In [1]:
```
import nltk
from nltk.corpus import stopwords
from nltk.cluster.util import cosine_distance
import numpy as np
import networkx as nx
```

In [2]:
```
def read_article(file_name):
    file = open(file_name, "r")
    filedata = file.readlines()
    article = filedata[0].split(". ")
    sentences = []

    for sentence in article:
        print(sentence)
        sentences.append(sentence.replace("[^a-zA-Z]", " ").split(" "))
    sentences.pop()

    return sentences
```

In [3]:
```
def sentence_similarity(sent1, sent2, stopwords=None):
    if stopwords is None:
        stopwords = []

    sent1 = [w.lower() for w in sent1]
    sent2 = [w.lower() for w in sent2]

    all_words = list(set(sent1 + sent2))

    vector1 = [0] * len(all_words)
    vector2 = [0] * len(all_words)

    # build the vector for the first sentence
    for w in sent1:
        if w in stopwords:
            continue
        vector1[all_words.index(w)] += 1

    # build the vector for the second sentence
    for w in sent2:
        if w in stopwords:
            continue
        vector2[all_words.index(w)] += 1

    return 1 - cosine_distance(vector1, vector2)
```

In [4]:
```
def build_similarity_matrix(sentences, stop_words):
    # Create an empty similarity matrix
    similarity_matrix = np.zeros((len(sentences), len(sentences)))

    for idx1 in range(len(sentences)):
        for idx2 in range(len(sentences)):
            if idx1 == idx2: #ignore if both are same sentences
                continue
            similarity_matrix[idx1][idx2] = sentence_similarity(sentences[idx1], se

    return similarity_matrix
```

In [6]:
```
def generate_summary(file_name, top_n=5):
    stop_words = stopwords.words('english')
    summarize_text = []
    # Step 1 - Read text and tokenize
    sentences =  read_article(file_name)
    # Step 2 - Generate Similary Martix across sentences
    sentence_similarity_martix = build_similarity_matrix(sentences, stop_words)
    # Step 3 - Rank sentences in similarity martix
    sentence_similarity_graph = nx.from_numpy_array(sentence_similarity_martix)
    scores = nx.pagerank(sentence_similarity_graph)
    # Step 4 - Sort the rank and pick top sentences
    ranked_sentence = sorted(((scores[i],s) for i,s in enumerate(sentences)), rever
    print("Indexes of top ranked_sentence order are ", ranked_sentence)
    for i in range(top_n):
        summarize_text.append(" ".join(ranked_sentence[i][1]))
    # Step 5 - Offcourse, output the summarize texr
    print("Summarize Text: \n", ". ".join(summarize_text))
```

In [7]:
```
generate_summary( "D:/DATA/msft.txt", 2)
```

In an attempt to build an AI-ready workforce, Microsoft announced Intelligent Clou d Hub which has been launched to empower the next generation of students with AI-r eady skills
Envisioned as a three-year collaborative program, Intelligent Cloud Hub will suppo rt around 100 institutions with AI infrastructure, course content and curriculum, developer support, development tools and give students access to cloud and AI serv ices
As part of the program, the Redmond giant which wants to expand its reach and is p lanning to build a strong developer ecosystem in India with the program will set u p the core AI infrastructure and IoT Hub for the selected campuses
The company will provide AI development tools and Azure AI services such as Micros oft Cognitive Services, Bot Services and Azure Machine Learning.According to Manis h Prakash, Country General Manager-PS, Health and Education, Microsoft India, sai d, "With AI being the defining technology of our time, it is transforming lives an d industry and the jobs of tomorrow will require a different skillset
This will require more collaborations and training and working with AI
Thatâ€™s why it has become more critical than ever for educational institutions to integrate new cloud and AI technologies
The program is an attempt to ramp up the institutional set-up and build capabiliti es among the educators to educate the workforce of tomorrow." The program aims to build up the cognitive skills and in-depth understanding of developing intelligent cloud connected solutions for applications across industry
Earlier in April this year, the company announced Microsoft Professional Program I n AI as a learning track open to the public
The program was developed to provide job ready skills to programmers who wanted to hone their skills in AI and data science with a series of online courses which fea tured hands-on labs and expert instructors as well
This program also included developer-focused AI school that provided a bunch of as sets to help build AI skills.
Indexes of top ranked_sentence order are [(0.15083257041122708, ['Envisioned', 'a s', 'a', 'three-year', 'collaborative', 'program,', 'Intelligent', 'Cloud', 'Hub', 'will', 'support', 'around', '100', 'institutions', 'with', 'AI', 'infrastructur e,', 'course', 'content', 'and', 'curriculum,', 'developer', 'support,', 'developm ent', 'tools', 'and', 'give', 'students', 'access', 'to', 'cloud', 'and', 'AI', 's ervices']), (0.13161201335715553, ['The', 'company', 'will', 'provide', 'AI', 'dev elopment', 'tools', 'and', 'Azure', 'AI', 'services', 'such', 'as', 'Microsoft', 'Cognitive', 'Services,', 'Bot', 'Services', 'and', 'Azure', 'Machine', 'Learning. According', 'to', 'Manish', 'Prakash,', 'Country', 'General', 'Manager-PS,', 'Heal th', 'and', 'Education,', 'Microsoft', 'India,', 'said,', '"With', 'AI', 'being', 'the', 'defining', 'technology', 'of', 'our', 'time,', 'it', 'is', 'transforming', 'lives', 'and', 'industry', 'and', 'the', 'jobs', 'of', 'tomorrow', 'will', 'requi re', 'a', 'different', 'skillset']), (0.11403047674961146, ['Earlier', 'in', 'Apri l', 'this', 'year,', 'the', 'company', 'announced', 'Microsoft', 'Professional', 'Program', 'In', 'AI', 'as', 'a', 'learning', 'track', 'open', 'to', 'the', 'publi c']), (0.10721749759953528, ['In', 'an', 'attempt', 'to', 'build', 'an', 'AI-read y', 'workforce,', 'Microsoft', 'announced', 'Intelligent', 'Cloud', 'Hub', 'whic h', 'has', 'been', 'launched', 'to', 'empower', 'the', 'next', 'generation', 'of', 'students', 'with', 'AI-ready', 'skills']), (0.10404298514456578, ['As', 'part', 'of', 'the', 'program,', 'the', 'Redmond', 'giant', 'which', 'wants', 'to', 'expan d', 'its', 'reach', 'and', 'is', 'planning', 'to', 'build', 'a', 'strong', 'develo per', 'ecosystem', 'in', 'India', 'with', 'the', 'program', 'will', 'set', 'up', 'the', 'core', 'AI', 'infrastructure', 'and', 'IoT', 'Hub', 'for', 'the', 'selecte d', 'campuses']), (0.10031366655994461, ['Thatâ€™s', 'why', 'it', 'has', 'become', 'more', 'critical', 'than', 'ever', 'for', 'educational', 'institutions', 'to', 'i ntegrate', 'new', 'cloud', 'and', 'AI', 'technologies']), (0.10001137283486655, ['The', 'program', 'is', 'an', 'attempt', 'to', 'ramp', 'up', 'the', 'institutiona l', 'set-up', 'and', 'build', 'capabilities', 'among', 'the', 'educators', 'to', 'educate', 'the', 'workforce', 'of', 'tomorrow."', 'The', 'program', 'aims', 'to', 'build', 'up', 'the', 'cognitive', 'skills', 'and', 'in-depth', 'understanding', 'of', 'developing', 'intelligent', 'cloud', 'connected', 'solutions', 'for', 'appl ications', 'across', 'industry']), (0.09916750119894317, ['This', 'will', 'requir

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e', 'more', 'collaborations', 'and', 'training', 'and', 'working', 'with', 'AI']),
(0.09277191614415067, ['The', 'program', 'was', 'developed', 'to', 'provide', 'jo
b', 'ready', 'skills', 'to', 'programmers', 'who', 'wanted', 'to', 'hone', 'thei
r', 'skills', 'in', 'AI', 'and', 'data', 'science', 'with', 'a', 'series', 'of',
'online', 'courses', 'which', 'featured', 'hands-on', 'labs', 'and', 'expert', 'in
structors', 'as', 'well'])]
Summarize Text:
 Envisioned as a three-year collaborative program, Intelligent Cloud Hub will supp
ort around 100 institutions with AI infrastructure, course content and curriculum,
developer support, development tools and give students access to cloud and AI serv
ices. The company will provide AI development tools and Azure AI services such as
Microsoft Cognitive Services, Bot Services and Azure Machine Learning.According to
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```

In [ ]: