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1 Overview

BIU-notation is a package for typesetting unique/esoteric mathematical notation used by lecturers in Bar Ilan University.

The package is intended to be independent, as in it does not require any other package installations and can be used in plain-TEX(with the removal of LaTEXmacros that are necessary for LaTEXpackages).

Any suggestions/issues should be made to the github repository.

1.1 Installation

If you're using an online LaTEXeditor like overleaf, then just upload the biunotation.sty file to your project, and skip to **Step 3**. The other steps require you to have LaTEXinstalled locally (or Lyx).

Step 1:

The first step is to somehow download biunotation.sty.

This can be done by cloning this repository. This can be done on the command line (assuming `git` is installed) with

```
$ git clone https://github.com/ari-feiglin/BIUnotation.git /path/to/destination
```

So for example:

```
$ git clone https://github.com/ari-feiglin/BIUnotation.git ~/Downloads
```

Will create a directory called `biunotation` in `/Downloads` with the repository.

Step 2:

Now we must move the correct file to the correct directory. First locate `biunotation.sty`. If you cloned the repository into your current directory, it can be found at `./biunotation/biunotation.sty`.

If you'd like to only use this package once, then move `biunotation.sty` to the same directory as your `.tex` file (or `.lyx` file if you're using Lyx).

If you'd like to use this package multiple times, move it to `/texmf` (if it doesn't exist, create it).

Step 3:

In your `.tex` file, in its preamble (before `\begin{document}` but after `\documentclass ...`), put

```
\usepackage {biunotation}
```

If you are using Lyx, go to `Document > Settings > ... > LaTeX Preamble` and paste the above command.

2 Macros

2.1 Symbols

2.1.1 Mathmode Symbols

- `\dcup`: A *binary operator* that is an alternative method of denoting disjoint unions (an alternative is $\sqcup$).
  - `Display style:` $A \dot\cup B$
  - `Text style:` $A \dot\cup B$
  - `Script style:` $A\dot\cup B$
  - `Scriptscript style:` $A\dot\cup B$
- `\bigdcup`: The *large operator* brother of `\dcup`.
  - `Display style:` $\dot\bigcup_{i=1}^{\infty} A_i$
  - `Text style:` $\dot\bigcup_{i=1}^{\infty} A_i$
  - `Script style:` $\dot\bigcup_{i=1}^{\infty} A_i$
  - `Scriptscript style:` $\dot\bigcup_{i=1}^{\infty} A_i$
- `\indep`: A *binary relation*[1] that is an alternative method of denoting independence (an alternative is $\perp$).
  - `Display style:` $A \perp\!\!\!\perp B$
  - `Text style:` $A \perp\!\!\!\perp B$
  - `Script style:` $A \perp\!\!\!\perp B$
  - `Scriptscript style:` $A \perp\!\!\!\perp B$

2.1.2 Textmode Symbols

- `\pp`: (You have a smol one)

[1] This is not defined as a binary relation but should nevertheless be used as one

2.2 Symbol Creation Macros

These are macros used for creating new symbols.

- `\putsym`{⟨*primary*⟩}{⟨*secondary*⟩}: Places the *secondary* symbol over the *primary* symbol.[2]

```
$\putsym {\cup }{\cdot }$
```
$\putsym {\cup }{\cdot }$

```
$\putsym {\triangle }{*}$
```
$\putsym {\triangle }{*}$

[2]In order to allow you to worry about extra space around *primary*, it becomes a *ordinary* math symbol.