[Day-36 2211cs020196]Write a Python program to perform text classification using a Naïve Bayes classifier (`MultinomialNB`) from Sklearn.naive_bayes`. Train the model using sample text data and predict the category of a given new text.Example input: ["I love programming", "Python is great", "Machine learning is amazing"]

In [3]:
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from sklearn.feature_extraction.text import CountVectorizer
from sklearn.naive_bayes import MultinomialNB
from sklearn.model_selection import train_test_split
documents = ["I love programming", "Python is great", "Machine learning is amazing",
             "I enjoy sports", "Football is fun", "Basketball is exciting"]
labels = ["tech", "tech", "tech", "sports", "sports", "sports"]
vectorizer = CountVectorizer()
X = vectorizer.fit_transform(documents)
X_train, X_test, y_train, y_test = train_test_split(X, labels, test_size=0.2, random_state=42)
classifier = MultinomialNB()
classifier.fit(X_train, y_train)
new_text = ["I love watching basketball"]
X_new = vectorizer.transform(new_text)
predicted_category = classifier.predict(X_new)
print(f"The predicted category for the new text '{new_text[0]}' is: {predicted_category[0]}")

```

```
The predicted category for the new text 'I love watching basketball' is: sports
```

In [ ]:
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