

MOOS - Laboratorio 0

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Proceso de Instalación

```
## Package Plan ##

environment location: C:\Users\santi\anaconda3\envs\pynomo_env

added / updated specs:
- python=3.9

The following NEW packages will be INSTALLED:

ca-certificates      pkgs/main/win-64::ca-certificates-2024.12.31-haa95532_0
openssl              pkgs/main/win-64::openssl-3.0.15-h827c3e9_0
pip                  pkgs/main/win-64::pip-24.2-py39haa95532_0
python               pkgs/main/win-64::python-3.9.21-h8205438_1
setuptools           pkgs/main/win-64::setuptools-75.1.0-py39haa95532_0
sqlite               pkgs/main/win-64::sqlite-3.45.3-h2bbff1b_0
tzdata               pkgs/main/noarch::tzdata-2025a-h04d1e81_0
vc                   pkgs/main/win-64::vc-14.40-haa95532_2
vs2015_runtime       pkgs/main/win-64::vs2015_runtime-14.42.34433-h9531ae6_2
wheel                pkgs/main/win-64::wheel-0.44.0-py39haa95532_0

Proceed ([y]/n)? y
```

Downloading and Extracting Packages:

Preparing transaction: done

Executing transaction: done

#

To activate this environment, use

#

\$ conda activate pynomo_env

#

To deactivate an active environment, use

#

\$ conda deactivate

(base) C:\Users\santi>conda activate pynomo_env

(pynomo_env) C:\Users\santi>conda install -c conda-forge pyomo

Channels:

- conda-forge
- defaults

Platform: win-64

Collecting package metadata (repodata.json): done

Solving environment: done

Package Plan

environment location: C:\Users\santi\anaconda3\envs\pynomo_env

added / updated specs:

- pyomo

The following packages will be downloaded:

package	build		
-----	-----		
openssl-3.4.0	ha4e3fda_1	8.1 MB	conda-forge
ply-3.11	pyhd8ed1ab_3	48 KB	conda-forge
pyomo-6.8.2	py39ha51f57c_1	5.9 MB	conda-forge
python_abi-3.9	2_cp39	4 KB	conda-forge
ucrt-10.0.22621.0	h57928b3_1	547 KB	conda-forge
vc14_runtime-14.42.34433	h6356254_24	736 KB	conda-forge
vs2015_runtime-14.42.34433	hfef2bbc_24	17 KB	conda-forge
-----	-----		
Total:		15.3 MB	

The following NEW packages will be INSTALLED:

ply	conda-forge/noarch::ply-3.11-pyhd8ed1ab_3
pyomo	conda-forge/win-64::pyomo-6.8.2-py39ha51f57c_1
python_abi	conda-forge/win-64::python_abi-3.9-2_cp39
ucrt	conda-forge/win-64::ucrt-10.0.22621.0-h57928b3_1
vc14_runtime	conda-forge/win-64::vc14_runtime-14.42.34433-h6356254_24

The following packages will be UPDATED:

openssl	pkgs/main::openssl-3.0.15-h827c3e9_0 --> conda-forge::openssl-3.4.0-ha4e3fda_1
vs2015_runtime	pkgs/main::vs2015_runtime-14.42.34433~ --> conda-forge::vs2015_runtime-14.42.34433-hfef2bbc_24

Proceed ([y]/n)? y

Downloading and Extracting Packages:

Preparing transaction: done
Executing transaction: done

```
(pynomo_env) C:\Users\santi>conda install -c conda-forge glpk ipopt
```

```
Channels:
```

- conda-forge
- defaults

```
Platform: win-64
```

```
Collecting package metadata (repodata.json): done
```

```
Solving environment: done
```

```
## Package Plan ##
```

```
environment location: C:\Users\santi\anaconda3\envs\pynomo_env
```

```
added / updated specs:
```

- glpk
- ipopt

```
The following packages will be downloaded:
```

package	build		
ampl-asl-1.0.0	he0c23c2_2	399 KB	conda-forge
glpk-5.0	h8ffe710_0	3.3 MB	conda-forge
intel-openmp-2024.2.1	h57928b3_1083	1.8 MB	conda-forge
ipopt-3.14.17	h905d1ba_0	921 KB	conda-forge
libblas-3.9.0	26_win64_mkl	3.6 MB	conda-forge
libflang-5.0.0	h6538335_20180525	519 KB	conda-forge
libhwloc-2.11.2	default_ha69328c_1001	2.3 MB	conda-forge
libiconv-1.17	hcfcfb64_2	621 KB	conda-forge
liblapack-3.9.0	26_win64_mkl	3.6 MB	conda-forge
libwinpthread-12.0.0.r4.gg4f2fc60ca	h57928b3_9	35 KB	conda-forg

e

libxml2-2.13.5	he286e8c_1	1.5 MB	conda-forge
libzlib-1.3.1	h2466b09_2	54 KB	conda-forge
llvm-meta-5.0.0	0	3 KB	conda-forge
mk1-2024.2.2	h66d3029_15	98.3 MB	conda-forge
mumps-seq-5.7.3	h7c2359a_6	2.9 MB	conda-forge
openmp-5.0.0	vc14_1	577 KB	conda-forge
tbb-2021.13.0	h62715c5_1	148 KB	conda-forge

Total:		120.5 MB	

The following NEW packages will be INSTALLED:

ampl-as1	conda-forge/win-64::ampl-as1-1.0.0-he0c23c2_2
glpk	conda-forge/win-64::glpk-5.0-h8ffe710_0
intel-openmp	conda-forge/win-64::intel-openmp-2024.2.1-h57928b3_1083
ipopt	conda-forge/win-64::ipopt-3.14.17-h905d1ba_0
libblas	conda-forge/win-64::libblas-3.9.0-26_win64_mkl
libflang	conda-forge/win-64::libflang-5.0.0-h6538335_20180525
libhwloc	conda-forge/win-64::libhwloc-2.11.2-default_ha69328c_1001
libiconv	conda-forge/win-64::libiconv-1.17-hcfcfb64_2
liblapack	conda-forge/win-64::liblapack-3.9.0-26_win64_mkl
libwinpthread	conda-forge/win-64::libwinpthread-12.0.0.r4.gg4f2fc60ca-h57928b3_9
libxml2	conda-forge/win-64::libxml2-2.13.5-he286e8c_1
libzlib	conda-forge/win-64::libzlib-1.3.1-h2466b09_2
llvm-meta	conda-forge/noarch::llvm-meta-5.0.0-0
mk1	conda-forge/win-64::mk1-2024.2.2-h66d3029_15
mumps-seq	conda-forge/win-64::mumps-seq-5.7.3-h7c2359a_6
openmp	conda-forge/win-64::openmp-5.0.0-vc14_1
tbb	conda-forge/win-64::tbb-2021.13.0-h62715c5_1

Proceed ([y]/n)? y

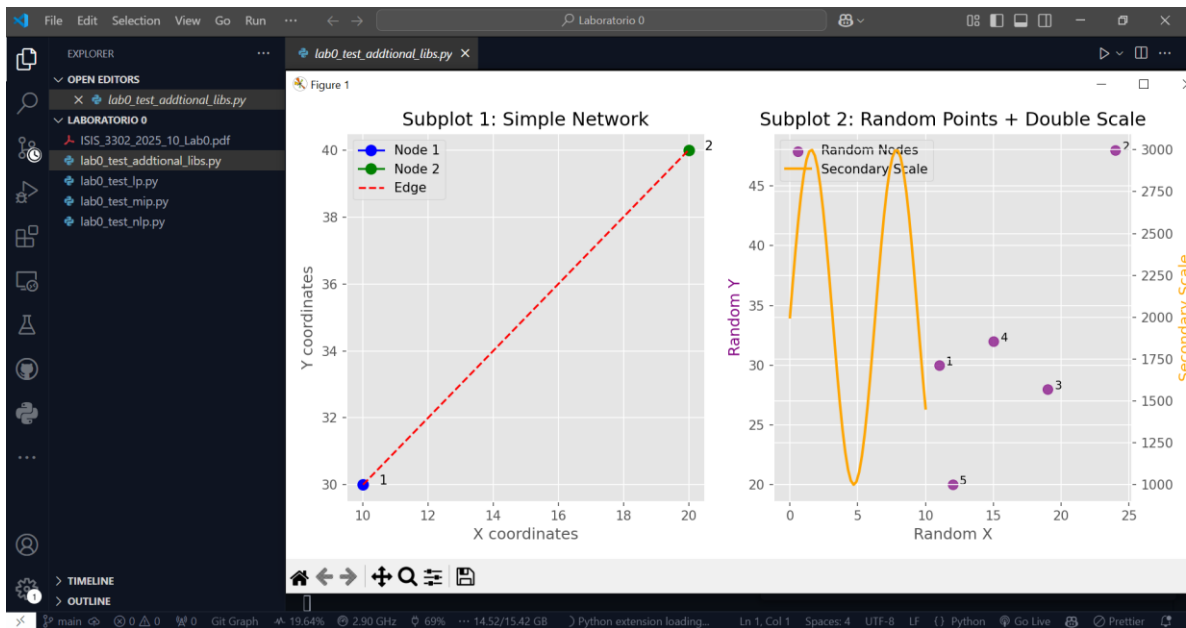
Downloading and Extracting Packages:

Preparing transaction: done

Executing transaction: done

Ejecución de Archivos

Lab0_tests_additional_libs.py



Lab0_tests_lp.py

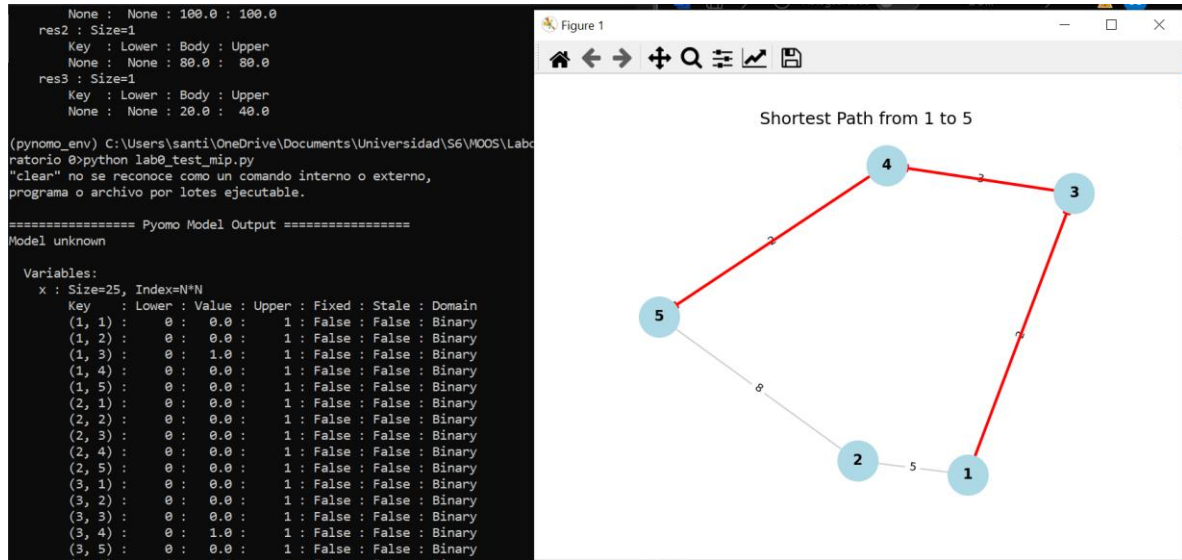
```
(pynomo_env) C:\Users\santi\OneDrive\Documents\Universidad\S6\MOOS\Laboratorios\Labo
ratorio 0>python lab0_test_lp.py
Model unknown

Variables:
  x : Size=2, Index={1, 2}
    Key : Lower : Value : Upper : Fixed : Stale : Domain
    1 :    0 : 20.0 : None : False : False : NonNegativeReals
    2 :    0 : 60.0 : None : False : False : NonNegativeReals

Objectives:
  obj : Size=1, Index=None, Active=True
    Key : Active : Value
    None : True : 180.0

Constraints:
  res1 : Size=1
    Key : Lower : Body : Upper
    None : None : 100.0 : 100.0
  res2 : Size=1
    Key : Lower : Body : Upper
    None : None : 80.0 : 80.0
  res3 : Size=1
    Key : Lower : Body : Upper
    None : None : 20.0 : 40.0
```

Lab0_tests_mip.py



Lab0_tests_nlp.py

```

(pynomo_env) C:\Users\santi\OneDrive\Documents\Universidad\S6\MOOS\Laboratorios\Laboratorio 0>python lab0_test_nlp.py
Model unknown

Variables:
x : Size=1, Index=None
Key : Lower : Value : Upper : Fixed : Stale : Domain
None : 0 : 5.332625897989843 : None : False : False : PositiveReals
y : Size=1, Index=None
Key : Lower : Value : Upper : Fixed : Stale : Domain
None : 0 : 4.5369430173199055 : None : False : False : PositiveReals

Objectives:
g : Size=1, Index=None, Active=True
Key : Active : Value
None : True : 2540.1450233862192

Constraints:
None

Optimal location (x, y) = (5.3326, 4.5369)
Objective value (min sum of weighted distances): 2540.1450

```