# Вежбе из Електромагнетске компатибилности

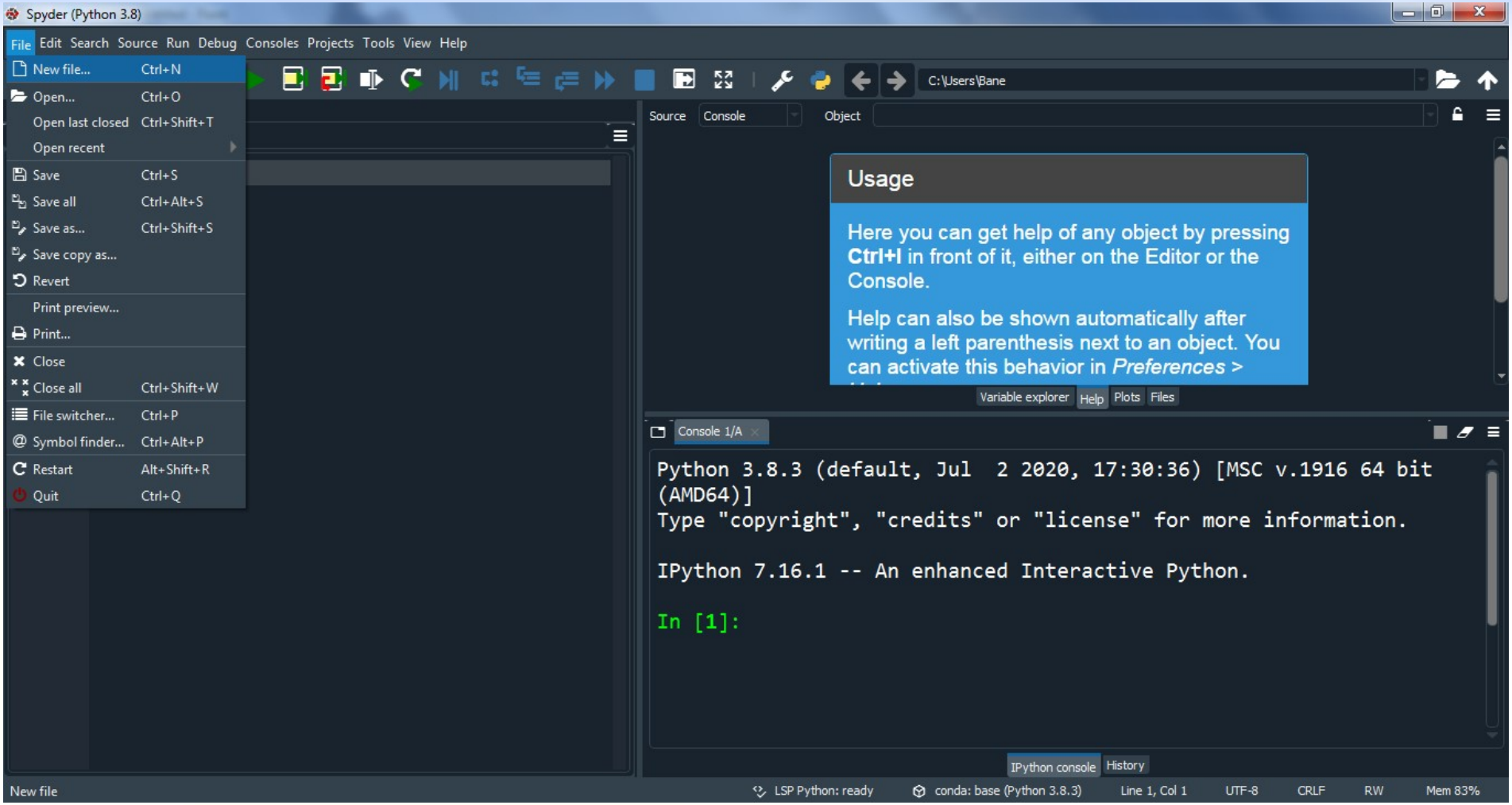
http://mtt.etf.rs/Elektromagnetska.Kompatibilnost/01-Python.pdf
http://mtt.etf.rs/Elektromagnetska.Kompatibilnost/01-EMCt.pdf


Драган Олћан
olcan@etf.rs

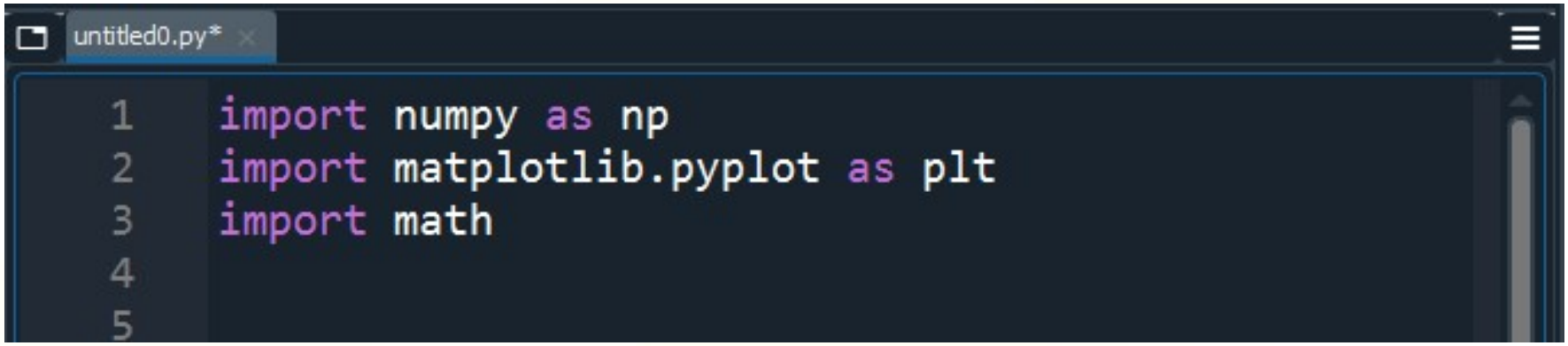
Дарко Нинковић
darko@etf.rs

Јелена Динкић
jdinkic@etf.rs

# Python 3.8
# (Spyder окружење са Anaconda)

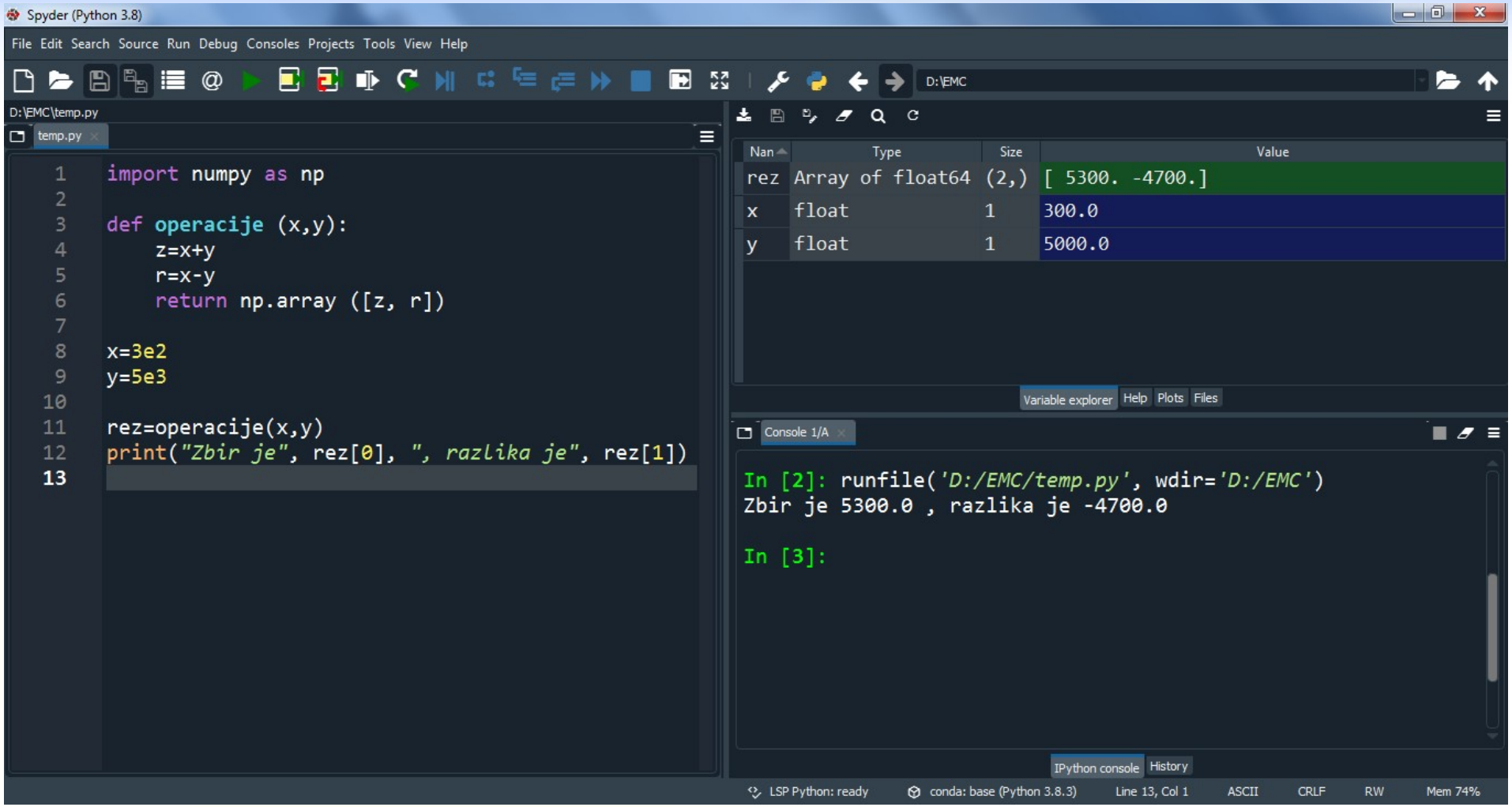


# Библиотеке




- Користан сајт: https://matplotlib.org/stable/index.html

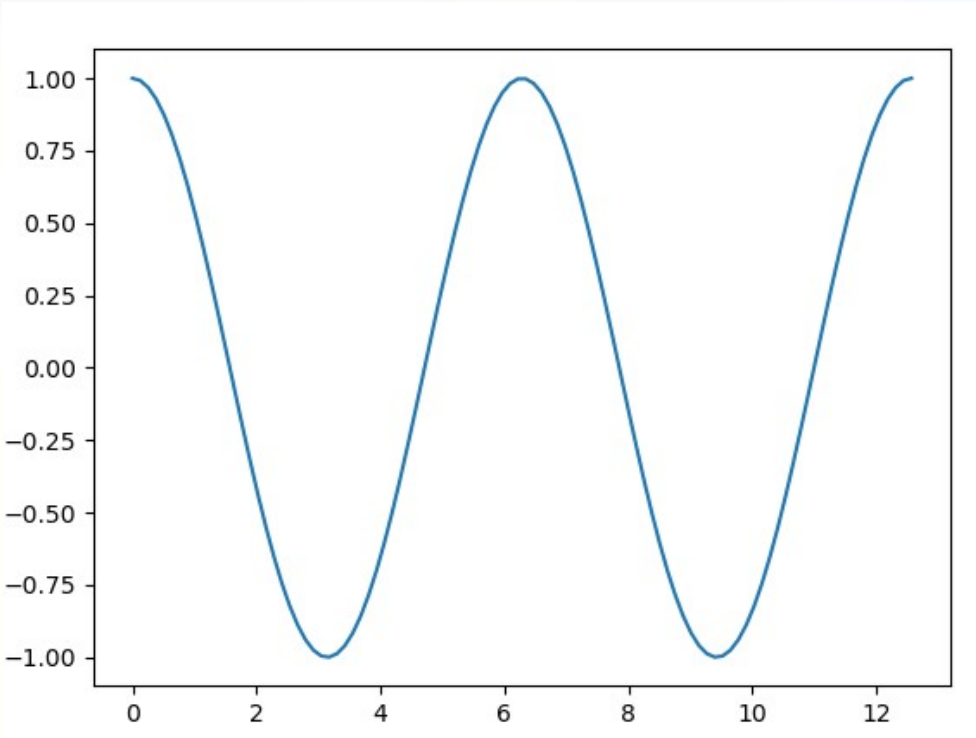
# Дефинисање функције



# PLOT

cos_plot.py

```
1  import numpy as np
2  import matplotlib.pyplot as plt
3  import math
4
5  x=np.linspace(0,4*math.pi,100)
6
7  y=np.cos(x)
8
9  fig1=plt.figure()
10 plt.plot(x,y)
```



# PLOT_SURFACE

surf_plot.py

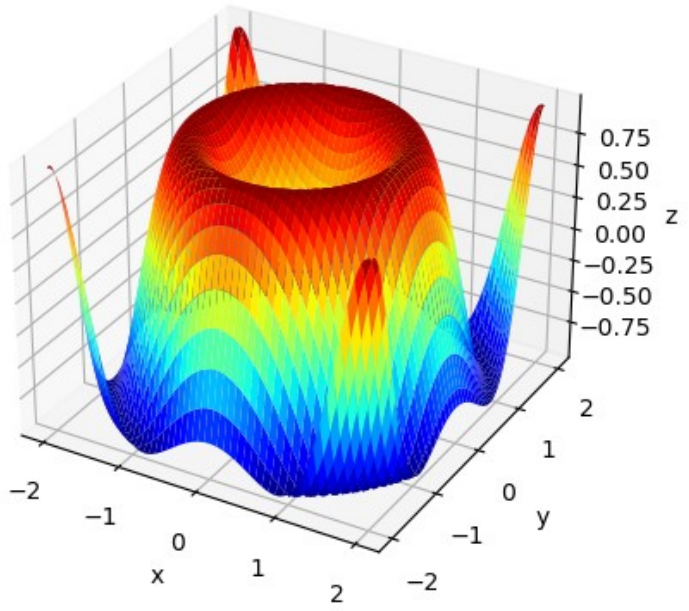
```python
import matplotlib.pyplot as plt
import numpy as np

x=np.linspace(-2, 2, 100)
y=np.linspace(-2, 2, 100)

x,y=np.meshgrid(x,y)

z=np.sin(x**2+y**2)

fig1=plt.figure()
fig_surf=fig1.add_subplot(projection='3d')
h=fig_surf.plot_surface(x,y,z, cmap='jet')
fig_surf.set_xlabel('x')
fig_surf.set_ylabel('y')
fig_surf.set_zlabel('z')
```



# PCOLORMESH

pcolormesh_plot.py

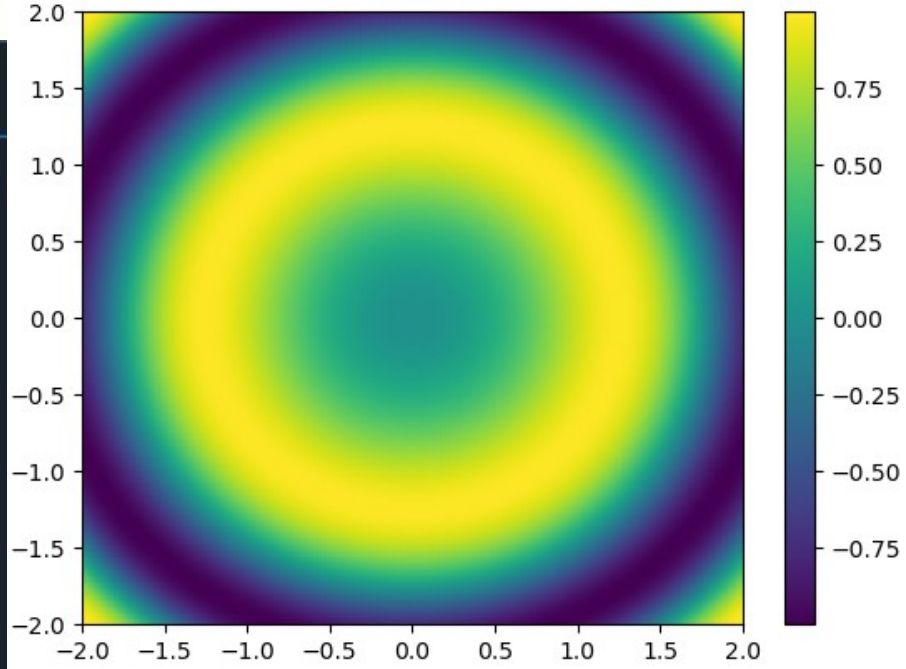
```python
import matplotlib.pyplot as plt
import numpy as np

x=np.linspace(-2, 2, 100)
y=np.linspace(-2, 2, 100)

x,y=np.meshgrid(x,y)

z=np.sin(x**2+y**2)

fig1=plt.figure()
plt.pcolormesh(x,y,z, shading='gouraud')
plt.colorbar()
```



# CONTOUR

contour_plot.py

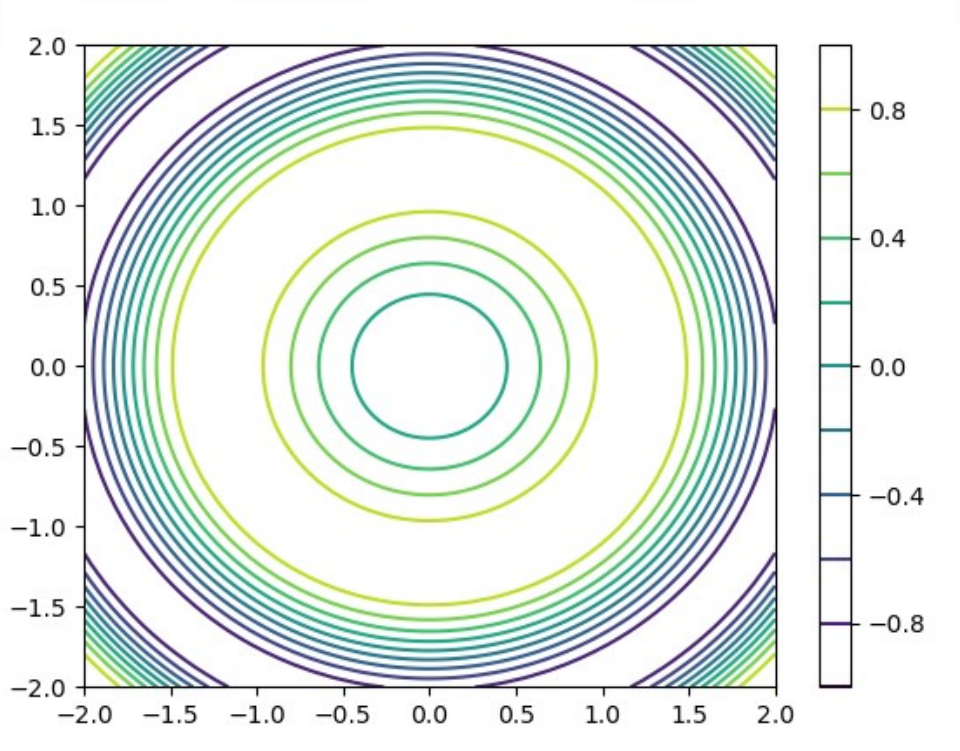
```python
import matplotlib.pyplot as plt
import numpy as np

x=np.linspace(-2, 2, 100)
y=np.linspace(-2, 2, 100)

x,y=np.meshgrid(x,y)

z=np.sin(x**2+y**2)

fig1=plt.figure()
plt.contour(x,y,z,10)
plt.colorbar()
```



# QUIVER

quiver_plot.py

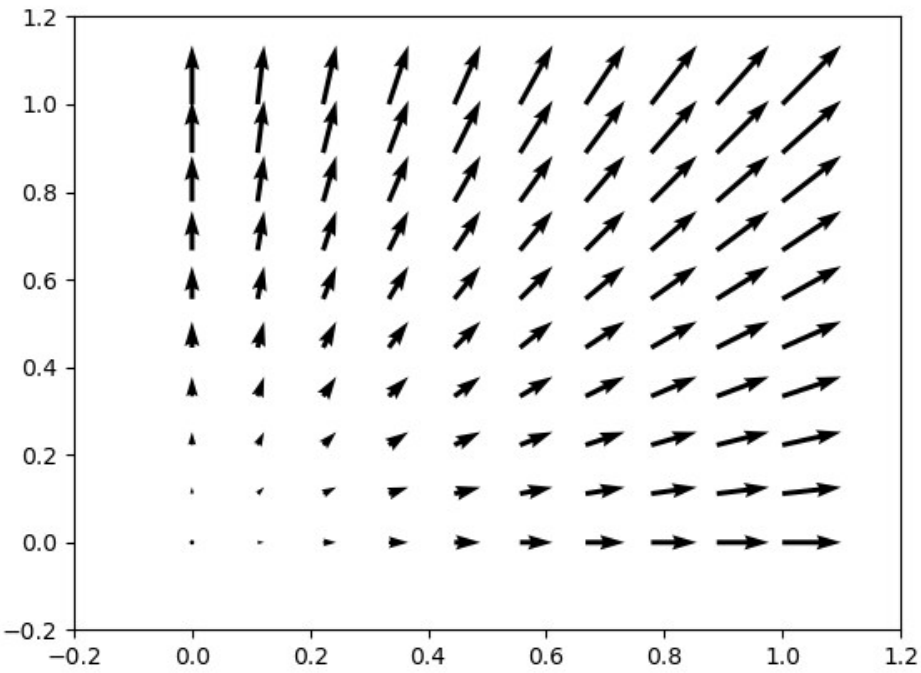
```python
import matplotlib.pyplot as plt
import numpy as np

x=np.linspace(0, 1, 10)
y=np.linspace(0, 1, 10)

x,y=np.meshgrid(x,y)

Ex=x
Ey=y

fig1=plt.figure()
plt.quiver(x,y,Ex,Ey)
plt.xlim(-0.2,1.2)
plt.ylim(-0.2,1.2)
plt.xlabel('x')
plt.ylabel('y')
```



# Подешавања

quiver_plot.py

```python
import matplotlib.pyplot as plt
import numpy as np

x=np.linspace(0, 1, 10)
y=np.linspace(0, 1, 10)

x,y=np.meshgrid(x,y)

Ex=x
Ey=y

fig1=plt.figure()
plt.quiver(x,y,Ex,Ey)
plt.xlim(-0.2,1.2)
plt.ylim(-0.2,1.2)
plt.xlabel('x')
plt.ylabel('y')

plt.title('Naslov')
plt.gca().set_aspect('equal', adjustable='box')

E=(Ex**2+Ey**2)**0.5

plt.quiver(x,y,Ex,Ey,E)
plt.colorbar()
plt.grid()
```