



Sustav za pisanje matematičkih tekstova

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Mladi nadareni matematičari "Marin Getaldić"

Carnet Users Conference
Šibenik, listopad 2022.

Motivacija

- sastavljanje dokumenata sa (složenijim) matematičkim izrazima i simbolima
- tekst se sastavlja pisanjem naredbi, za razliku od programa koji funkcioniraju po principu „what you see is what you get”

$$\int_0^{\infty} e^{-\alpha x} Y_{\nu}(x) dx = \csc \nu \pi \frac{\left(\frac{\beta}{2}\right)^{\nu} \Gamma(*\nu)}{\sqrt[5]{(\alpha^2 + \beta^2)^{\mu}}} \quad \left. \begin{array}{l} \text{(pretpostavka)} \\ -\Theta_* \left[(\alpha^2 + \beta^2)^{-\mu/2} \right] \text{ (Čebišev)} \end{array} \right\}$$

Overleaf (www.overleaf.com)

FTF
Uvod
Overleaf
Tekst
Okoline
Matematika
Matematičke okoline
Dodatno

The screenshot displays the Overleaf website interface. At the top, the Overleaf logo is on the left, and navigation links for 'Features & Benefits', 'Templates', 'Plans & Pricing', and 'Help' are in the center. On the right, there are 'Register' and 'Log In' buttons. The main banner features the text 'LaTeX, Evolved' in large white font, with the subtitle 'The easy to use, online, collaborative LaTeX editor' below it. A central image shows a preview of a LaTeX document titled 'The Universe' with an 'Introduction' section. Below the preview, a 'Get started now' button is visible. At the bottom, there are two registration options: 'Register using Google' and 'Register using ORCID'. Below these, there is a form with an email input field containing 'email@example.com', a password field with asterisks, and a 'Register' button. A checkbox for 'I'd like emails about product offers and company news and events.' is also present, along with a link to 'terms of service'.

Log in to Overleaf

mail.adresa@gmail.com

.....

Log in with your email

or



Log in with IEEE



Log in with Google



Log in with Twitter



Log in with ORCID

or

Log in through your institution

Overleaf

ETC

Uvod

Overleaf

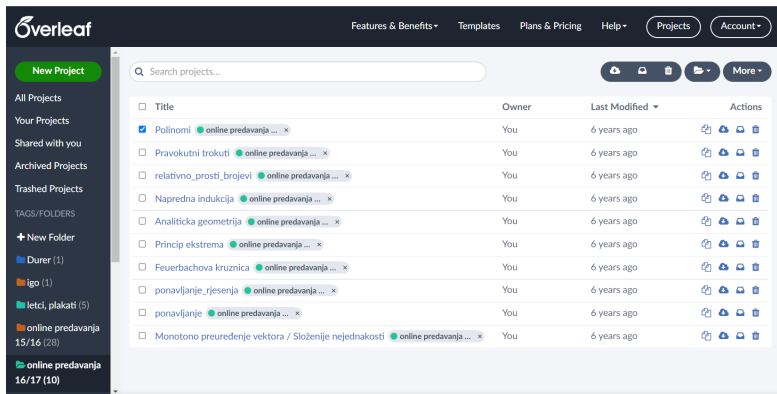
Tekst

Okoline









































Matematika

Matematičke okoline

Dodatno



The screenshot shows the Overleaf web interface. At the top, there is a navigation bar with the Overleaf logo, links for 'Features & Benefits', 'Templates', 'Plans & Pricing', 'Help', 'Projects', and 'Account'. Below the navigation bar is a search bar labeled 'Search projects...'. The main content area displays a list of projects with columns for 'Title', 'Owner', 'Last Modified', and 'Actions'. The first project, 'Polinomi', is selected. The left sidebar shows a navigation menu with options like 'New Project', 'All Projects', 'Your Projects', 'Shared with you', 'Archived Projects', 'Trashed Projects', 'TAGS/FOLDERS', and '+ New Folder'. Under '+ New Folder', there are several folders listed, including 'Durer (1)', 'igo (1)', 'letci, plakati (5)', 'online predavanja 15/16 (28)', and 'online predavanja 16/17 (10)'.

<input type="checkbox"/>	Title	Owner	Last Modified	Actions
<input checked="" type="checkbox"/>	Polinomi online predavanja ... x	You	6 years ago	   
<input type="checkbox"/>	Pravokutni trokuti online predavanja ... x	You	6 years ago	   
<input type="checkbox"/>	relativno_prosti_brojevi online predavanja ... x	You	6 years ago	   
<input type="checkbox"/>	Napredna indukcija online predavanja ... x	You	6 years ago	   
<input type="checkbox"/>	Analićka geometrija online predavanja ... x	You	6 years ago	   
<input type="checkbox"/>	Princip ekstrema online predavanja ... x	You	6 years ago	   
<input type="checkbox"/>	Feuerbachova kruznica online predavanja ... x	You	6 years ago	   
<input type="checkbox"/>	ponavljanje_rjesenja online predavanja ... x	You	6 years ago	   
<input type="checkbox"/>	ponavljanje online predavanja ... x	You	6 years ago	   
<input type="checkbox"/>	Monotono preuređenje vektora / Složenije nejednakosti online predavanja ... x	You	6 years ago	   

Novi dokument

TeX

Uvod

Overleaf

Tekst

Okoline

Matematika

Matematičke okoline

Dodatno

The screenshot displays the Overleaf web editor interface for a new document titled "Moj novi dokument". The interface is divided into several sections:

- Top Bar:** Contains navigation icons (home, refresh) and utility icons (undo, redo, search, chat).
- Toolbar:** Includes file management icons (new, open, save, delete) and tabs for "Source" (selected) and "Rich Text". A "Recompile" button is also present.
- File Explorer:** Shows a single file named "main.tex".
- Code Editor:** Displays the LaTeX source code for the document:

```
1 \documentclass{article}
2 \usepackage[utf8]{inputenc}
3
4 \title{Moj novi dokument}
5 \author{korisnickoime }
6 \date{October 2022}
7
8 \begin{document}
9
10 \maketitle
11
12 \section{Introduction}
13
14 \end{document}
15
```
- File Outline:** Shows a tree view with "Introduction" selected.
- Preview Window:** Displays the rendered output of the document, showing the title "Moj novi dokument", author "korisnickoime", date "October 2022", and a section heading "1 Introduction".

Preambula

LaTeX

Uvod

Overleaf

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Matematičke okoline

Dodatno

- komentari započinju znakom %
- opći oblik naredbe u \LaTeX u je
`\naredba[opcije]{argument}{argument}`
- `\documentclass[12pt]{scrartcl}`
- preambula — dio dokumenta koji slijedi nakon naredbe `\documentclass`, a prije početka renderiranog dijela dokumenta

Paketi

ETX

Uvod

Overleaf

Tekst

Okoline

Matematika

Matematičke okoline

Dodatno

- uključivanje paketa naredbom
`\usepackage[opcija]{paket}`
- inputenc, opcija utf8
- amsmath, amssymb, amsthm
- babel, opcija croatian
- hyperref, opcija unicode
- thmtools

Počtetne naredbe

ETEX

Uvod

Overleaf

Tekst

Okoline

Matematika

Matematičke okoline

Dodatno

The screenshot displays the Overleaf online LaTeX editor interface. The top navigation bar includes 'Menu', 'Upgrade', 'Moj novi dokument', 'Review', 'Share', 'Submit', 'History', 'Layout', and 'Chat'. Below this, there are tabs for 'Source' and 'Rich Text', and a 'Recompile' button. The left sidebar shows a file explorer with 'main.tex' selected and a 'File outline' panel listing sections like 'Prvo poglavlje' and 'Bez broja'. The main editor area shows the LaTeX source code for a document class, packages, title, subtitle, author, date, and sections. The right pane shows the rendered PDF output, which includes a title page with 'Naslov dokumenta', 'Podnaslov', 'Ime i prezime autora', and '1. listopada 2022.', followed by a table of contents and the beginning of the first chapter.

```
1 \documentclass{scrartcl}
2 \usepackage{utf8}{inputenc}
3 \usepackage{amsmath,amsymb,amsthm}
4 \usepackage{croatian}{babel}
5 \usepackage{unicode}{hyperref}
6 \usepackage{thmtools}
7
8 \title{Naslov dokumenta}
9 \subtitle{Podnaslov}
10 \author{Ime i prezime autora}
11 \date{\today}
12
13 \begin{document}
14
15 \maketitle
16 \tableofcontents
17
18 %\newpage
19
20 \section{Prvo poglavlje}
21
22 Ovdje pišemo tekst prvog poglavlja.
23
24
25 \subsection{Prvo potpoglavlje}
26
27 Ovdje pišemo tekst koji spada u prvo
28 potpoglavlje.
29 \section*{Bez broja}
30
31 \end{document}
```

Naslov dokumenta
Podnaslov
Ime i prezime autora
1. listopada 2022.

Sadržaj

1 Prvo poglavlje	1
1.1 Prvo potpoglavlje	1

1 Prvo poglavlje
Ovdje pišemo tekst prvog poglavlja.

1.1 Prvo potpoglavlje
Ovdje pišemo tekst koji spada u prvo potpoglavlje.

Bez broja

Početne naredbe

ETX

Uvod

Overleaf

Tekst

Okoline

Matematika

Matematične okoline

Dodatno

- `\title`, `\subtitle`, `\author`, `\date`
- `\today`
- `\maketitle`, `\tableofcontents`
- `\section`, `\subsection`, `\section*`
- `\newpage`

Osnovni tekst

LaTeX

Uvod

Overleaf

Tekst

Okoline

Matematika

Matematičke okoline

Dodatno

- normalan tekst pišemo „normalno”
- naredba `\LaTeX{}` za $\text{L}^{\text{A}}\text{T}_{\text{E}}\text{X}$
- `\textbf{bold}` za **bold**
- `\textit{italic}` ili `\emph{italic}` za *italic*
- `\textsl{slant}` za *slant*
- `\underline{podcrtano}` za podcrtano

Fontovi

TeX

Uvod

Overleaf

Tekst

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Matematičke okoline

Dodatno

naredba	rezultat
<code>\textsc{Small Caps}</code>	SMALL CAPS
<code>\textsf{sans serif}</code>	sans serif
<code>\texttt{typewriter}</code>	typewriter
<code>\textrm{roman}</code>	roman
<code>\textup{uspravno}</code>	uspravno

Okoline

ETP

Uvod
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Dodatno

- koriste se za formatiranje dijela sadržaja u tekstu
- započinju naredbom

`\begin{}`,

a završavaju naredbom

`\end{}`

- najčešće korištene okoline su one za pisanje listi i uređenih listi

Okolina *itemize*

ETP

Uvod

Overleaf

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Matematičke okoline

Dodatno

Područja matematike su:

```
\begin{itemize}
  \item algebra,
  \item kombinatorika,
  \item geometrija,
  \item teorija brojeva.
\end{itemize}
```

Područja matematike su:

- algebra,
- kombinatorika,
- geometrija,
- teorija brojeva.

Okolina *enumerate*

ETP

Uvod
Overleaf

Tekst
Okoline

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Matematičke okoline

Dodatno

Raspored sati za srijedu:

```
\begin{enumerate}
  \item Matematika
  \item Matematika
  \item Informatika
  \item Fizika
  \item Fizika
\end{enumerate}
```

Raspored sati za srijedu:

- 1 Matematika
- 2 Matematika
- 3 Informatika
- 4 Fizika
- 5 Fizika

Matematički zapis

ETP

Uvod

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Tekst

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Matematičke okoline

Dodatno

- matematički sadržaji kao dio teksta pišu se unutar znakova dolara (\$)

$\$x+y=0\$$ za $x + y = 0$ (umjesto $x+y=0$)

- dio teksta koji želimo istaknuti (odvajanjem u zaseban red) pišemo unutar znakova \$\$, npr. $$$ x+y+z = 0. $$$ za

$$x + y + z = 0.$$

Matematički simboli

ETP

Uvod

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Tekst

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Matematika

Matematičke okoline

Dodatno

naredba	simbol	naredba	simbol
<code>+</code> , <code>-</code>	$+$, $-$	<code>\alpha</code> , <code>\beta</code>	α , β
<code><</code> , <code>></code>	$<$, $>$	<code>\sin</code> , <code>\cos</code>	\sin , \cos
<code>\leq</code> , <code>\geq</code>	\leq , \geq	<code>\infty</code>	∞
<code>\pm</code> , <code>\mp</code>	\pm , \mp	<code>\emptyset</code>	\emptyset
<code>=</code> , <code>\neq</code>	$=$, \neq	<code>\in</code> , <code>\notin</code>	\in , \notin
<code>\cdot</code> , <code>\times</code>	\cdot , \times	<code>\implies</code>	\implies
<code>\dots</code> , <code>\cdots</code>	\dots , \cdots	<code>\i</code>	\int
<code>\vdots</code> , <code>\ddots</code>	\vdots , \ddots	<code>\exists</code>	\exists
<code>\cap</code> , <code>\cup</code>	\cap , \cup	<code>\forall</code>	\forall

Indeksi, potencije i razlomci

ETP

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Matematičke okoline

Dodatno

- indeksi i potencije zapisuju se korištenjem simbola \wedge i $_$

npr. $a_1b\wedge\{10\} = x_{20}\wedge e$

$$a_1 b^{10} = x_{20}^e$$

- razlomke možemo zapisivati korištenjem naredbe `\frac`

npr. `\frac{xy}{z}`

$$\frac{xy}{z}$$

Sume i integrali

- sume i integrale možemo zapisati korištenjem naredbe `\sum` i `\int`

npr. `\sum_{k=1}^n \frac{1}{k}`

$$\sum_{k=1}^n \frac{1}{k}$$

`\int_0^{\pi} \sin x`

$$\int_0^{\pi} \sin x$$

Okolina *equation*

ETP

Uvod

Overleaf

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Matematičke okoline

Dodatno

Jednadžba

```
\begin{equation}
    x + 2y - 3z = 5
\end{equation}
```

zapisat e se u novi red i dobiti oznaku, a sljede a ne e dobiti oznaku:

```
\begin{equation*}
    x + 2y - 3z = 5.
\end{equation*}
```

Okolina *equation*

ETX

Uvod

Overleaf

Tekst

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Matematičke okoline

Dodatno

Jednadžba

$$x + 2y - 3z = 5 \tag{1}$$

zapisat će se u novi red i dobiti oznaku, a sljedeća neće dobiti oznaku:

$$x + 2y - 3z = 5.$$

Okolina *gather*

```
\begin{gather}
1+2+3+\cdots+n\\
1^2+2^2+3^2+\cdots+n^2 \notag \\
\vdots\\
\frac{1}{1}+\frac{1}{2}+\dotsb+\frac{1}{n}
\end{gather}
```

$$1 + 2 + 3 + \cdots + n \tag{2}$$

$$1^2 + 2^2 + 3^2 + \cdots + n^2$$
$$\vdots \tag{3}$$

$$\frac{1}{1} + \frac{1}{2} + \cdots + \frac{1}{n} \tag{4}$$

Okolina *align*

ETX

Uvod

Overleaf

Tekst

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Matematičke okoline

Dodatno

```
\begin{align*}
x+2y-3z &=5 & 5x-z &=12\\
x &>0 & x,y,z &\in A
\end{align*}
```

$$x + 2y - 3z = 5$$

$$x > 0$$

$$5x - z = 12$$

$$x, y, z \in A$$

Matematički fontovi

ETX

Uvod

Overleaf

Tekst

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Matematičke okoline

Dodatno

naredba	rezultat
$\$ \backslash \text{mathbf}\{\text{mathbold}\} \$$	mathbold
$\$ \backslash \text{mathsf}\{\text{math sans serif}\} \$$	math sans serif
$\$ \backslash \text{mathcal}\{\text{CALIGRAPH}\} \$$	<i>CALIGRAPH</i>
$\$ \backslash \text{mathbb}\{\text{BLACKBOARD BOLD}\} \$$	BLACKBOARD BOLD

Tablice

ETP*

Uvod

Overleaf

Tekst

Okoline

Matematika

Matematičke okoline

Dodatno

```
\begin{tabular}{l|rl}
```

& Zaglavlje & Drugo zaglavlje \\ \hline

Prvi & \multicolumn{2}{c}{Ovo je jedna mala}

& tablica. \\

Drugi

```
\end{tabular}
```

	Zaglavlje	Drugo zaglavlje
Prvi	Ovo je jedna mala	tablica.
Drugi		

Slike

```
\begin{figure}
  \centering
  \includegraphics[width=0.9\textwidth]{MNM.png}
  \caption{MNM logo (opis slike)}
\end{figure}
```



MLADI NADARENI MATEMATIČARI
Marin Getaldić

Slika: MNM logo (opis slike)

Dodatno

ETX

Uvod

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Tekst

Okoline

Matematika

Matematičke okoline

Dodatno

- reguliranje razmaka
- reguliranje veličina zagrada
- teoremske okoline
- literatura
- crtanje (paket tikz)
- referenciranja
- ...

Hvala na pažnji!