```
!pip install lazypredict==0.2.3
```

```
Requirement already satisfied: lazypredict==0.2.3 in /usr/local/lib/python3.10/dist-packages (0.2.3)
Requirement already satisfied: Click>=7.0 in /usr/local/lib/python3.10/dist-packages (from lazypredict==0.2.3) (8.1.7)
```

```
!pip install scikit-learn==0.23.1
```

```
Collecting scikit-learn==0.23.1
  Downloading scikit-learn-0.23.1.tar.gz (7.2 MB)
     ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ 7.2/7.2 MB 43.0 MB/s eta 0:00:00
  error: subprocess-exited-with-error

  × pip subprocess to install build dependencies did not run successfully.
  │ exit code: 1
  ╰─> See above for output.

  note: This error originates from a subprocess, and is likely not a problem with pip.
  Installing build dependencies ... error
error: subprocess-exited-with-error

× pip subprocess to install build dependencies did not run successfully.
│ exit code: 1
╰─> See above for output.

note: This error originates from a subprocess, and is likely not a problem with pip.
```

```
#!pip install scikit-learn --upgrade
```

```
from lazypredict.Supervised import LazyClassifier, LazyRegressor
```

```
---------------------------------------------------------------------------
ModuleNotFoundError                       Traceback (most recent call last)
<ipython-input-7-da9f369c38f6> in <cell line: 1>()
----> 1 from lazypredict.Supervised import LazyClassifier, LazyRegressor

/usr/local/lib/python3.10/dist-packages/lazypredict/Supervised.py in <module>
     12 from sklearn.preprocessing import StandardScaler, OneHotEncoder
     13 from sklearn.compose import ColumnTransformer
---> 14 from sklearn.utils.testing import all_estimators
     15 from sklearn.base import RegressorMixin
     16 from sklearn.base import ClassifierMixin

ModuleNotFoundError: No module named 'sklearn.utils.testing'

---------------------------------------------------------------------------
NOTE: If your import is failing due to a missing package, you can
manually install dependencies using either !pip or !apt.

To view examples of installing some common dependencies, click the
"Open Examples" button below.
---------------------------------------------------------------------------
```

OPEN EXAMPLES

Next steps: Explain error

```
from sklearn.model_selection import train_test_split
```

```
from sklearn import datasets
```

```
import pandas as pd
```

```
Start coding or generate with AI.
```

```
Start coding or generate with AI.
```

```
Start coding or generate with AI.
```

pycaret

```
pip install pycaret
```

```
Downloading wurlitzer-3.1.1-py3-none-any.whl (8.6 kB)
Downloading xxhash-3.5.0-cp310-cp310-manylinux_2_17_x86_64.manylinux2014_x86_64.whl (194 kB)
   ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ 194.1/194.1 kB 10.5 MB/s eta 0:00:00
Downloading dash-2.18.1-py3-none-any.whl (7.5 MB)
   ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ 7.5/7.5 MB 25.3 MB/s eta 0:00:00
Downloading dash_core_components-2.0.0-py3-none-any.whl (3.8 kB)
Downloading dash_html_components-2.0.0-py3-none-any.whl (4.1 kB)
Downloading dash_table-5.0.0-py3-none-any.whl (3.9 kB)
Using cached jedi-0.19.1-py2.py3-none-any.whl (1.6 MB)
Downloading orjson-3.10.7-cp310-cp310-manylinux_2_17_x86_64.manylinux2014_x86_64.whl (141 kB)
   ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ 141.9/141.9 kB 10.2 MB/s eta 0:00:00
Downloading scikit_base-0.7.8-py3-none-any.whl (130 kB)
   ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ 130.1/130.1 kB 11.6 MB/s eta 0:00:00
Downloading tsdownsample-0.1.3-cp310-cp310-manylinux_2_17_x86_64.manylinux2014_x86_64.whl (2.1 MB)
   ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ 2.1/2.1 MB 33.6 MB/s eta 0:00:00
Downloading retrying-1.3.4-py3-none-any.whl (11 kB)
Building wheels for collected packages: pyod
  Building wheel for pyod (setup.py) ... done
  Created wheel for pyod: filename=pyod-2.0.2-py3-none-any.whl size=198469 sha256=e5c67e65e85433316ec635280efe88dfdb58946363895b0c4758b14ae9b1fe4c
  Stored in directory: /root/.cache/pip/wheels/77/c2/20/34d1f15b41b701ba69f42a3230482581Od680754d509f91391
Successfully built pyod
Installing collected packages: kaleido, dash-table, dash-html-components, dash-core-components, xxhash, wurlitzer, tsdownsample, scipy, scikit-base, sche
  Attempting uninstall: scipy
    Found existing installation: scipy 1.13.1
    Uninstalling scipy-1.13.1:
      Successfully uninstalled scipy-1.13.1
  Attempting uninstall: joblib
    Found existing installation: joblib 1.4.2
    Uninstalling joblib-1.4.2:
      Successfully uninstalled joblib-1.4.2
  Attempting uninstall: scikit-learn
    Found existing installation: scikit-learn 1.5.2
    Uninstalling scikit-learn-1.5.2:
      Successfully uninstalled scikit-learn-1.5.2
  Attempting uninstall: pandas
    Found existing installation: pandas 2.2.2
    Uninstalling pandas-2.2.2:
      Successfully uninstalled pandas-2.2.2
ERROR: pip's dependency resolver does not currently take into account all the packages that are installed. This behaviour is the source of the following
google-colab 1.0.0 requires pandas==2.2.2, but you have pandas 2.1.4 which is incompatible.
Successfully installed category-encoders-2.6.4 dash-2.18.1 dash-core-components-2.0.0 dash-html-components-2.0.0 dash-table-5.0.0 deprecation-2.1.0 jedi-
```

```
import pandas as pd
from pycaret.classification import *

# Cargar datos
data = pd.read_csv('/content/drive/MyDrive/suplyChain/DataCoSupplyChainDataset/DataCoSupplyChainDataset.csv', encoding='latin1')
```

```
# filtramos el set de datos original por país para abarcar solo argentina, brasil y mexico
data = data[data['Order Country'].isin(['Argentina', 'Brasil', 'Mexico'])]
```

```
# Configurar el entorno
clf = setup(data=data, target='Type')
```

	Description	Value
0	Session id	2774
1	Target	Type
2	Target type	Multiclass
3	Target mapping	CASH: 0, DEBIT: 1, PAYMENT: 2, TRANSFER: 3
4	Original data shape	(9918, 53)
5	Transformed data shape	(9918, 72)
6	Transformed train set shape	(6942, 72)
7	Transformed test set shape	(2976, 72)
8	Numeric features	29
9	Categorical features	23
10	Rows with missing values	100.0%
11	Preprocess	True
12	Imputation type	simple
13	Numeric imputation	mean
14	Categorical imputation	mode
15	Maximum one-hot encoding	25
16	Encoding method	None
17	Fold Generator	StratifiedKFold
18	Fold Number	10
19	CPU Jobs	-1
20	Use GPU	False
21	Log Experiment	False
22	Experiment Name	clf-default-name
23	USI	0b42

```
# Comparar modelos
best_model = compare_models()
```

	Model	Accuracy	AUC	Recall	Prec.	F1	Kappa	MCC	TT (Sec)
ridge	Ridge Classifier	1.0000	0.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.8010
qda	Quadratic Discriminant Analysis	1.0000	0.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.5800
et	Extra Trees Classifier	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.5990
rf	Random Forest Classifier	0.9689	1.0000	0.9689	0.9730	0.9693	0.9565	0.9577	1.6150
gbc	Gradient Boosting Classifier	0.9532	0.0000	0.9532	0.9586	0.9524	0.9342	0.9372	13.3290
lightgbm	Light Gradient Boosting Machine	0.9362	0.9995	0.9362	0.9458	0.9359	0.9103	0.9141	4.6210
xgboost	Extreme Gradient Boosting	0.9359	0.9990	0.9359	0.9455	0.9356	0.9093	0.9138	1.3790
ada	Ada Boost Classifier	0.8778	0.0000	0.8778	0.9194	0.8846	0.8313	0.8438	1.6640
dt	Decision Tree Classifier	0.8740	0.9174	0.8740	0.9178	0.8814	0.8259	0.8389	0.6810
lda	Linear Discriminant Analysis	0.8721	0.0000	0.8721	0.9150	0.8795	0.8232	0.8357	0.5910
knn	K Neighbors Classifier	0.5509	0.7920	0.5509	0.5528	0.5496	0.3710	0.3721	0.9500
nb	Naive Bayes	0.4199	0.7025	0.4199	0.4245	0.3622	0.1350	0.1575	0.5590
dummy	Dummy Classifier	0.3682	0.5000	0.3682	0.1356	0.1982	0.0000	0.0000	0.5450
lr	Logistic Regression	0.3678	0.0000	0.3678	0.2843	0.2050	0.0014	0.0075	3.9200
svm	SVM - Linear Kernel	0.2842	0.0000	0.2842	0.2401	0.2034	0.0032	0.0033	1.5980

```
# Afinar el modelo
tuned_model = tune_model(best_model)
```

Fold	Accuracy	AUC	Recall	Prec.	F1	Kappa	MCC
0	1.0000	0.0000	1.0000	1.0000	1.0000	1.0000	1.0000
1	1.0000	0.0000	1.0000	1.0000	1.0000	1.0000	1.0000
2	1.0000	0.0000	1.0000	1.0000	1.0000	1.0000	1.0000
3	1.0000	0.0000	1.0000	1.0000	1.0000	1.0000	1.0000
4	1.0000	0.0000	1.0000	1.0000	1.0000	1.0000	1.0000
5	1.0000	0.0000	1.0000	1.0000	1.0000	1.0000	1.0000
6	1.0000	0.0000	1.0000	1.0000	1.0000	1.0000	1.0000
7	1.0000	0.0000	1.0000	1.0000	1.0000	1.0000	1.0000
8	1.0000	0.0000	1.0000	1.0000	1.0000	1.0000	1.0000
9	1.0000	0.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Mean	1.0000	0.0000	1.0000	1.0000	1.0000	1.0000	1.0000