PROJECT PART 1

Anirudh Nigania   *- 653417130*
Kushagradhi Bhowmik   *- 665435416*

[Q1] Why did you choose the specific parser you did?

[A1]
We experimented with the *Stanford CoreNLP Parser* and *NLTK parser* for the first part of Project 1. Based on our experience with the two, we decided to use **Stanford CoreNLP Parser** for generating the parse tree. It provided us with an extensive in-built grammar which was correctly parsing the sentences in most of the scenarios. Its ability to handle unknown proper nouns made the task of parsing a lot easier and scalable in comparison to *NLTK parser,* for which we had to add new words to the grammar.

When parsing with the *NLTK parser* we used the grammar provided by Large-context free and feature-based grammars for parser comparison. In the results received from the two parsers Stanford CoreNLP was given us better results and therefore we chose to use it for parsing the sentences.

Parse Trees

[1 c] Is the Pacific deeper than the Atlantic?

```
(ROOT
 (SQ
  (VBZ Is)
  (NP (DT the) (NNP Pacific))
  (NP
   (NP (JJR deeper))
   (PP (IN than) (NP (DT the) (NNP Atlantic))))
  (. ?)))
```

[1 e] Did Swank win the oscar in 2000?

```
(ROOT
 (SQ
  (VBD Did)
  (NP (NNP Swank))
  (VP
   (VB win)
   (NP (NP (DT the) (NN oscar)) (PP (IN in) (NP (CD 2000)))))
  (. ?)))
```

[1 f] Is the Shining by Kubrik?

```
(ROOT
  (SQ
    (VBZ Is)
    (NP (DT the))
    (NP (NP (VBG Shining)) (PP (IN by) (NP (NNP Kubrik))))
    (. ?)))
```

[1 j] Does the album Thriller include the track BeatIt?

```
(ROOT
 (S
   (VP
     (VBZ Does)
     (SBAR
       (S
         (NP (DT the) (NN album) (NN Thriller))
         (VP (VBP include) (NP (DT the) (NN track) (NN BeatIt))))))
   (. ?)))
```

[2 a] Who directed Hugo?

```
(ROOT
  (SBARQ
    (WHNP (WP Who))
    (SQ (VP (VBD directed) (NP (NNP Hugo))))
    (. ?)))
```

[2 b] Which is the scary movie by Kubrik with Nicholson?

```
(ROOT
  (SBARQ
    (WHNP (WDT Which))
    (SQ
      (VBZ is)
      (NP
        (NP (DT the) (JJ scary) (NN movie))
        (PP
          (IN by)
          (NP (NP (NN Kubrik)) (PP (IN with) (NP (NN Nicholson)))))))
    (. ?)))
```

[2 f] In which continent does Canada lie?

```
(ROOT
 (SBARQ
   (WHPP (IN In) (WHNP (WDT which) (NN continent)))
   (SQ (VBZ does) (NP (NNP Canada)) (VP (VB lie)))
   (. ?)))
```

[2 h] With which countries does France have a border?

```
(ROOT
 (S
   (PP
     (IN With)
     (SBAR
       (WHNP (WDT which))
       (S (NP (NNS countries)) (VP (VBZ does)))))
   (NP (NNP France))
   (VP (VB have) (NP (DT a) (NN border)))
   (. ?)))
```

[2 m] Where was Gaga born?

```
(ROOT
 (SBARQ
   (WHADVP (WRB Where))
   (SQ (VBD was) (NP (NNP Gaga)) (VP (VBN born)))
   (. ?)))
```

[2 n] In which album does Aura appear?

```
(ROOT
 (SBARQ
   (WHPP (IN In) (WHNP (WDT which) (NN album)))
   (SQ (VBZ does) (NP (NNP Aura)) (VP (VB appear)))
   (. ?)))
```

[2 o] Which album by Swift was released in 2014?

```
(ROOT
  (SBARQ
    (WHNP
      (WHNP (WDT Which) (NN album))
      (PP (IN by) (NP (NNP Swift))))
    (SQ (VBD was) (VP (VBN released) (PP (IN in) (NP (CD 2014)))))
    (. ?)))
```

Category Results

[1 c] Sentence: Is the Pacific deeper than the Atlantic?
[1 c] Category: GEOGRAPHY

[1 e] Sentence: Did Swank win the oscar in 2000?
[1 e] Category: MOVIE

[1 f] Sentence: Is the Shining by Kubrik?
[1 f] Category: MOVIE

[1 j] Sentence: Does the album Thriller include the track BeatIt?
[1 j] Category: MUSIC

[2 a] Sentence: Who directed Hugo ?
[2 a] Category: MOVIE

[2 b] Sentence: Which is the scary movie by Kubrik with Nicholson?
[2 b] Category: MOVIE

[2 f] Sentence: In which continent does Canada lie?
[2 f] Category: GEOGRAPHY

[2 h] Sentence: With which countries does France have a border?
[2 h] Category: GEOGRAPHY

[2 m] Sentence: Where was Gaga born?
[2 m] Category: MOVIE

[2 n] Sentence: In which album does Aura appear?
[2 n] Category: MUSIC

[2 o] Sentence: Which album by Swift was released in 2014?
[2 o] Category: MUSIC