cube, Drill Map, Metric (which is selected), Subtotal, Custom Group, Consolidation, Designated Element, and Training Metric. Below this is a tree view with nodes for Attribute, Fact, Hierarchy, Transformation, Partition, Logical Table, and Security Filter. The main pane displays a table titled 'Schema Objects/Hierarchies' with columns for Name, Type, Modification Time, and Description. The table lists several hierarchies:

Name	Type	Modification Time	Description
Data Explorer	Folder	3/2/2017 10:33:11 PM	Hierarchy groups folder
Klijent	Hierarchy	3/27/2017 10:02:11 AM	
Organizacionedrnicka	Hierarchy	3/27/2017 11:04:44 AM	
RodnikSplatapPoPolis	Hierarchy	3/27/2017 6:00:57 PM	
RadnikSklapargaPolne	Hierarchy	3/27/2017 9:08:12 PM	
Vozilo	Hierarchy	3/27/2017 12:27:25 PM	
VremensplateStete	Hierarchy	3/28/2017 11:07:45 PM	
VremensplatePolne	Hierarchy	3/29/2017 8:18:17 PM	
VozilaPolise	Hierarchy	3/27/2017 6:16:47 PM	



Kreiranje metrike Metric Editorom

A screenshot of the MicroStrategy Desktop application. The window title is "MicroStrategy Desktop". The menu bar includes File, Edit, View, Go, Tools, Administration, Schema, Window, and Help. The toolbar has various icons for file operations. The left pane shows a "Folder List" with a tree view of project objects, including "PS_DS_MD_Access" and "OsgVozila". The right pane displays a table of "Hierarchies" with columns: Name, Type, Modification Time, and Description. Entries include "Data Explore" (Folder), "Klijent" (Hierarchy), "Organizacionalednicka" (Hierarchy), "Redniksplatapopolis" (Hierarchy), and "Radni" (Hierarchy). A "New Metric" dialog box is open in the center, titled "Empty Metric". It contains a "General" tab with a preview icon showing a bar chart, a description field with the placeholder "Create an empty Metric", and three buttons at the bottom: "OK", "Cancel", and "Help". At the bottom of the screen, the Windows taskbar shows several pinned icons and the system clock indicating 8:48 PM on 3/29/2017.



Kreiranje metrike Metric Editorom

The screenshot shows the MicroStrategy Desktop interface. The main window title is "MicroStrategy Desktop". The menu bar includes File, Edit, View, Go, Tools, Administration, Schema, Window, Help. The toolbar has various icons for file operations. The left sidebar shows a "Folder List" with categories like MicroStrategy Analytics Modules, MicroStrategy Analytics Modules (Direct), MicroStrategy Tutorial (Direct), PS_DS_MD_Access, Administration, Fujitsu_Osiguranje, and OsgVozila. The "My Shortcuts" section under "OsgVozila" contains objects like My Personal Objects, Project Builder, Project Objects, Public Objects, Schema Objects (Attributes, Facts, Functions and Operators, Hierarchies, Partition Mappings, Tables, Transformations), and Data Explorer - OsgVozila. The central part of the screen displays the "New Metric - Metric Editor" dialog. The dialog has tabs for File, Edit, View, Tools, Window, Help, Save and Close, Undo, Redo, Object Browser, and Formula/Subtotals / Aggregation. The "Object Browser" panel shows a tree view of "Facts" with three items: Ispisac Iznos, Iznos Premje, and Procjenjena Vrednos. The "Formula" tab is active, showing a note: "Note: New Metric is defined as: Metric definition is empty". Below it, the "Definitor" section shows "Name: New Metric" and a formula editor with operators (+, -, *, /, fn). The formula input field contains "Enter your formula here." and a "Validate" button. At the bottom of the dialog is a "Close" button. A tooltip at the bottom of the dialog says "Double-click on object to add it into the formula". The status bar at the bottom shows "PS_DS_MD_Access", "Administrator (Bypass)", "EN", "3/26/2017", and "8:50 PM".



Kreiranje metrike Metric Editorom

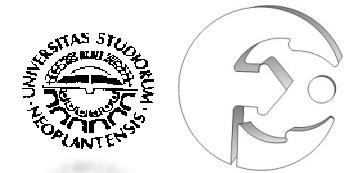
All metrics require the following components as part of the metric's definition:

- mathematical formula, which includes a mathematical function
 - $\text{Sum}(\text{Cost})$ - Cost is a fact stored in the data source
 - $(\text{Sum}(\text{Profit}) + \text{Sum}(\text{Cost}))$ - Profit is a fact stored in the data source
 - $\text{Count}(\text{Employee})$ - Employee is an attribute stored in the data source
- business level at which to calculate the formula



Kreiranje metrike Metric Editorom

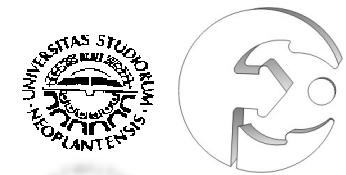
- business level at which to calculate the formula
 - A metric's formula must be calculated within the context of a business concept. Therefore, every **metric definition must include a reference to the attribute** that you want to provide context to the metric's calculation of data.
 - By default, a **metric is calculated at the report level**, that is, at the level of the attribute on the report in which the metric is placed. When more than one attribute is on a report, as is generally the case, a metric is calculated by default at the level of the lowest-level attribute that is on the report.
 - **Fact:Revenue, Attributes:Month,Year**
 - **Revenue {~+}** – the level of the lowest attribute on the report (Month)
 - **Revenue {Year}** – the Year level



Kreiranje metrike Metric Editorom

Default matematička funkcija (Sum) se primenjuje

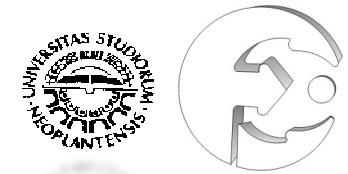
The screenshot shows the MicroStrategy Desktop interface. The main window is titled "New Metric - Metric Editor". The "Definition" section shows the metric name "New Metric" and the formula "Sum([Procenjena Vrednos])". The formula is highlighted with a yellow background. The "Object Browser" on the left shows a tree structure with nodes like "MicroStrategy Analytics Modules", "PS_DS_MD_Access", and "OsnigVozila". The "Facts" node under "Schema Objects" is expanded, showing facts like "Ispaceni Iznos", "Iznos Premije", and "Procenjena Vrednos". The status bar at the bottom indicates "Formula correct".



Kreiranje metrike Metric Editorom

Promena default matematičke funkcije (Sum)

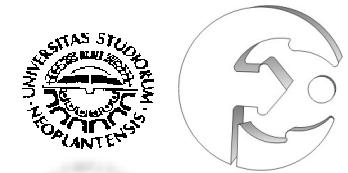
The screenshot displays the MicroStrategy Desktop interface with the 'New Metric - Metric Editor' window open. The window shows the definition of a new metric named 'New Metric' which is currently set to use the 'Sum' function. The formula is defined as `Sum([Procjenjena Vrednos])`. The 'Object Browser' panel on the left lists various objects including facts, hierarchies, and tables. The status bar at the bottom of the application window indicates that the formula is correct.



Kreiranje metrike Metric Editorom

Promena default matematičke funkcije (Sum)

The screenshot displays the MicroStrategy Desktop interface. The main window shows the 'New Metric - Metric Editor' dialog. In the 'Definition' section, the formula is set to `Sum([Procjenjena Vrednos])`. A note above the formula states: `New Metric is defined as:` `Sum([Procjenjena Vrednos])||ReportLevel`. Below the formula, there are buttons for `Validate` and `Clear`. The background shows the 'Object Browser' with the 'Functions and Operators' folder selected. The left sidebar shows a 'Folder List' with various project and schema objects.



Kreiranje metrike Metric Editorom

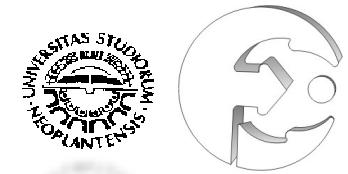
Promena default matematičke funkcije (Sum)

The screenshot displays the MicroStrategy Desktop environment. In the center, the 'New Metric - Metric Editor' dialog box is open. The dialog shows the following details:

- Formula:** Sum([Procjenjena Vrednost])
- Level (Dimensionality):** ReportLevel
- Condition:** (nothing)
- Transformation:** (nothing)

In the 'Definition' section, the metric is named 'New Metric' and the formula is listed as 'Sum([ValueList])'. The dialog also includes 'Validate' and 'Clear' buttons.

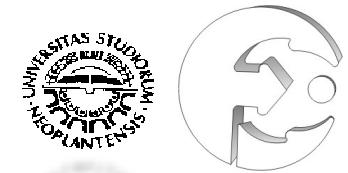
The background of the desktop shows the MicroStrategy interface with various toolbars and object lists. A 'Folder List' window on the left shows a hierarchy of objects, including 'PS_DS_MD_Access' and 'OsigVozila'. A 'Object Browser' window shows a list of functions like 'Basic', 'Date and Time', 'Interval', 'Null/Zero', 'OLAP', 'Rank and NTile', and 'String'.



Kreiranje metrike Metric Editorom

Promena default matematičke funkcije (Sum)

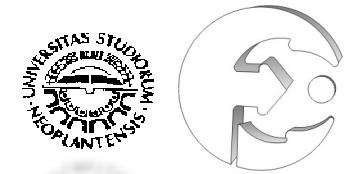
The screenshot shows the MicroStrategy Desktop interface. On the left, there's a folder tree with categories like MicroStrategy Analytics Modules, PS_DS_MD_Access, and OsgVozila. The PS_DS_MD_Access folder is expanded, showing Administration, Fujitsu_Osiguranje, and OsgVozila. The OsgVozila folder contains My Personal Objects, Project Builder, Public Objects, Schema Objects, and Data Explorer - OsgVozila. In the center, the 'New Metric - Metric Editor' dialog box is open. It has tabs for Formula and Subtotal / Aggregation, with Formula selected. The formula pane shows a metric named 'New Metric' defined as 'Sum([Procenjena Vrednost])'. Below it, a list of functions is shown, including Add, Average, Avg, Count, First, GeomMean, Greatest, Last, Least, Max, Median, Min, Mode, Multiply, Product, Stdev, StdevP, Sum, Var, and VarP. The bottom of the dialog box has 'Validate' and 'Close' buttons. A note at the bottom of the dialog says 'Double-click an object to add it into the formula'. The taskbar at the bottom shows various application icons and the system tray.



Kreiranje metrike Metric Editorom

Promena default matematičke funkcije (Sum)

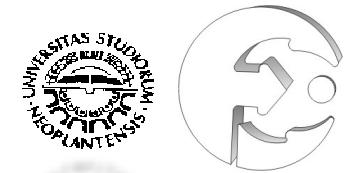
The screenshot shows the MicroStrategy Desktop interface. The main window is titled "New Metric - Metric Editor". The "Object Browser" pane on the left shows a folder structure under "PS_DS_MD_Access\OsigVozila\Scheme". The "Metric Editor" dialog box is open, displaying the definition of a new metric named "New Metric". The formula is set to "Sum([Procenjene Vrednosti])". The "Definition" section shows the formula being built: "Sum([Procenjene Vrednosti])". The status bar at the bottom indicates "0 Object(s)" and "Administrator (Bypass)".



Kreiranje metrike Metric Editorom

Promena default matematičke funkcije (Sum)

The screenshot shows the MicroStrategy Desktop interface with the 'Metric Editor' dialog box open. The 'Object Browser' pane on the left displays a tree structure of objects under 'PS_DS_MD_Access'. The 'Basic' category in the Object Browser is selected, showing a list of functions. In the 'New Metric - Metric Editor' dialog, a new metric named 'New Metric' is being defined. The formula is set to 'Avg([Procjenjeno Vrednos])' with a condition '(nothing)'. The 'Definition' section shows the formula as 'Avg([Procjenjeno Vrednos]) []'. A message at the bottom of the dialog says 'Formula correct.'

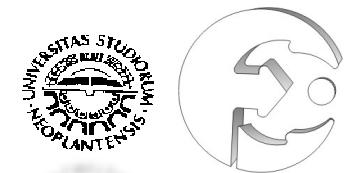


Kreiranje metrike Metric Editorom

Spašavanje metrike

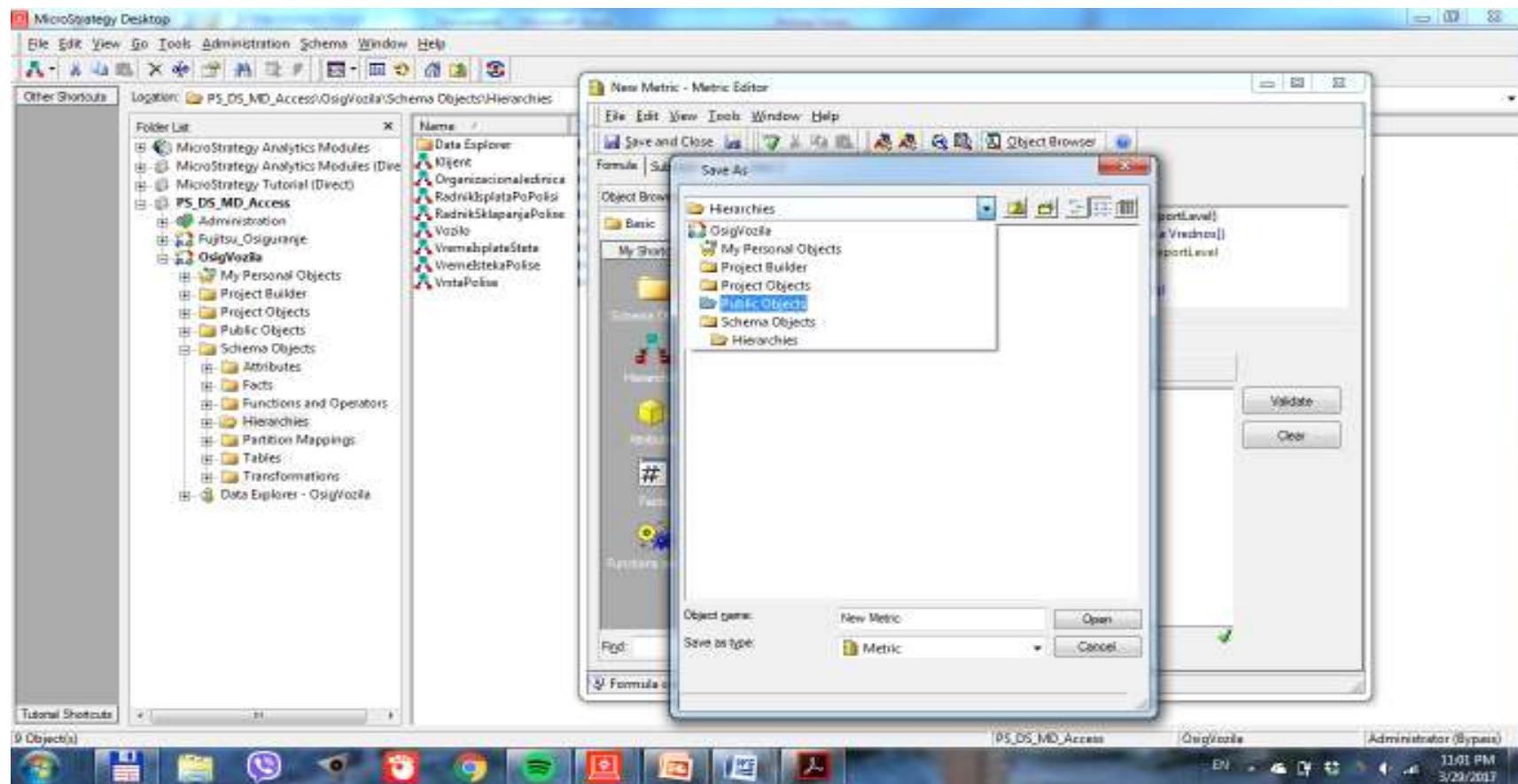
The screenshot shows the MicroStrategy Desktop interface with the following details:

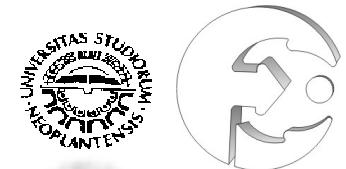
- Top Bar:** File, Edit, View, Go, Tools, Administration, Schema, Window, Help.
- Left Sidebar:** Other Shortcuts, Location: PS_DS_MD_Access\OsigVozila\Schema, Folder List, and a tree view of the project structure under PS_DS_MD_Access.
- Middle Area:** A large window titled "New Metric - Metric Editor".
- Sub-Header:** File, Edit, View, Tools, Window, Help, Save and Close, Undo, Redo, Object Browser.
- Formulas Tab:** Formula, Sub, Save and Close.
- Object Browser:** Basic category selected, showing "My Shortcuts" and a list of functions categorized by icon: Mathematical Functions (Add, Average, Avg, Count, First, GeoMean, Greatest, Last, Least, Max, Median, Min, Mode, Multiply, Product, StDev, StDevP, Sum, Var, VarP), Database Functions (Aggregate, Distinct, GroupBy, If, RowNumber, RowSet, RowSetP, Union, UnionAll), and Functions and Operators (#).
- Definition Section:** Metric: New Metric is defined as: Avg([Procjenjena Vrednost]) [ReportLevel].
 - Formulas = Avg([Procjenjena Vrednost])
 - Level (Dimensionality) = ReportLevel
 - Condition = (nothing)
 - Transformation = (nothing)
- Formula Input:** Name: New Metric, Formula: Avg([Procjenjena Vrednost]) [ReportLevel].
- Buttons:** Validate, Clear.
- Status:** Avg([ValueList]) ✓
- Bottom Status Bar:** Tutorial Shortcuts, 9 Objects(), PS_DS_MD_Access, OsigVozila, Administrator (Bypassed), EN, 10:59 PM, 3/29/2017.



Kreiranje metrike Metric Editorom

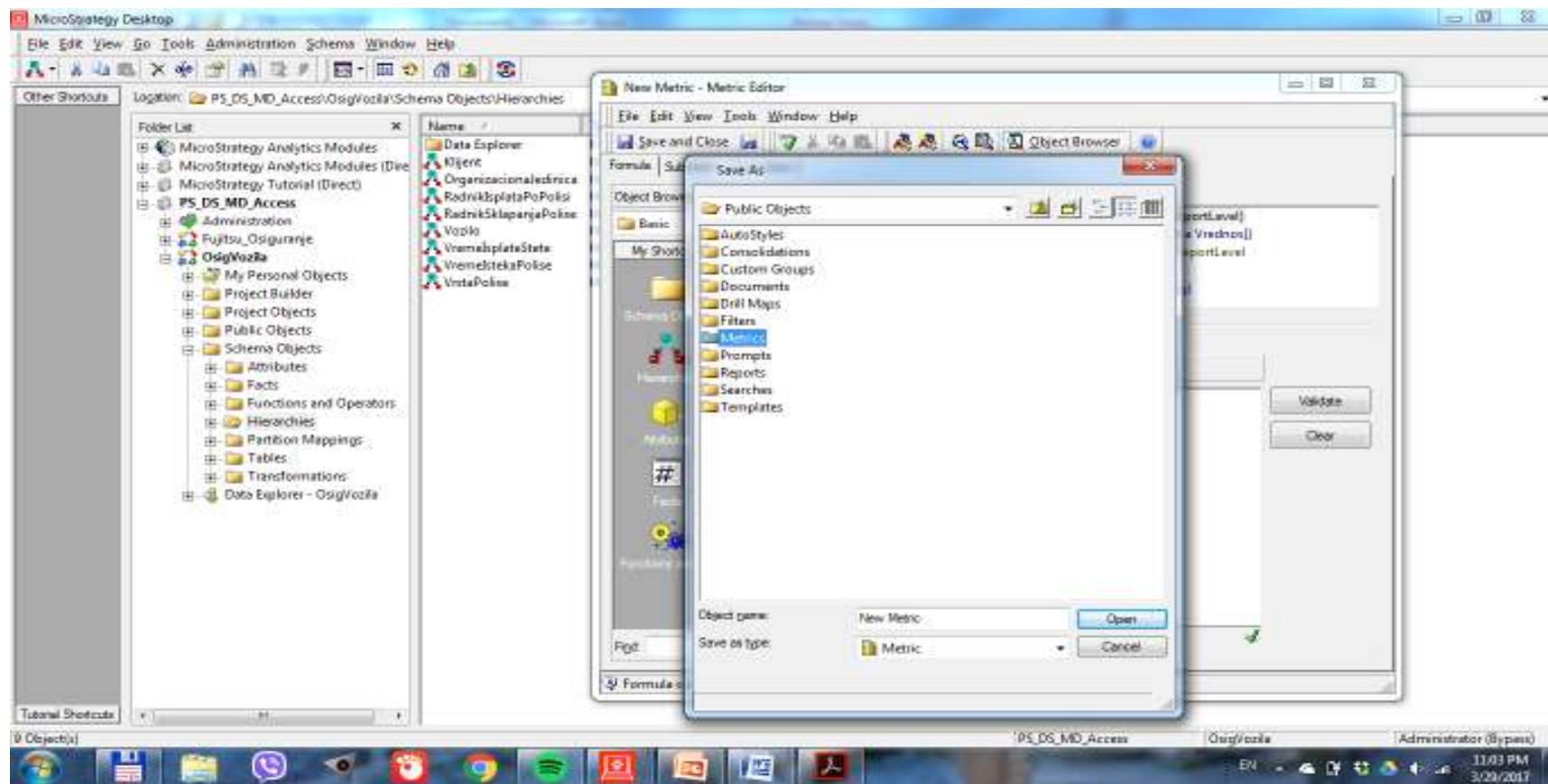
Spašavanje metrike

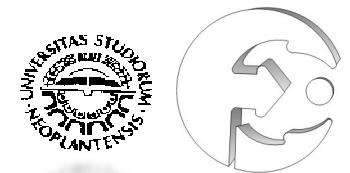




Kreiranje metrike Metric Editorom

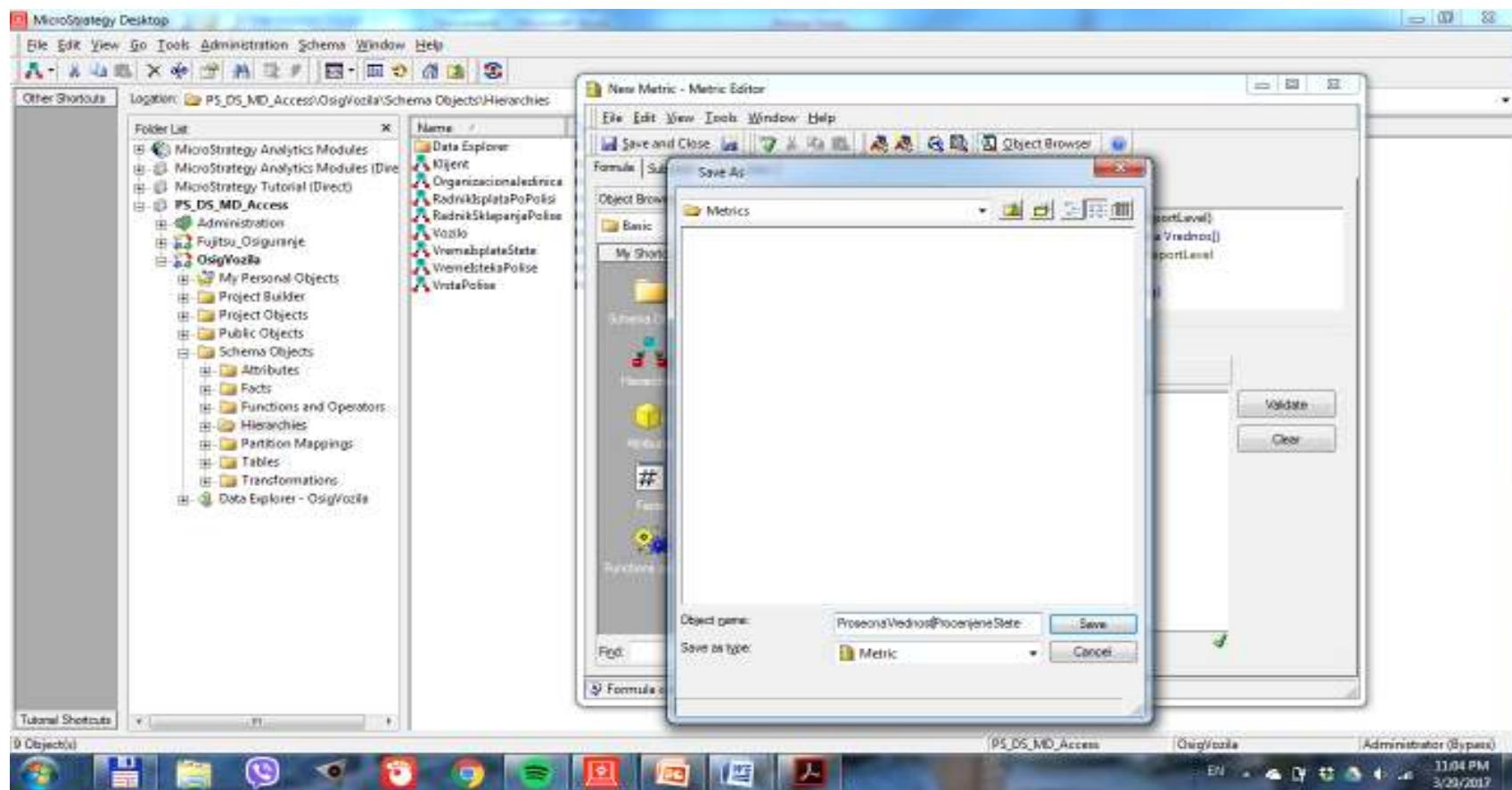
Spašavanje metrike

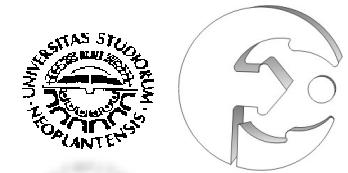




Kreiranje metrike Metric Editorom

Spašavanje metrike





Kreiranje metrike Metric Editorom

Spašavanje metrike

The screenshot shows the MicroStrategy Desktop interface. The menu bar includes File, Edit, View, Go, Tools, Administration, Schema, Window, and Help. The toolbar has various icons for file operations. The left pane displays a folder tree under "PS_DS_MD_Access\OsigVodila\Public Objects\Metrics". The right pane shows a table with one row:

Name	Type	Modification Time	Description
ProverkaVrednostiProcenjeneState - Metric	Metric	3/29/2017 11:05:43 PM	

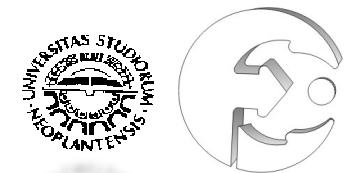
The status bar at the bottom indicates "1 Object(s)" and shows the system tray with icons for network, battery, and time.



Kreiranje metrike Metric Editorom

Spašavanje metrike

A screenshot of the MicroStrategy Desktop application window. The title bar reads "MicroStrategy Desktop". The menu bar includes "File", "Edit", "View", "Go", "Tools", "Administration", "Schema", "Window", and "Help". Below the menu is a toolbar with various icons. A left-hand sidebar titled "Tutorial Shortcuts" contains items like "New metric", "Logon", "Logout", and "Administrator (Bypass)". The main area shows a "Folder List" pane on the left with a tree view of objects. The path "PS_DS_MD_Access\OsigVozila\Public Objects\Metrics" is selected. The tree structure includes "MicroStrategy Analytics Modules", "MicroStrategy Analytics Modules (Direct)", "MicroStrategy Tutorial (Direct)", "PS_DS_MD_Access", "Administration", "Fujitsu_OsigVozila", "OsigVozila", which is expanded to show "My Personal Objects", "Project Builder", "Project Objects", "Public Objects" (containing "AutoStyles", "Consolidations", "Custom Groups", "Documents", "Drill Maps", "Filters", "Metrics" - this folder is highlighted in blue, indicating it is selected, "Prompts", "Reports", "Searches", "Templates"), "Schema Objects" (containing "Attributes", "Facts", "Functions and Operators", "Hierarchies", "Partition Mappings", "Tables", "Transformations"), and "Data Explorer - OsigVozila". The right side of the screen displays a table with columns "Name", "Type", "Modification Time", and "Description". One row is visible: "ProspectiveVrednostProcenjenjeState" (Metric), modified on 3/29/2017 11:05:43 PM. The bottom of the screen shows the Windows taskbar with icons for File Explorer, Task View, Start, Edge, Google Chrome, Spotify, File History, Task Scheduler, and File Explorer again. The status bar at the bottom right shows "11:00 PM" and "3/29/2017".



Kreiranje metrike Metric Editorom

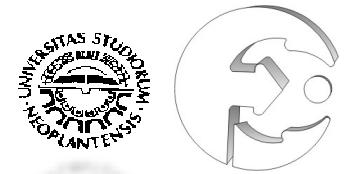
Kreiranje metrike-matematičke funkcije/metrike u metrici

The screenshot displays the MicroStrategy Desktop environment. The main window title is "MicroStrategy Desktop". The menu bar includes File, Edit, View, Go, Tools, Administration, Schema, Window, and Help. The toolbar contains various icons for file operations like Open, Save, Print, and Undo.

The left pane shows the "Folder List" with the path: PS_DS_MD_Access > OsigVozila > Public > Objects > Metrics. It lists several metrics such as "ProcenjeVrednostProcenjeneState", "UkupnaVrednostPlacenogIznosa", "UkupnaVrednostImeuslPremje", and "UkupnaVrednostProcenjeneState".

The right pane is the "New Metric (4) - Metric Editor" dialog box. It has tabs for "Formula" and "Subtotals / Aggregation". The "Formula" tab shows the metric definition as "Metric definition is empty". The "Object Browser" panel on the left of the dialog lists categories like My Personal Objects, Project Builder, Project Objects, Tasks Objects, Schema Objects, Hierarchies, Attributes, Facts, and Functions and Operators. The "Metrics" category is selected, showing a list of metrics. The "Facts" category is also visible. The "Empty expression" field at the bottom of the dialog is empty.

The taskbar at the bottom shows several pinned icons, including Microsoft Word, Microsoft Excel, Microsoft PowerPoint, Internet Explorer, and others. The system tray indicates the date and time as 11:30 PM, 3/29/2017.



Kreiranje metrike Metric Editorom

Kreiranje metrike-matematičke funkcije/metrike u metrici

The screenshot shows the MicroStrategy Desktop interface. The main window displays a folder structure under 'PS_DS_MD_Access\OsigVozila\Public Objects\Metrics'. A 'New Metric (4)' dialog box is open in the foreground, titled 'Metric Editor'. The dialog shows a tree view of objects under 'Metrics' and a formula editor area with the placeholder 'Enter your formula here.' The system tray at the bottom shows various icons and the date/time as 11:32 PM 3/29/2013.



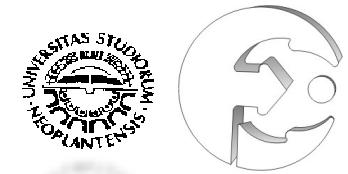
Kreiranje metrike Metric Editorom

Kreiranje metrike-matematičke funkcije/metrike u metrići

The screenshot displays the MicroStrategy Desktop interface with the 'Metric Editor' window open. The 'Object Browser' on the left shows various project objects like 'Metrics', 'Hierarchies', and 'Functions and Operators'. The 'New Metric (4)' dialog is in the center, showing the formula being constructed:

```
(UkupnaVrednostIspolacenogImena - UkupnaVrednostProcenjeneStete) / UkupnaVrednostIspolacenogImena
```

The formula consists of three main components: 'UkupnaVrednostIspolacenogImena' (Type: Metric), a subtraction operator, and 'UkupnaVrednostProcenjeneStete' (Type: Metric). Below the formula, the 'Definition' section shows the name 'New Metric (4)' and the validation status 'Formula correct'.



Kreiranje metrike Metric Editorom

Kreiranje metrike-matematičke funkcije/metrike u metrići

A screenshot of the MicroStrategy Desktop application window. The title bar reads "MicroStrategy Desktop". The menu bar includes File, Edit, View, Go, Tools, Administration, Schema, Window, and Help. The toolbar has various icons for file operations. The left sidebar shows a "Folder List" tree view with nodes like "MicroStrategy Analytics Modules", "PS_DS_MD_Access", "Administration", "Fujitsu_Osiguranje", "OsigVozila", "My Personal Objects", "Project Builder", "Project Objects", "Public Objects", "AutoStyles", "Consolidations", "Custom Groups", "Documents", "Drill Maps", "Filters", "Metrics" (which is selected), "Prompts", "Reports", "Searches", "Templates", "Schema Objects", "Attributes", "Facts", "Functions and Operators", "Hierarchies", "Partition Mappings", "Tables", "Transformations", and "Data Explorer - OsigVozila". The main pane displays a table titled "Metrics" with four rows. The columns are "Name", "Type", "Modification Time", and "Description". The rows are:

Name	Type	Modification Time	Description
UkupnaVrednostRocanjeMetrika	Metric	3/29/2017 11:06:43 PM	
UkupnaVrednostBilanciranaGirovista	Metric	3/29/2017 11:21:33 PM	
UkupnaVrednostDnevnihRemijsa	Metric	3/29/2017 11:22:50 PM	
UkupnaVrednostProcenjeneStete	Metric	3/29/2017 11:20:37 PM	
UkupnoPlaćenoMinimalnoUkupnoRoc/RocnostStete	Metric	3/29/2017 11:38:05 PM	

The status bar at the bottom shows "5 Object(s)", "PS_DS_MD_Access", "OsigVozila", "Administrator (Bypass)", "EN", "11:38 PM", and "3/29/2017".