# Install & Run Course Project

CS 410 (Team: Sentient)

# NLTK Setup and Run

1. Install python 3
   a. Follow instructions in the following document based on your environment.
   b. https://www.digitalocean.com/community/tutorial_series/how-to-install-and-set-up-a-local-programming-environment-for-python-3
2. Install the python package manager pip
   a. Follow instructions in the following document based on your environment.
   b. https://www.makeuseof.com/tag/install-pip-for-python/
3. Using the pip package manager, install NLTK
   a. `$ pip install nltk`
4. Download “Twitter Samples” data in the NLTK Corpora (from python prompt)
   a. `>>> nltk.download('twitter_samples')`

# NLTK Setup and Run Cont.

5. Clone the CourseProject repository (https://github.com/ratanbajpai/CourseProject)
6. Go to the src/nltk directory
7. For sentiment analysis with emojis, run the following command: `$ python3 sentiment_analysis_nltk.py 1`
8. For sentiment analysis without emojis, run the following command: `$ python3 sentiment_analysis_nltk.py 2`
9. The output of above steps should be similar to as indicated in the ProjectFinalReport.pdf sections 9 h and i.

# Amazon Comprehend Setup and Run

1. Install python 3
   a. Follow instructions in the following document based on your environment.
   b. https://www.digitalocean.com/community/tutorial_series/how-to-install-and-set-up-a-local-programming-environment-for-python-3
2. Install the python package manager pip
   a. Follow instructions in the following document based on your environment.
   b. https://www.makeuseof.com/tag/install-pip-for-python/
3. Using pip package manager install boto3
   a. > pip install boto3
4. On AWS create an IAM role with permissions: ComprehendFullAccess, AWSLambdaExecute.

# Amazon Comprehend Setup and Run Cont.

5. Create an AWS lambda function for python 3.8 runtime. Select “use an existing role” and select the IAM role created above.
6. Paste the code from the file “src/amazon_comprehend/sentiment_analysis_lambda.py” in the body of the lambda function.
7. Deploy the lambda function.
8. Create AWS security credentials (https://docs.aws.amazon.com/powershell/latest/userguide/pstools-appendix-sign-up.html)

# Amazon Comprehend Setup and Run Cont.

9. In the CourseProject repository go to the src/amazon_comprehend directory
10. Provide your AWS lambda arn in “sentiment_analysis_amazon_comprehend.py” by editing the line: response = lambda_client.invoke(FunctionName='arn:aws:lambda:us-east-1:765679423646:function:sentimentAnalysisLambda', InvocationType='RequestResponse', Payload=json.dumps(lambda_payload)) Note: This step is missing in the video.
11. Provide the security credentials in the “sentiment_analysis_amazon_comprehend.py” by editing the line: *lambda_client = boto3.client('lambda', region_name='us-east-1', aws_access_key_id=’put your access key id here, aws_secret_access_key='put your secret access key here')*

# Amazon Comprehend Setup and Run Cont.

12. For sentiment analysis with emojis, run the following command: $ python3 sentiment_analysis_amazon_comprehend.py 1
13. For sentiment analysis without emojis, run the following command: $ python3 sentiment_analysis_amazon_comprehend.py 2
14. You should see similar results as indicated for Amazon Comprehend in the prior section. It takes a while to execute the “sentiment_analysis_amazon_comprehend.py” script. For each case there will be roughly 2500 calls made to the AWS lambda and Amazon Comprehend API. **This could take several minutes to execute.**

    **NOTE: Amazon Comprehend is a paid service. If you do not have the free tier, you may get charged for executing the Amazon Comprehend.**