In [1]:
```python
# 1: Import Required Libraries

import pandas as pd
from sklearn.feature_extraction.text import TfidfVectorizer
from sklearn.metrics.pairwise import cosine_similarity
```

In [3]:
```python
# 2: Create the Dataset

data = pd.DataFrame({
    'id': [1, 2, 3, 4, 5],
    'description': [
        'Virat Kohli is a good cricketer and a sport person, he plays cricket we
        'Cricket is a famous sport in India and people likes to play it',
        'AI is changing the world and is now working as a human',
        'Natural Language Processing is an important module of AI',
        'AI is a very huge domain and it is the future'
    ]
})
```

In [4]:
```python
# 3: Vectorize Text using TF-IDF

# Convert descriptions into TF-IDF vectors
tfidf = TfidfVectorizer(stop_words='english')
tfidf_vectors = tfidf.fit_transform(data["description"])
```

In [5]:
```python
# 4: Compute Cosine Similarity Matrix

# Compute cosine similarity between all sentences
cosine_sim = cosine_similarity(tfidf_vectors, tfidf_vectors)
```

In [6]:
```python
# 5: Choose a Sentence to Recommend From

# Choose the sentence index to find recommendations for
recommend_from = 3  # 0-based index
```

In [7]:
```python
# 6: Get Similarity Scores and Sort

# Get similarity scores for the selected sentence
sim_scores = list(enumerate(cosine_sim[recommend_from]))

# Sort scores in descending order of similarity
sorted_scores = sorted(sim_scores, key=lambda x: x[1], reverse=True)
```

In [9]:
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# 7: Extract Top N Recommendations

# Top N recommendations (excluding the sentence itself)
top_n = 2
top_recommendations = sorted_scores[1:top_n + 1]  # skip self match at index 0
```

In [10]:
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# 8: Display Recommended Sentences

# Collect recommended sentences
recommended_sentences = []
for item in top_recommendations:
    index = item[0]
    recommended_sentences.append((index, data['description'][index]))
```

```
# Display as DataFrame
recommend_df = pd.DataFrame(recommended_sentences, columns=["Index", "Recommende
recommend_df
```

Out[10]:

	Index	Recommended Sentence
0	4	AI is a very huge domain and it is the future
1	2	AI is changing the world and is now working as...