

Test assignment

Code snippet

```
print("Hello World!")
```

Hello World!

venv libraries check

```
import numpy as np  
from mip import *
```

Mip test

Class example

```
m = Model()  
x = [m.add_var(lb = 0) for i in range(2)]  
A = [  
    [5, 10],  
    [4, 4]  
]  
b = [60, 40]  
c = [6, 8]
```

```

for j in range(2):
    m += xsum(A[j][i] * x[i] for i in range(2)) <= b[j]

m.objective = maximize(xsum(c[i] * x[i] for i in range(2)))

m.optimize()

solution = list(map(lambda y: y.x, x))
print(f"x: {solution}")

```

Welcome to the CBC MILP Solver
 Version: Trunk
 Build Date: Oct 24 2021

Starting solution of the Linear programming problem using Primal Simplex

x: [8.0, 2.0]

Plotting

```

import matplotlib.pyplot as plt

X = np.array([0, min((b[j] / A[j][0] if A[j][0] != 0 else float('inf')) for j in range(2))])
Y1 = (b[0] - A[0][0] * X) / A[0][1] # constraint 1
Y2 = (b[1] - A[1][0] * X) / A[1][1] # constraint 2

plt.figure()

plt.fill_between(X, 0, Y1, color='skyblue', alpha=0.3, label='constraint 1')
plt.fill_between(X, 0, Y2, color='lightgreen', alpha=0.3, label='constraint 2')

plt.plot(X, Y1, color='blue')
plt.plot(X, Y2, color='green')

plt.scatter(solution[0], solution[1])

```

