“ Which SuperHero are you?” predictor using logistic regression, where students input traits and the model predicts their superhero match.

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import numpy as np
import pandas as pd
from sklearn.model_selection import train_test_split
from sklearn.preprocessing import StandardScaler
from sklearn.linear_model import LogisticRegression
from sklearn.metrics import accuracy_score

# Define the superhero data
data = {
    'Superhero': ['Superman', 'Batman', 'Spider-Man', 'Wonder Woman', 'Hulk', 'Iron Man'],
    'Strength': [9, 5, 7, 8, 10, 6],
    'Intelligence': [8, 9, 7, 8, 4, 10],
    'Agility': [7, 6, 8, 7, 5, 6],
    'Humor': [4, 3, 8, 3, 2, 7],
    'Bravery': [9, 8, 7, 9, 8, 8],
    'Class': [0, 1, 2, 3, 4, 5]
}

df = pd.DataFrame(data)

# Features and target variable
X = df[['Strength', 'Intelligence', 'Agility', 'Humor', 'Bravery']]
y = df['Class']
```

```
# Split the data
X_train, X_test, y_train, y_test = train_test_split(X, y, test_size=0.2,
random_state=42)

# Scale the features
scaler = StandardScaler()
X_train_scaled = scaler.fit_transform(X_train)
X_test_scaled = scaler.transform(X_test)

# Train the model
model = LogisticRegression()
model.fit(X_train_scaled, y_train)

# Evaluate the model
y_pred = model.predict(X_test_scaled)
print(f"Accuracy: {accuracy_score(y_test, y_pred)}")

# Function to predict superhero based on traits
def predict_superhero(traits):
    if len(traits) != 5:
        raise ValueError("Input should be a list of 5 traits: [Strength, Intelligence,
Agility, Humor, Bravery]")

    # Create a DataFrame for the input traits with the same feature names
    traits_df = pd.DataFrame([traits], columns=['Strength', 'Intelligence', 'Agility',
'Humor', 'Bravery'])
```

```
    # Scale the input traits
    traits_scaled = scaler.transform(traits_df)

    # Predict the class
    predicted_class = model.predict(traits_scaled)[0]

    # Mapping class to superhero names
    superhero_map = {
        0: 'Superman',
        1: 'Batman',
        2: 'Spider-Man',
        3: 'Wonder Woman',
        4: 'Hulk',
        5: 'Iron Man'
    }

    return superhero_map[predicted_class]

# Get user input for superhero traits
user_traits = []
traits_names = ['Strength', 'Intelligence', 'Agility', 'Humor', 'Bravery']

for trait in traits_names:
    n = int(input(f"Enter your trait for {trait} (1-10): "))
    user_traits.append(n)
```

```
# Predict the superhero based on user traits
predicted_hero = predict_superhero(user_traits)
print(f"You are most like: {predicted_hero}")
```

OUTPUT: