In [1]:
```
from sklearn.feature_extraction.text import CountVectorizer, TfidfVectorizer
documents = [
    "I love machine learning",
    "Machine learning is fun",
    "Deep learning is amazing"
]
count_vectorizer = CountVectorizer()
X_bow = count_vectorizer.fit_transform(documents)

print("Bag of Words (BoW) Representation:")
print(X_bow.toarray())
print("Feature Names:", count_vectorizer.get_feature_names_out())
print("\n")
tfidf_vectorizer = TfidfVectorizer()
X_tfidf = tfidf_vectorizer.fit_transform(documents)

print("TF-IDF Representation:")
print(X_tfidf.toarray())
print("Feature Names:", tfidf_vectorizer.get_feature_names_out())
```

```
Bag of Words (BoW) Representation:
[[0 0 0 0 1 1 1]
 [0 0 1 1 1 0 1]
 [1 1 0 1 1 0 0]]
Feature Names: ['amazing' 'deep' 'fun' 'is' 'learning' 'love' 'machine']


TF-IDF Representation:
[[0.         0.         0.         0.         0.42544054 0.72033345
  0.54783215]
 [0.         0.         0.63174505 0.4804584  0.37311881 0.
  0.4804584 ]
 [0.5844829  0.5844829  0.         0.44451431 0.34520502 0.
  0.        ]]
Feature Names: ['amazing' 'deep' 'fun' 'is' 'learning' 'love' 'machine']
```

In [ ]: