

The screenshot displays a Google Colab notebook environment. The browser's address bar shows the URL `colab.research.google.com/#scrollTo=VL1zPDwIBhMF`. The notebook interface includes a top menu bar with options like 'File', 'Edit', 'View', 'Insert', 'Runtime', 'Tools', and 'Help'. A left sidebar contains a 'Table of contents' panel with a 'Featured examples' section highlighted. The main workspace shows a code cell with the following Python code:

```
[1] data = [
    ['Sunny', 'Warm', 'Normal', 'Strong', 'Warm', 'Same', 'Yes'],
    ['Sunny', 'Warm', 'High', 'Strong', 'Warm', 'Same', 'Yes'],
    ['Rainy', 'Cold', 'High', 'Strong', 'Warm', 'Change', 'No'],
    ['Sunny', 'Warm', 'High', 'Strong', 'Cool', 'Change', 'Yes']
]

hypothesis = ['?'] * (len(data[0]) - 1)

for row in data:
    if row[-1] == 'Yes':
        for i in range(len(hypothesis)):
            if hypothesis[i] == '?':
                hypothesis[i] = row[i]
            elif hypothesis[i] != row[i]:
                hypothesis[i] = '?'

print("Most Specific Hypothesis:", hypothesis)
```

The output of the code cell is displayed below the code, showing the result of the hypothesis generation process:

```
... Most Specific Hypothesis: ['Sunny', 'Warm', 'High', 'Strong', '?', '?']
```

colab.research.google.com/#scrollTo=SsitF0BiBmxY

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```
specific_h = concepts[0].copy()
general_h = [['?' for _ in range(len(specific_h))] for _ in range(len(specific_h))]

for i, val in enumerate(target):
    if val == "Yes":
        for x in range(len(specific_h)):
            if concepts[i][x] != specific_h[x]:
                specific_h[x] = '?'
                general_h[x][x] = '?'
    else:
        for x in range(len(specific_h)):
            if concepts[i][x] != specific_h[x]:
                general_h[x][x] = specific_h[x]
            else:
                general_h[x][x] = '?'
return specific_h, general_h

s, g = train(concepts, target)
print("Specific:", s)
print("General:", g)
```

Specific: ['Sunny' 'Warm' '?' 'Strong' 'Warm' 'Same']  
General: [['?', '?', '?', '?', '?', '?'], ['?', '?', '?', '?', '?', '?'], ['?', '?', '?', '?', '?', '?'], ['?'

Variables Terminal

7:48 PM Python 3

Gold +1.33%

Windows Taskbar

ENG IN 19:48 26-12-2025

The screenshot displays a Google Colab notebook interface. The browser address bar shows the URL: `colab.research.google.com/#scrollTo=k83rEBieBt1O`. The notebook header includes the Google Colab logo, the text "Welcome To Colab", and a warning "Cannot save changes". Below the header is a menu bar with options: File, Edit, View, Insert, Runtime, Tools, and Help. A search bar labeled "Commands" is present, along with buttons for "+ Code", "+ Text", "Run all", and "Copy to Drive". On the right side of the header, there are settings icons, a "Share" button, and a user profile icon labeled "M".

The left sidebar contains a "Table of contents" panel with the following items: "Welcome to Colab!", "Google Colab is available in V...", "Free Pro Plan for Gemini &...", "Access popular AI model...", "Explore the Gemini API", "Getting started", "Data science", "Machine learning", "More Resources", and "Featured examples". A "+ Section" button is at the bottom of the sidebar.

The main notebook area shows a Python code cell with the following code:

```
[3] ✓ 6s
from sklearn.datasets import load_iris
from sklearn.tree import DecisionTreeClassifier

iris = load_iris()
X, y = iris.data, iris.target

model = DecisionTreeClassifier().fit(X, y)

prediction = iris.target_names[model.predict([[5.1, 3.5, 1.4, 0.2]])[0]]
print("Predicted Class:", prediction)
```

Below the code cell, the output is displayed:

```
... Predicted Class: setosa
```

The bottom status bar shows "Variables", "Terminal", a blue star icon, the time "7:50 PM", and the Python version "Python 3". The Windows taskbar at the very bottom shows the date "26-12-2023", the time "19:51", and various system icons including network, volume, and battery.

Irish classification using KNN

ITA06-ML List of Experiments

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[4] ✓ 3s

from sklearn.neural\_network import MLPClassifier

X = [[0,0],[0,1],[1,0],[1,1]]

y = [0,1,1,0] # XOR problem

model = MLPClassifier(hidden\_layer\_sizes=(4,), max\_iter=2000)

model.fit(X, y)

print("Prediction for [1,1]:", model.predict([[1,1]]))

... Prediction for [1,1]: 0

/usr/local/lib/python3.12/dist-packages/sklearn/neural\_network/\_multilayer\_perceptron.py:691: ConvergenceWarning: warnings.warn()

Variables Terminal

7:52 PM Python 3

26°C Partly cloudy

ENG IN

19:53 26-12-2025

Iris classification using KNN x ITA06-ML List of Experiments x Welcome To Colab - Colab x +

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```
[5] from sklearn.datasets import load_iris
    from sklearn.neighbors import KNeighborsClassifier

iris = load_iris()
X, y = iris.data, iris.target

model = KNeighborsClassifier(n_neighbors=3).fit(X, y)

print("Prediction:", iris.target_names[model.predict([[5.1, 3.5, 1.4, 0.2]])[0]])
```

... Prediction: setosa

Variables Terminal

7:53 PM Python 3

26°C Partly cloudy

ENG IN 19:53 26-12-2025

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[5] ✓ Cts

```
from sklearn.datasets import load_iris
from sklearn.model_selection import train_test_split
from sklearn.naive_bayes import GaussianNB
from sklearn.metrics import confusion_matrix, accuracy_score

iris = load_iris()
X, y = iris.data, iris.target

X_train, X_test, y_train, y_test = train_test_split(X, y, test_size=0.3)

model = GaussianNB().fit(X_train, y_train)
pred = model.predict(X_test)

print("Confusion Matrix:\n", confusion_matrix(y_test, pred))
print("Accuracy:", accuracy_score(y_test, pred))
```

... Confusion Matrix:
[[12 0 0]
 [ 0 15 0]
 [ 0 1 17]]
Accuracy: 0.9777777777777777

Variables Terminal

26°C Partly cloudy

7:54 PM Python 3

ENG IN

19:55 26-12-2025

The screenshot displays the Google Colab web interface. At the top, the browser tabs and address bar are visible. The Colab header includes the 'Welcome To Colab' message and a 'Cannot save changes' warning. The left sidebar features a 'Table of contents' panel with various links. The main code editor shows a Python script using 'sklearn.linear\_model import LogisticRegression' to fit a model on data X and y, and print the prediction for a new input. The output below the code shows '... Prediction: Good'. The bottom status bar indicates 'Variables', 'Terminal', '7:55 PM', and 'Python 3'.



The screenshot displays a Google Colab notebook environment. The browser tabs at the top include 'Iris classification using KNN', 'ITA06-ML List of Experiments', and 'Welcome To Colab - Colab'. The address bar shows the URL 'colab.research.google.com/#scrollTo=vALp095kDTdA'. The Colab interface features a 'Welcome To Colab' header with a 'Cannot save changes' warning, a menu bar (File, Edit, View, Insert, Runtime, Tools, Help), and a toolbar with 'Commands', '+ Code', '+ Text', 'Run all', and 'Copy to Drive'. On the left is a 'Table of contents' sidebar with links like 'Welcome to Colab!', 'Google Colab is available in V...', 'Free Pro Plan for Gemini &...', 'Access popular AI model...', 'Explore the Gemini API', 'Getting started', 'Data science', 'Machine learning', 'More Resources', and 'Featured examples'. The main code editor shows a Python script for linear regression using sklearn: 'from sklearn.linear\_model import LinearRegression', 'X = [[1],[2],[3],[4],[5]]', 'y = [2,4,5,8,10]', 'model = LinearRegression()', 'model.fit(X, y)', and 'print("Prediction for 6:", model.predict([[6]])[0])'. Below the code, the output is displayed: '... Prediction for 6: 12.0'. The bottom status bar shows 'Variables', 'Terminal', '7:56 PM', and 'Python 3'.



colab.research.google.com/#scrollTo=viQJEFH7DZiJ

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Run cell (Ctrl+Enter)

cell executed since last change

executed at 7:56 PM (0 minutes ago)

executed in 0.02s

```
from sklearn.linear_model import LinearRegression
from sklearn.preprocessing import PolynomialFeatures

X = [[1],[2],[3],[4],[5]]
y = [2,1,3,1,2] # non-linear

# Linear Regression
lin = LinearRegression().fit(X, y)
print("Linear Prediction (6):", lin.predict([[6]])[0])

# Polynomial Regression
poly = PolynomialFeatures(degree=2)
X_poly = poly.fit_transform(X)
poly_model = LinearRegression().fit(X_poly, y)

print("Polynomial Prediction (6):", poly_model.predict(poly.transform([[6]])[0]))
```

... Linear Prediction (6): 36.0  
Polynomial Prediction (6): 43.00000000000003

Variables Terminal

7:56 PM Python 3

26°C Partly cloudy

ENG IN 19:56 26-12-2025

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[10]

✓ Cb

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```
from sklearn.mixture import GaussianMixture
import numpy as np

X = np.array([[1],[2],[1],[5],[6],[5]]) # simple data

gmm = GaussianMixture(n_components=2).fit(X)
labels = gmm.predict(X)

print("Cluster Labels:", labels)
|
```

▼ ... Cluster Labels: [1 1 1 0 0 0]

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📄 Variables

📄 Terminal

7:56 PM Python 3

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ENG IN 📶 🔊 🖨 19:56 26-12-2025

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Credit Score: Good

```
[12]  
✓ Os  
from sklearn.datasets import load_iris  
from sklearn.neighbors import KNeighborsClassifier  
  
iris = load_iris()  
X, y = iris.data, iris.target  
  
model = KNeighborsClassifier(n_neighbors=3).fit(X, y)  
  
print("Prediction:", iris.target_names[model.predict([[5.1, 3.5, 1.4, 0.2]])[0]])
```

... Prediction: setosa

Variables Terminal

26°C Partly cloudy

7:59 PM Python 3

ENG IN 19:59 26-12-2025

The screenshot displays a Google Colab notebook in a web browser. The browser's address bar shows the URL 'colab.research.google.com/#scrollTo=6RLFQx7Dy1E'. The Colab interface features a top menu bar with options like 'File', 'Edit', 'View', 'Insert', 'Runtime', 'Tools', and 'Help'. Below this is a toolbar with icons for 'Commands', 'Code', 'Text', 'Run all', and 'Copy to Drive'. On the left, a sidebar contains a 'Table of contents' panel and a 'Variables' panel. The main workspace shows a code cell with the following Python code:

```
from sklearn.linear_model import LogisticRegression

# [Income, Debt, Credit_History]
X = [[30,20,1],[25,40,0],[60,10,1],[45,30,1],[20,50,0]]
y = [1,0,1,1,0]

model = LogisticRegression().fit(X, y)

print("Credit Score:", "Good" if model.predict([[40,25,1]])[0] else "Bad")
```

The output of the code cell is displayed below the code, showing 'Credit Score: Good'. The bottom of the screen shows the Windows taskbar with various application icons and the system clock indicating 7:58 PM on 26-12-2023.

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ITA06-ML List of Experiments

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Prediction: setosa

[13] ✓ Os

```
from sklearn.linear_model import LinearRegression

# [Year, Mileage, Engine]
X = [[2015, 50000, 1.6], [2013, 60000, 1.2], [2018, 30000, 2.0], [2020, 20000, 1.8], [2012, 70000, 1.4]]
y = [550000, 350000, 850000, 900000, 280000]

model = LinearRegression().fit(X, y)

print("Predicted Price:", int(model.predict([[2017, 40000, 1.6]])[0]))
```

... Predicted Price: 640312

Variables

Terminal

8:05PM Python 3

26°C Partly cloudy

ENG IN

20:05 26-12-2025

Iris classification using KNN

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[15] ✓ Cb

```
from sklearn.datasets import load_iris
from sklearn.naive_bayes import GaussianNB

iris = load_iris()
X, y = iris.data, iris.target

model = GaussianNB().fit(X, y)

print("Prediction:", iris.target_names[model.predict([[5.1, 3.5, 1.4, 0.2]])[0]])
```

... Prediction: setosa

Variables

Terminal

8:06 PM Python 3

26°C Partly cloudy

ENG IN

20:06 26-12-2025

The screenshot shows a Google Colab notebook titled "Welcome To Colab - Colab". The notebook is open in a browser window with the URL "colab.research.google.com/#scrollTo=KoNtF8AIFm1j". The notebook interface includes a "Table of contents" on the left, a "Commands" bar at the top, and a "Share" button. The code cell contains the following Python code:

```
from sklearn.linear_model import LinearRegression

# [Area, Bedrooms, Age]
X = [[1000, 2, 10], [1500, 3, 5], [2000, 3, 2], [2500, 4, 1], [800, 2, 15], [1200, 3, 8]]
y = [3000000, 4500000, 6000000, 7500000, 2000000, 3500000]

model = LinearRegression().fit(X, y)

print("Predicted House Price:", int(model.predict([[1000, 3, 4]])[0]))
```

The output of the code cell shows the predicted price for a house with 1000 sq ft and 3 bedrooms as 5403294. The interface also includes a "Variables" section at the bottom left and a "Terminal" section at the bottom right.



←→↻colab.research.google.com/#scrollTo=ve\_TltFeF9hh

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[17] ✓ OS

▶ from sklearn.linear\_model import LinearRegression

# [RAM(GB), Storage(GB), Camera(MP)]

X = [[4,64,12],[6,128,48],[8,128,64],[4,32,8],[12,256,108]]

y = [12000,18000,25000,8000,50000]

model = LinearRegression().fit(X, y)

print("Predicted Mobile Price:", int(model.predict([[6,128,48]])[0]))

... Predicted Mobile Price: 18323

Variables Terminal

8:07PM Python 3

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```
[16] ✓ Os
from sklearn.neighbors import KNeighborsClassifier
from sklearn.naive_bayes import GaussianNB
from sklearn.tree import DecisionTreeClassifier
from sklearn.metrics import accuracy_score

iris = load_iris()
X, y = iris.data, iris.target
X_train, X_test, y_train, y_test = train_test_split(X, y, test_size=0.3)

models = {
    "KNN": KNeighborsClassifier(),
    "NaiveBayes": GaussianNB(),
    "DecisionTree": DecisionTreeClassifier()
}

for name, model in models.items():
    model.fit(X_train, y_train)
    pred = model.predict(X_test)
    print(name, "Accuracy:", accuracy_score(y_test, pred))

... KNN Accuracy: 0.9333333333333333
NaiveBayes Accuracy: 0.9555555555555556
DecisionTree Accuracy: 0.9333333333333333
```

Variables Terminal

8:07 PM Python 3

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[19] ✓ C

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```
from sklearn.naive_bayes import GaussianNB

# [Income, LoanAmount, CreditHistory]
X = [[50000,200000,1],[30000,150000,0],[70000,250000,1],[40000,100000,0]]
y = [1,0,1,0] # 1 = approved, 0 = rejected

model = GaussianNB().fit(X, y)

print("Loan Status:", "Approved" if model.predict([[60000,180000,1]])[0] else "Rejected")
```

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Loan Status: Approved

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✓ 8:08 PM

📄 Python 3

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[18] ✓ C

```
from sklearn.datasets import load_iris
from sklearn.linear_model import Perceptron

iris = load_iris()
X, y = iris.data, iris.target

model = Perceptron(max_iter=1000).fit(X, y)

print("Prediction:", iris.target_names[model.predict([[5.1, 3.5, 1.4, 0.2]])[0]])
```

... Prediction: versicolor

Variables Terminal

26°C Partly cloudy

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[10]✓ OS▶

```
from sklearn.linear_model import LinearRegression

# [Month_Number] → Sales
X = [[1],[2],[3],[4],[5],[6]]
y = [120,150,170,200,210,240]

model = LinearRegression().fit(X, y)

print("Predicted Sales for Month 7:", int(model.predict([[7]])[0]))
```

✓

... Predicted Sales for Month 7: 262

🔌 VariablesTerminal

📶 8:08 PM📄 Python 3

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