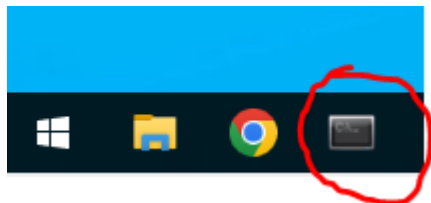


Delo v okolju Jupyter Lab / Jupyter Notebook

Odprite orodje Anaconda Prompt ali Command prompt:



Zamenjajte delovni direktorij

V okolju VMware vpišite:

```
> cd c:\metabolic\
```

Če delate izven okolja VMware, pojdite v mapo, kjer navadno delate.

Prenesite datoteke za delavnico

Vpišite

```
> git clone https://github.com/mmoskon/BioMed2223
```

```
> cd BioMed2223
```

Posodobite datoteke za delavnico

Če je od prenosa minilo že nekaj časa, lahko datoteke posodobite:

```
> cd BioMed2223
```

```
> git pull
```

Zaženite okolje Jupyter Lab / Notebook

Za Jupyter Lab vpišite

```
> jupyter lab
```

Podobno alternativa je Jupyter Notebook, ki ga zaženete z

```
> jupyter notebook
```

V vašem privzetem brskalniku se bo odprl vmesnik za delo z datotekami IPython Notebook (ipynb) – Jupyter Lab. / Notebook

00_basic.ipynb - JupyterLab

localhost:8888/lab/tree/00_basic.ipynb

File Edit View Run Kernel Tabs Settings Help

Launcher 00_basic.ipynb Code

metabolic

Ime virtualnega okolja

Orodna vrstica

```
from cobra.io import load_model
import numpy as np
import pickle
```

Celica s kodo v Pythonu

```
model = cobra.io.read_sbml_model('models\Recon3D.xml')
model.genes[:3]
[<Gene 0 at 0x1c9bbee450>,
 <Gene 26_AT1 at 0x1c9bbee6f0>,
 <Gene 314_AT1 at 0x1c9bbee6c10>]
model.metabolites[:3]
[<Metabolite 10fthf_c at 0x1c9f0b21d30>,
 <Metabolite 10fthf_l at 0x1c9f0b21ca0>,
 <Metabolite 10fthf_m at 0x1c9f0b21e20>]
model.reactions[:3]
[<Reaction 24_2SDHVITD3tm at 0x1c99c3b7ac0>,
 <Reaction 25HVITD3tm at 0x1c99c3b7a60>,
 <Reaction CO2tl at 0x1c99c3b7cd0>]
```

Let's see the model summary

Model summary can be obtained by calling `model.summary()`

```
model.summary()
```

Objective

1.0 BIOMASS_maintenance = 755.003215550663

Uptake

Metabolite	Reaction	Flux	C-Number	C-Flux
thmtp_c	DM_thmtp_c	1000	12	4.09%
12ppd_R_e	EX_12ppd_R_e	250.8	3	0.26%
5aop_e	EX_5aop_e	1000	5	1.70%
HC00250_e	EX_HC00250_e	1000	0	0.00%
HC00900_e	EX_HC00900_e	1000	4	1.36%
HC01361_e	EX_HC01361_e	1000	9	3.07%
Ukyn_e	EX_Ukyn_e	105.1	10	0.36%
acetone_e	FX_acetone_e	427.7	3	0.44%

Simple 0 metabolic | idle Mode Edit Ln 3, Col 1 00_basic.ipynb 0

Odprta datoteka

Če virtualno okolje ni nastavljeno na *metabolic*, pojdite na *Kernel* → *Change Kernel* in si izberite *metabolic*.

Select Kernel

Select kernel for: "00_basic.ipynb"

metabolic

Cancel

Select

Osnovne bližnjice

- Poženi trenutno celico: Ctrl+Enter ali klik na »play« v orodni vrstici
- Poženi trenutno celico in pojd na naslednjo: Shift+Enter
- Uredi celico Markdown: dvojni klik na celico
- Ustvari novo celico, briši celico, kopiraj celico: + ✂ 📄 📋
- Nastavi tip celice:

