

The elections in Brazil will take place on October 30, 2022.

The idea is to analyze the sentences about the two candidates: Luiz Inácio Lula da Silva (Lula) and (Jair Bolsonaro (Bolsonaro) using Watson IBM, Natural Language Understanding (NLU).

- 1) My network was invited to participate. They share a phase around 5 words about each candidate
- 2) I used watson NLU features: ConceptsOptions, RelationsOptions, EmotionOptions, EntitiesOptions, SemanticRolesOptions, SentimentOptions.
- 3) "sentiment": "score": between 0-1 "label": "positive", "negative", "neutro" "emotion": "sadness", "joy", "fear", "disgust" and "anger" between 0-1

```
In [1]: # LET'S IMPORT JSON

import json

In [2]: #CONNECT IBM WATSON - NLU

from ibm_watson import NaturalLanguageUnderstandingV1
from ibm_cloud_sdk_core.authenticators import IAMAuthenticator
from ibm_watson.natural_language_understanding_v1 \
import Features, CategoriesOptions
authenticator = IAMAuthenticator('')
natural_language_understanding = NaturalLanguageUnderstandingV1(
    version='2022-04-07',
    authenticator=authenticator
)
natural_language_understanding.set_service_url('https://api.us-east.natural-language-understanding.watson.cloud.ibm.com/instances/

In [3]: # IMPORT FEATURES LIKE ConceptsOptions, RelationsOptions, EmotionOptions, EntitiesOptions, SemanticRolesOptions, SentimentOptions

from ibm_watson.natural_language_understanding_v1 \
import Features, ConceptsOptions, RelationsOptions, EmotionOptions, EntitiesOptions, SemanticRolesOptions, SentimentOptions

In [4]: # INPUT TEXT ''

response_M = natural_language_understanding.analyze(
    text='Fuck Bolsonaro and Fuck Lula',
    features=Features(
        concepts=ConceptsOptions(),
        emotion=EmotionOptions(),
        entities=EntitiesOptions(),
        sentiment=SentimentOptions(),))
print(response_M)

{
  "result": {
    "usage": {
      "text_units": 1,
      "text_characters": 28,
      "features": 4
    },
    "sentiment": {
      "document": {
        "score": -0.999248,
        "label": "negative"
      }
    },
    "language": "en",
    "entities": [
      {
        "type": "Person",
        "text": "Bolsonaro",
        "relevance": 0.963296,
        "count": 1,
        "confidence": 0.799505
      },
      {
        "type": "Person",
        "text": "Fuck Lula",
        "relevance": 0.253909,
        "count": 1,
        "confidence": 0.801208
      }
    ],
    "emotion": {
      "document": {
        "emotion": {
          "sadness": 0.325084,
          "joy": 0.016938,
          "fear": 0.021707,
          "disgust": 0.052214,
          "anger": 0.70542
        }
      }
    }
  },
}
```

```

      "concepts": [],
    },
    "headers": {
      "_store": {
        "server": [
          "Server",
          "watson-gateway"
        ],
        "content-length": [
          "Content-Length",
          "727"
        ],
        "content-type": [
          "Content-Type",
          "application/json; charset=utf-8"
        ],
        "cache-control": [
          "Cache-Control",
          "no-cache, no-store"
        ],
        "x-dp-watson-tran-id": [
          "x-dp-watson-tran-id",
          "e872cb90-e203-4875-9b65-d99de3600d97, e872cb90-e203-4875-9b65-d99de3600d97"
        ],
        "content-security-policy": [
          "Content-Security-Policy",
          "default-src 'none'"
        ],
        "pragma": [
          "Pragma",
          "no-cache"
        ],
        "x-content-type-options": [
          "x-content-type-options",
          "nosniff"
        ],
        "x-frame-options": [
          "x-frame-options",
          "DENY"
        ],
        "x-xss-protection": [
          "x-xss-protection",
          "1; mode=block"
        ],
        "strict-transport-security": [
          "strict-transport-security",
          "max-age=31536000; includeSubDomains;"
        ],
        "x-request-id": [
          "x-request-id",
          "e872cb90-e203-4875-9b65-d99de3600d97"
        ],
        "x-global-transaction-id": [
          "x-global-transaction-id",
          "e872cb90-e203-4875-9b65-d99de3600d97"
        ],
        "x-edgeconnect-midmile-rtt": [
          "X-EdgeConnect-MidMile-RTT",
          "111"
        ],
        "x-edgeconnect-origin-mex-latency": [
          "X-EdgeConnect-Origin-MEX-Latency",
          "439"
        ],
        "date": [
          "Date",
          "Fri, 21 Oct 2022 11:59:33 GMT"
        ],
        "connection": [
          "Connection",
          "keep-alive"
        ]
      }
    },
    "status_code": 200
  }
}

```

```

In [5]: response_MM1 = natural_language_understanding.analyze(
        text='I will pray for Bolsonaro',
        features=Features(
            concepts=ConceptsOptions(),
            emotion=EmotionOptions(),
            entities=EntitiesOptions(),
            sentiment=SentimentOptions(),))
print(response_MM1)

```

```

{
  "result": {
    "usage": {
      "text_units": 1,
      "text_characters": 25,
      "features": 4
    }
  }
}

```

```

    },
    "sentiment": {
      "document": {
        "score": -0.721469,
        "label": "negative"
      }
    },
    "language": "en",
    "entities": [
      {
        "type": "Person",
        "text": "Bolsonaro",
        "relevance": 0.978348,
        "count": 1,
        "confidence": 0.922878
      }
    ],
    "emotion": {
      "document": {
        "emotion": {
          "sadness": 0.114504,
          "joy": 0.047821,
          "fear": 0.302714,
          "disgust": 0.089176,
          "anger": 0.082869
        }
      }
    },
    "concepts": []
  },
  "headers": {
    "_store": {
      "server": [
        "Server",
        "watson-gateway"
      ],
      "content-length": [
        "Content-Length",
        "588"
      ],
      "content-type": [
        "Content-Type",
        "application/json; charset=utf-8"
      ],
      "cache-control": [
        "Cache-Control",
        "no-cache, no-store"
      ],
      "x-dp-watson-tran-id": [
        "x-dp-watson-tran-id",
        "75404cd9-5e64-47fc-bb5e-ee49d5f3364a, 75404cd9-5e64-47fc-bb5e-ee49d5f3364a"
      ],
      "content-security-policy": [
        "Content-Security-Policy",
        "default-src 'none'"
      ],
      "pragma": [
        "Pragma",
        "no-cache"
      ],
      "x-content-type-options": [
        "x-content-type-options",
        "nosniff"
      ],
      "x-frame-options": [
        "x-frame-options",
        "DENY"
      ],
      "x-xss-protection": [
        "x-xss-protection",
        "1; mode=block"
      ],
      "strict-transport-security": [
        "strict-transport-security",
        "max-age=31536000; includeSubDomains;"
      ],
      "x-request-id": [
        "x-request-id",
        "75404cd9-5e64-47fc-bb5e-ee49d5f3364a"
      ],
      "x-global-transaction-id": [
        "x-global-transaction-id",
        "75404cd9-5e64-47fc-bb5e-ee49d5f3364a"
      ],
      "x-edgeconnect-midmile-rtt": [
        "X-EdgeConnect-MidMile-RTT",
        "111"
      ],
      "x-edgeconnect-origin-mex-latency": [
        "X-EdgeConnect-Origin-MEX-Latency",
        "433"
      ],
    ],
  },

```

```

    "date": [
      "Date",
      "Fri, 21 Oct 2022 11:59:33 GMT"
    ],
    "connection": [
      "Connection",
      "keep-alive"
    ]
  }
},
"status_code": 200
}

```

In [6]:

```

response_MM2 = natural_language_understanding.analyze(
    text='Lula has a pact with devil',
    features=Features(
        concepts=ConceptsOptions(),
        emotion=EmotionOptions(),
        entities=EntitiesOptions(),
        sentiment=SentimentOptions(),))
print(response_MM2)

```

```

{
  "result": {
    "usage": {
      "text_units": 1,
      "text_characters": 26,
      "features": 4
    },
    "sentiment": {
      "document": {
        "score": -0.63061,
        "label": "negative"
      }
    },
    "language": "en",
    "entities": [
      {
        "type": "Person",
        "text": "Lula",
        "relevance": 0.978348,
        "count": 1,
        "confidence": 0.985733
      }
    ],
    "emotion": {
      "document": {
        "emotion": {
          "sadness": 0.602667,
          "joy": 0.028511,
          "fear": 0.219334,
          "disgust": 0.04589,
          "anger": 0.047373
        }
      }
    },
    "concepts": []
  },
  "headers": {
    "_store": {
      "server": [
        "Server",
        "watson-gateway"
      ],
      "content-length": [
        "Content-Length",
        "581"
      ],
      "content-type": [
        "Content-Type",
        "application/json; charset=utf-8"
      ],
      "cache-control": [
        "Cache-Control",
        "no-cache, no-store"
      ],
      "x-dp-watson-tran-id": [
        "x-dp-watson-tran-id",
        "5cddd865-23f0-483f-9d8a-8db78e2d8200, 5cddd865-23f0-483f-9d8a-8db78e2d8200"
      ],
      "content-security-policy": [
        "Content-Security-Policy",
        "default-src 'none'"
      ],
      "pragma": [
        "Pragma",
        "no-cache"
      ],
      "x-content-type-options": [
        "x-content-type-options",
        "nosniff"
      ],
    },
  },
}

```

```

        "x-frame-options": [
            "x-frame-options",
            "DENY"
        ],
        "x-xss-protection": [
            "x-xss-protection",
            "1; mode=block"
        ],
        "strict-transport-security": [
            "strict-transport-security",
            "max-age=31536000; includeSubDomains;"
        ],
        "x-request-id": [
            "x-request-id",
            "5cddd865-23f0-483f-9d8a-8db78e2d8200"
        ],
        "x-global-transaction-id": [
            "x-global-transaction-id",
            "5cddd865-23f0-483f-9d8a-8db78e2d8200"
        ],
        "x-edgeconnect-midmile-rtt": [
            "X-EdgeConnect-MidMile-RTT",
            "111"
        ],
        "x-edgeconnect-origin-mex-latency": [
            "X-EdgeConnect-Origin-MEX-Latency",
            "169"
        ],
        "date": [
            "Date",
            "Fri, 21 Oct 2022 11:59:34 GMT"
        ],
        "connection": [
            "Connection",
            "keep-alive"
        ]
    }
},
"status_code": 200
}

```

```

In [7]: response_MM3 = natural_language_understanding.analyze(
        text='Bolsonaro is a bad president',
        features=Features(
            concepts=ConceptsOptions(),
            emotion=EmotionOptions(),
            entities=EntitiesOptions(),
            sentiment=SentimentOptions(),))
print(response_MM3)

```

```

{
  "result": {
    "usage": {
      "text_units": 1,
      "text_characters": 28,
      "features": 4
    },
    "sentiment": {
      "document": {
        "score": -0.935303,
        "label": "negative"
      }
    },
    "language": "en",
    "entities": [
      {
        "type": "Person",
        "text": "Bolsonaro",
        "relevance": 0.963296,
        "count": 1,
        "confidence": 0.988056
      },
      {
        "type": "JobTitle",
        "text": "president",
        "relevance": 0.056661,
        "count": 1,
        "confidence": 0.629147
      }
    ],
    "emotion": {
      "document": {
        "emotion": {
          "sadness": 0.613483,
          "joy": 0.012304,
          "fear": 0.091864,
          "disgust": 0.047484,
          "anger": 0.249248
        }
      }
    },
    "concepts": [

```

```

        {
            "text": "\"Weird Al\" Yankovic",
            "relevance": 0.868889,
            "dbpedia_resource": "http://dbpedia.org/resource/\"Weird_Al\"_Yankovic"
        }
    ]
},
"headers": {
    "_store": {
        "server": [
            "Server",
            "watson-gateway"
        ],
        "content-length": [
            "Content-Length",
            "891"
        ],
        "content-type": [
            "Content-Type",
            "application/json; charset=utf-8"
        ],
        "cache-control": [
            "Cache-Control",
            "no-cache, no-store"
        ],
        "x-dp-watson-tran-id": [
            "x-dp-watson-tran-id",
            "2f18b8c2-e32c-481a-b4b3-23cddb42a6cd, 2f18b8c2-e32c-481a-b4b3-23cddb42a6cd"
        ],
        "content-security-policy": [
            "Content-Security-Policy",
            "default-src 'none'"
        ],
        "pragma": [
            "Pragma",
            "no-cache"
        ],
        "x-content-type-options": [
            "x-content-type-options",
            "nosniff"
        ],
        "x-frame-options": [
            "x-frame-options",
            "DENY"
        ],
        "x-xss-protection": [
            "x-xss-protection",
            "1; mode=block"
        ],
        "strict-transport-security": [
            "strict-transport-security",
            "max-age=31536000; includeSubDomains;"
        ],
        "x-request-id": [
            "x-request-id",
            "2f18b8c2-e32c-481a-b4b3-23cddb42a6cd"
        ],
        "x-global-transaction-id": [
            "x-global-transaction-id",
            "2f18b8c2-e32c-481a-b4b3-23cddb42a6cd"
        ],
        "x-edgeconnect-midmile-rtt": [
            "X-EdgeConnect-MidMile-RTT",
            "111"
        ],
        "x-edgeconnect-origin-mex-latency": [
            "X-EdgeConnect-Origin-MEX-Latency",
            "185"
        ],
        "date": [
            "Date",
            "Fri, 21 Oct 2022 11:59:34 GMT"
        ],
        "connection": [
            "Connection",
            "keep-alive"
        ]
    }
},
"status_code": 200
}

```

```

In [9]: response_t1 = natural_language_understanding.analyze(
        text='Who is the president of Brazil?',
        features=Features(
            concepts=ConceptsOptions(),
            emotion=EmotionOptions(),
            entities=EntitiesOptions(),
            sentiment=SentimentOptions(),))
print(response_t1)

```

```
{
```

```

"result": {
  "usage": {
    "text_units": 1,
    "text_characters": 31,
    "features": 4
  },
  "sentiment": {
    "document": {
      "score": 0,
      "label": "neutral"
    }
  },
  "language": "en",
  "entities": [
    {
      "type": "JobTitle",
      "text": "president",
      "relevance": 0.963296,
      "count": 1,
      "confidence": 0.951871
    },
    {
      "type": "Location",
      "text": "Brazil",
      "relevance": 0.356384,
      "count": 1,
      "confidence": 0.453427
    }
  ],
  "emotion": {
    "document": {
      "emotion": {
        "sadness": 0.414991,
        "joy": 0.348832,
        "fear": 0.086416,
        "disgust": 0.006725,
        "anger": 0.031695
      }
    }
  },
  "concepts": [
    {
      "text": "President",
      "relevance": 0.886784,
      "dbpedia_resource": "http://dbpedia.org/resource/President"
    },
    {
      "text": "President of the United States",
      "relevance": 0.862208,
      "dbpedia_resource": "http://dbpedia.org/resource/President_of_the_United_States"
    },
    {
      "text": "Politics of Brazil",
      "relevance": 0.845824,
      "dbpedia_resource": "http://dbpedia.org/resource/Politics_of_Brazil"
    }
  ]
},
"headers": {
  "_store": {
    "server": [
      "Server",
      "watson-gateway"
    ],
    "content-length": [
      "Content-Length",
      "1187"
    ],
    "content-type": [
      "Content-Type",
      "application/json; charset=utf-8"
    ],
    "cache-control": [
      "Cache-Control",
      "no-cache, no-store"
    ],
    "x-dp-watson-tran-id": [
      "x-dp-watson-tran-id",
      "d278ae36-7cf7-4755-9519-673054082f19, d278ae36-7cf7-4755-9519-673054082f19"
    ],
    "content-security-policy": [
      "Content-Security-Policy",
      "default-src 'none'"
    ],
    "pragma": [
      "Pragma",
      "no-cache"
    ],
    "x-content-type-options": [
      "x-content-type-options",
      "nosniff"
    ]
  },

```

```

"x-frame-options": [
  "x-frame-options",
  "DENY"
],
"x-xss-protection": [
  "x-xss-protection",
  "1; mode=block"
],
"strict-transport-security": [
  "strict-transport-security",
  "max-age=31536000; includeSubDomains;"
],
"x-request-id": [
  "x-request-id",
  "d278ae36-7cf7-4755-9519-673054082f19"
],
"x-global-transaction-id": [
  "x-global-transaction-id",
  "d278ae36-7cf7-4755-9519-673054082f19"
],
"x-edgeconnect-midmile-rtt": [
  "X-EdgeConnect-MidMile-RTT",
  "111"
],
"x-edgeconnect-origin-mex-latency": [
  "X-EdgeConnect-Origin-MEX-Latency",
  "251"
],
"date": [
  "Date",
  "Fri, 21 Oct 2022 11:59:35 GMT"
],
"connection": [
  "Connection",
  "keep-alive"
]
}
},
"status_code": 200
}

```

In [10]:

```

response_t2 = natural_language_understanding.analyze(
    text='Who is Luiz Inacio Lula da Silva?',
    features=Features(
        concepts=ConceptsOptions(),
        emotion=EmotionOptions(),
        entities=EntitiesOptions(),
        sentiment=SentimentOptions(),))
print(response_t2)

```

```

{
  "result": {
    "usage": {
      "text_units": 1,
      "text_characters": 33,
      "features": 4
    },
    "sentiment": {
      "document": {
        "score": 0,
        "label": "neutral"
      }
    },
    "language": "en",
    "entities": [
      {
        "type": "Person",
        "text": "Luiz Inacio Lula da Silva",
        "relevance": 0.978348,
        "disambiguation": {
          "subtype": [
            "Politician",
            "President",
            "ChivalricOrderMember"
          ],
          "name": "Luiz_In%C3%A1cio_Lula_da_Silva",
          "dbpedia_resource": "http://dbpedia.org/resource/Luiz_In%C3%A1cio_Lula_da_Silva"
        },
        "count": 1,
        "confidence": 0.381808
      }
    ],
    "emotion": {
      "document": {
        "emotion": {
          "sadness": 0.081908,
          "joy": 0.067058,
          "fear": 0.107009,
          "disgust": 0.230664,
          "anger": 0.057494
        }
      }
    }
  }
}

```



```

    },
    "concepts": [
      {
        "text": "Luiz In\u00e9lcio Lula da Silva",
        "relevance": 0.967495,
        "dbpedia_resource": "http://dbpedia.org/resource/Luiz_In\u00e9lcio_Lula_da_Silva"
      },
      {
        "text": "President of Brazil",
        "relevance": 0.539012,
        "dbpedia_resource": "http://dbpedia.org/resource/President_of_Brazil"
      }
    ]
  },
  "headers": {
    "_store": {
      "server": [
        "Server",
        "watson-gateway"
      ],
      "content-length": [
        "Content-Length",
        "1207"
      ],
      "content-type": [
        "Content-Type",
        "application/json; charset=utf-8"
      ],
      "cache-control": [
        "Cache-Control",
        "no-cache, no-store"
      ],
      "x-dp-watson-tran-id": [
        "x-dp-watson-tran-id",
        "f9206212-68a1-4d91-955f-6d852d5be2be, f9206212-68a1-4d91-955f-6d852d5be2be"
      ],
      "content-security-policy": [
        "Content-Security-Policy",
        "default-src 'none'"
      ],
      "pragma": [
        "Pragma",
        "no-cache"
      ],
      "x-content-type-options": [
        "x-content-type-options",
        "nosniff"
      ],
      "x-frame-options": [
        "x-frame-options",
        "DENY"
      ],
      "x-xss-protection": [
        "x-xss-protection",
        "1; mode=block"
      ],
      "strict-transport-security": [
        "strict-transport-security",
        "max-age=31536000; includeSubDomains;"
      ],
      "x-request-id": [
        "x-request-id",
        "f9206212-68a1-4d91-955f-6d852d5be2be"
      ],
      "x-global-transaction-id": [
        "x-global-transaction-id",
        "f9206212-68a1-4d91-955f-6d852d5be2be"
      ],
      "x-edgeconnect-midmile-rtt": [
        "X-EdgeConnect-MidMile-RTT",
        "111"
      ],
      "x-edgeconnect-origin-mex-latency": [
        "X-EdgeConnect-Origin-MEX-Latency",
        "168"
      ],
      "date": [
        "Date",
        "Fri, 21 Oct 2022 11:59:35 GMT"
      ],
      "connection": [
        "Connection",
        "keep-alive"
      ]
    }
  },
  "status_code": 200
}

```

```

In [11]: response_t3 = natural_language_understanding.analyze(
          text='He is a good president because he helped poor people',
          features=Features(

```

```

        concepts=ConceptsOptions(),
        emotion=EmotionOptions(),
        entities=EntitiesOptions(),
        sentiment=SentimentOptions(),))
print(response_t3)

```

```

{
  "result": {
    "usage": {
      "text_units": 1,
      "text_characters": 52,
      "features": 4
    },
    "sentiment": {
      "document": {
        "score": -0.674608,
        "label": "negative"
      }
    },
    "language": "en",
    "entities": [
      {
        "type": "JobTitle",
        "text": "president",
        "relevance": 0.978348,
        "count": 1,
        "confidence": 0.692237
      }
    ],
    "emotion": {
      "document": {
        "emotion": {
          "sadness": 0.617538,
          "joy": 0.363471,
          "fear": 0.025429,
          "disgust": 0.012289,
          "anger": 0.014443
        }
      }
    },
    "concepts": [
      {
        "text": "Poverty",
        "relevance": 0.886784,
        "dbpedia_resource": "http://dbpedia.org/resource/Poverty"
      }
    ]
  },
  "headers": {
    "_store": {
      "server": [
        "Server",
        "watson-gateway"
      ],
      "content-length": [
        "Content-Length",
        "723"
      ],
      "content-type": [
        "Content-Type",
        "application/json; charset=utf-8"
      ],
      "cache-control": [
        "Cache-Control",
        "no-cache, no-store"
      ],
      "x-dp-watson-tran-id": [
        "x-dp-watson-tran-id",
        "cdabcb1-05dc-4d56-9aad-c156f3120ef7, cdabcb1-05dc-4d56-9aad-c156f3120ef7"
      ],
      "content-security-policy": [
        "Content-Security-Policy",
        "default-src 'none'"
      ],
      "pragma": [
        "Pragma",
        "no-cache"
      ],
      "x-content-type-options": [
        "x-content-type-options",
        "nosniff"
      ],
      "x-frame-options": [
        "x-frame-options",
        "DENY"
      ],
      "x-xss-protection": [
        "x-xss-protection",
        "1; mode=block"
      ],
      "strict-transport-security": [
        "strict-transport-security",

```

```
        "max-age=31536000; includeSubDomains;"
    ],
    "x-request-id": [
        "x-request-id",
        "cdabcb1-05dc-4d56-9aad-c156f3120ef7"
    ],
    "x-global-transaction-id": [
        "x-global-transaction-id",
        "cdabcb1-05dc-4d56-9aad-c156f3120ef7"
    ],
    "x-edgeconnect-midmile-rtt": [
        "X-EdgeConnect-MidMile-RTT",
        "111"
    ],
    "x-edgeconnect-origin-mex-latency": [
        "X-EdgeConnect-Origin-MEX-Latency",
        "183"
    ],
    "date": [
        "Date",
        "Fri, 21 Oct 2022 11:59:35 GMT"
    ],
    "connection": [
        "Connection",
        "keep-alive"
    ]
  }
},
"status_code": 200
}
```

In [12]:

```
response_t3 = natural_language_understanding.analyze(
    text='He is a good president',
    features=Features(
        concepts=ConceptsOptions(),
        emotion=EmotionOptions(),
        entities=EntitiesOptions(),
        sentiment=SentimentOptions(),))
print(response_t3)
```

```
{
  "result": {
    "usage": {
      "text_units": 1,
      "text_characters": 22,
      "features": 4
    },
    "sentiment": {
      "document": {
        "score": 0.909209,
        "label": "positive"
      }
    },
    "language": "en",
    "entities": [
      {
        "type": "JobTitle",
        "text": "president",
        "relevance": 0.978348,
        "count": 1,
        "confidence": 0.71099
      }
    ],
    "emotion": {
      "document": {
        "emotion": {
          "sadness": 0.141557,
          "joy": 0.812031,
          "fear": 0.022705,
          "disgust": 0.00564,
          "anger": 0.044372
        }
      }
    },
    "concepts": []
  },
  "headers": {
    "_store": {
      "server": [
        "Server",
        "watson-gateway"
      ],
      "content-length": [
        "Content-Length",
        "587"
      ],
      "content-type": [
        "Content-Type",
        "application/json; charset=utf-8"
      ],
      "cache-control": [
        "Cache-Control",
```

```
        "no-cache, no-store"
    ],
    "x-dp-watson-tran-id": [
        "x-dp-watson-tran-id",
        "76726ce8-5e77-4b48-900a-a7d4234c2582, 76726ce8-5e77-4b48-900a-a7d4234c2582"
    ],
    "content-security-policy": [
        "Content-Security-Policy",
        "default-src 'none'"
    ],
    "pragma": [
        "Pragma",
        "no-cache"
    ],
    "x-content-type-options": [
        "x-content-type-options",
        "nosniff"
    ],
    "x-frame-options": [
        "x-frame-options",
        "DENY"
    ],
    "x-xss-protection": [
        "x-xss-protection",
        "1; mode=block"
    ],
    "strict-transport-security": [
        "strict-transport-security",
        "max-age=31536000; includeSubDomains;"
    ],
    "x-request-id": [
        "x-request-id",
        "76726ce8-5e77-4b48-900a-a7d4234c2582"
    ],
    "x-global-transaction-id": [
        "x-global-transaction-id",
        "76726ce8-5e77-4b48-900a-a7d4234c2582"
    ],
    "x-edgeconnect-midmile-rtt": [
        "X-EdgeConnect-MidMile-RTT",
        "111"
    ],
    "x-edgeconnect-origin-mex-latency": [
        "X-EdgeConnect-Origin-MEX-Latency",
        "207"
    ],
    "date": [
        "Date",
        "Fri, 21 Oct 2022 11:59:36 GMT"
    ],
    "connection": [
        "Connection",
        "keep-alive"
    ]
  }
},
"status_code": 200
}
```

In [13]:

```
response_t3 = natural_language_understanding.analyze(
    text='He is a bad president',
    features=Features(
        concepts=ConceptsOptions(),
        emotion=EmotionOptions(),
        entities=EntitiesOptions(),
        sentiment=SentimentOptions(),))
print(response_t3)
```

```
{
  "result": {
    "usage": {
      "text_units": 1,
      "text_characters": 21,
      "features": 4
    },
    "sentiment": {
      "document": {
        "score": -0.910755,
        "label": "negative"
      }
    },
    "language": "en",
    "entities": [
      {
        "type": "JobTitle",
        "text": "president",
        "relevance": 0.978348,
        "count": 1,
        "confidence": 0.73142
      }
    ],
    "emotion": {
```

```

      "document": {
        "emotion": {
          "sadness": 0.690513,
          "joy": 0.013195,
          "fear": 0.088682,
          "disgust": 0.033215,
          "anger": 0.171303
        }
      },
      "concepts": [
        {
          "text": "\"Weird Al\" Yankovic",
          "relevance": 0.868889,
          "dbpedia_resource": "http://dbpedia.org/resource/\"Weird_Al\"_Yankovic"
        }
      ]
    },
    "headers": {
      "_store": {
        "server": [
          "Server",
          "watson-gateway"
        ],
        "content-length": [
          "Content-Length",
          "750"
        ],
        "content-type": [
          "Content-Type",
          "application/json; charset=utf-8"
        ],
        "cache-control": [
          "Cache-Control",
          "no-cache, no-store"
        ],
        "x-dp-watson-tran-id": [
          "x-dp-watson-tran-id",
          "68bc25a3-8df7-4b91-987a-bdece204d48a, 68bc25a3-8df7-4b91-987a-bdece204d48a"
        ],
        "content-security-policy": [
          "Content-Security-Policy",
          "default-src 'none'"
        ],
        "pragma": [
          "Pragma",
          "no-cache"
        ],
        "x-content-type-options": [
          "x-content-type-options",
          "nosniff"
        ],
        "x-frame-options": [
          "x-frame-options",
          "DENY"
        ],
        "x-xss-protection": [
          "x-xss-protection",
          "1; mode=block"
        ],
        "strict-transport-security": [
          "strict-transport-security",
          "max-age=31536000; includeSubDomains;"
        ],
        "x-request-id": [
          "x-request-id",
          "68bc25a3-8df7-4b91-987a-bdece204d48a"
        ],
        "x-global-transaction-id": [
          "x-global-transaction-id",
          "68bc25a3-8df7-4b91-987a-bdece204d48a"
        ],
        "x-edgeconnect-midmile-rtt": [
          "X-EdgeConnect-MidMile-RTT",
          "111"
        ],
        "x-edgeconnect-origin-mex-latency": [
          "X-EdgeConnect-Origin-MEX-Latency",
          "227"
        ],
        "date": [
          "Date",
          "Fri, 21 Oct 2022 11:59:36 GMT"
        ],
        "connection": [
          "Connection",
          "keep-alive"
        ]
      }
    },
    "status_code": 200
  }
}

```

In []:

In []: