

Here is the project folder which has all the necessary files with input email dataset new_emails.csv.

Anaconda Prompt (anaconda3) - python Sentiment_CNN_v1.py

```
Directory of C:\Users\itsme\sivaworkspace\CourseProject

12/10/2021  09:26 PM    <DIR>        .
12/10/2021  09:26 PM    <DIR>        ..
12/08/2021  11:13 AM    <DIR>        .idea
12/08/2021  11:50 AM    <DIR>        .ipynb_checkpoints
12/09/2021  01:09 PM                2,548 app.py
12/10/2021  05:28 PM                217 app1.py
12/08/2021  11:13 AM            141,318 C410 - TIS - Progress Report.pdf
12/08/2021  11:13 AM            109,177 C410 - TIS - Project Proposal.pdf
12/08/2021  03:47 PM                87 cat_to_name.json
12/08/2021  03:48 PM                28 class_to_idx.json
12/08/2021  03:50 PM               650 commons.py
12/08/2021  12:03 PM    <DIR>        content
12/08/2021  07:36 PM            11,857 deleteSentiment_CNN.py
12/08/2021  11:56 AM            17,318 email_data_cleaning.ipynb
12/08/2021  03:45 PM                544 inference.py
12/08/2021  11:13 AM    <DIR>        Model
11/11/2021  07:16 AM        375,719,138 new_emails.csv
12/08/2021  11:13 AM                1,111 README.md
12/10/2021  05:26 PM                109 request.py
12/09/2021  12:11 PM            63,494 Sentiment_CNN_v1.ipynb
12/10/2021  09:24 PM            11,862 Sentiment_CNN_v1.py
12/08/2021  07:29 PM    <DIR>        static
12/08/2021  07:28 PM    <DIR>        templates
12/09/2021  07:35 AM    <DIR>        __pycache__
                15 File(s)      376,079,458 bytes
                9 Dir(s)    142,697,189,376 bytes free
```

Execute the Sentiment_CNN_v1.py script as below in the screenshot. I takes the each sample input text and tensor.

Anaconda Prompt (anaconda3) - python Sentiment_CNN_v1.py

```
(base) C:\Users\itsme\sivaworkspace\CourseProject>python Sentiment_CNN_v1.py
Using device: cpu
Sample text: ['Message', 'ID', '5474548', '1075841638905', 'JavaMail', 'evans', 'thyme', 'Date', 'Tue', '16', 'Jan', '2001', '07', '50', '00', '0800', 'PST', 'From', 'ate', 'symes', 'enron', 'com', 'Subject', '1', '16', '0', 'Checkout', 'Mime', 'Version', '1', '0', 'Content', 'Type', 'text', 'plain', 'charset', 'us', 'ascii', 'Content', 'rom', 'Evelyn', 'Metoyen', 'X', 'To', 'Kate', 'Symes', 'enron', 'com', 'X', 'cc', 'X', 'bcc', 'X', 'Folder', 'kate', 'symes', '6', '27', '02', 'Notes', 'Folders', 'All', 'X', 'FileName', 'kate', 'symes', '6', '27', '02', 'nsf', 'Mark', 'Fischer', 'deal', '497791', 'Amerex', 'shows', 'price', 'as', '155', 'and', 'empower', 'has']
Sample label: symes-k/all_documents/1118.

Sample text: ['Message', 'ID', '20421197', '1075844529282', 'JavaMail', 'evans', 'thyme', 'Date', 'Thu', '21', 'Oct', '1999', '08', '47', '00', '0700', 'PDT', 'From', 'Lynn', 'aven', 'enron', 'com', 'Subject', 'Re', 'meeting', 're', 'Tozzini', 'memo', 'Mime', 'Version', '1', '0', 'Content', 'Type', 'text', 'plain', 'charset', 'us', '7bit', 'X', 'From', 'Sara', 'Shackleton', 'X', 'To', 'Lynn', 'Aven', 'X', 'cc', 'X', 'bcc', 'X', 'Folder', 'Sara_Shackleton_Dec2000_June2001.1', 'Notes', 'Folders', 'FileName', 'sshackle', 'nsf', 'Let', 's', 'do', 'it', 'on', 'Tuesday', 'Oct', '26', 'at', '2', 'pm', 'If', 'Brent', 'is', 'available', 'all', 'the', 'better', 'Let visit', 'Enronland', 'I', 'don', 't', 'mind', 'the', 'walk', 'Sara', 'Lynn', 'Aven', 'ENRON_DEVELOPMENT', '10', '21', '99', '03', '01', 'PM', 'To', 'Sara', 'Shackleton', 'meeting', 're', 'Tozzini', 'memo', 'Monday', 'or', 'Tuesday', 'of', 'next', 'week', 'is', 'ok', 'for', 'me', 'with', 'the', 'exception', 'of', '8', '30', 'to', 'I', 'out', 'of', 'the', 'question', 'since', 'there', 'is', 'a', 'Comgas', 'II', 'all', 'day', 'working', 'session', 'planned', 'Let', 'me', 'know', 'what', 'date', 'wor', 'hackleton', 'ECT', '10', '21', '99', '01', '33', 'PM', 'To', 'Lynn', 'Aven', 'ENRON_DEVELOPMENT', 'ENRON_DEVELOPMENT', 'cc', 'Subject', 'meeting', 're', 'Tozzini', 'n', 'up', 'here', 'Brent', 'may', 'not', 'get', 'my', 'e', 'mail', 'for', 'a', 'while', 'I', 'believe', 'that', 'he', 'is', 'in', 'Houston', 'today', 'on', 'personal', 'bus', 'conclusion', 'of', 'the', 'ENA', 'legal', 'conference', 'which', 'is', 'Th', 'Fr', 'next', 'week', 'what', 'is', 'your', 'availability', 'on', 'Mon', 'on', 'Tues', 'ut', 'something', 'at', 'least', 'you', 'and', 'I', 'can', 'have', 'a', 'game', 'plan', 'so', 'that', 'we', 'can', 'plan', 'our', 'next', 'visit', 'to', 'I', 'mmer', 'Sara']
Sample label: shackleton-s/sent/521.

Vocab size: 62697
Example text: tensor([
  3,  4,  2,  2,  5,  6,  7,  8, 1517, 526,
1006, 919, 13, 230, 120, 121, 122, 18, 1980, 396,
 21, 22, 23, 39730, 8710, 8711, 22, 28, 29, 2122,
6998, 11027, 34, 35, 36, 37, 38, 39, 40, 41,
 42, 43, 44, 38, 45, 46, 47, 48, 18, 1980,
 396, 48, 23, 3759, 39733, 39730, 8710, 8711, 22, 21,
```

Here the program is start training the dataset.It takes sometime depends on the size of the dataset.

```
Anaconda Prompt (anaconda3) - python Sentiment_CNN_v1.py
The model has 11,973,891 trainable parameters
Training Model...
[0/25 [00:00<, ?it/s]
Sample text: ['Message', 'ID', '2580699', '1075841880125', 'JavaMail', 'evans', 'thyme', 'Date', 'Tue', '14', 'Nov', '2000', '04', '14', '00', '0800', 'PST', 'From', 'kate', 'symes', 'enron', 'com', 'To', 'will', 'smith', 'enron', 'com', 'Subject', 'Cal', 'PX', 'Bridge', 'Mime', 'Version', '1', '0', 'Content', 'Type', 'text', 'plain', 'charset', 'us', 'ascii', 'Content', 'Transfer', 'Encoding', '7bit', 'X', 'From', 'Kate', 'Symes', 'X', 'To', 'Will', 'Smith', 'X', 'Cc', 'X', 'Bcc', 'X', 'Folder', 'kate', 'symes', '6', '27', '02', 'nsf', 'Here', 'are', 'all', 'of', 'the', 'deal', 'numbers', 'that', 'correspond', 'with', 'today', 's', 'tie', 'point', 'Cal', 'PX', 'and', 'Cal', 'Imbalance', 'deals', 'I', 'erased', 'the', 'EOL', 'transaction', 'numbers', 'on', 'the', 'first', 'four', 'but', 'I', 'believe', 'they', 'were', 'going', 'in', 'a', 'sequence', 'beginning', 'at', '627', 'Thanks', 'so', 'much', 'for', 'your', 'help', 'on', 'this', '458259', '458260', '64', '65', '66', 'Tie', 'Points', '67', '69', '70', '458271', '72', 'PX', '73', '458276', '58', 'Imbalance']
Sample label: symes-k/sent/53.

Sample text: ['Message', 'ID', '19566476', '1075857163885', 'JavaMail', 'evans', 'thyme', 'Date', 'Fri', '10', 'Mar', '2000', '09', '29', '00', '0800', 'PST', 'From', 'david', 'martin', 'enron', 'com', 'To', 'vito', 'iaia', 'enron', 'com', 'Mark', 'warner', 'enron', 'com', 'Marshall', 'Eubank', 'enron', 'com', 'Paul', 'Burkhardt', 'enron', 'com', 'Ross', 'Mesquita', 'enron', 'com', 'John', 'Emerson', 'enron', 'com', 'David', 'Mitchell', 'enron', 'com', 'Sean', 'Keenan', 'enron', 'com', 'Brent', 'Bechtol', 'enron', 'com', 'Marc', 'Hensel', 'enron', 'com', 'Brian', 'Redmond', 'enron', 'com', 'Joseph', 'Escobar', 'enron', 'com', 'Eric', 'Mason', 'enron', 'com', 'Brandon', 'Neff', 'enron', 'com', 'Benjamin', 'Rogers', 'enron', 'com', 'TJ', 'Rylander', 'enron', 'com', 'Key', 'Kasravi', 'enron', 'com', 'Christopher', 'Robinson', 'enron', 'com', 'Jeffrey', 'Soo', 'enron', 'com', 'Webb', 'Jennings', 'enron', 'com', 'Heidi', 'Hellmann', 'enron', 'com', 'Chris', 'Hilgert', 'enron', 'com', 'Subject', 'Forwarding', 'Info', 'Mime', 'Version', '1', '0', 'Content', 'Type', 'text', 'plain', 'charset', 'us', 'ascii', 'Content', 'Transfer', 'Encoding', '7bit', 'X', 'From', 'David', 'Martin', 'X', 'To', 'Vito', 'Iaia', 'Mark', 'Warner', 'Marshall', 'Eubank', 'Paul', 'Burkhardt', 'Ross', 'Mesquita', 'John', 'Emerson', 'David', 'Mitchell', 'Sean', 'Keenan', 'Brent', 'Bechtol', 'Marc', 'Hensel', 'Brian', 'Redmond', 'Joseph', 'Escobar', 'Eric', 'Mason', 'Brandon', 'Neff', 'Benjamin', 'Rogers', 'TJ', 'Rylander', 'Key', 'Kasravi', 'Christopher', 'Robinson', 'Jeffrey', 'A', 'Soo', 'Webb', 'Jennings', 'Heidi', 'Hellmann', 'Chris', 'Hilgert', 'X', 'Cc', 'X', 'Bcc', 'X', 'Folder', 'Benjamin', 'Rogers', 'Dec2000.1', 'Notes', 'Folders', 'All', 'documents', 'X', 'Origin', 'Rogers', 'B', 'X', 'FileName', 'brogers', 'nsf', 'I', 'found', 'out', 'today', 'what', 'my', 'email', 'and', 'direct', 'number', 'will', 'be', 'out', 'in', 'LA', '310', '246', '3684', 'dmartin', 'imperialcapital', 'com', 'Regards']
Sample label: rogers-b/all_documents/1682.

Sample text: ['Message', 'ID', '1375437', '1075841589262', 'JavaMail', 'evans', 'thyme', 'Date', 'Thu', '25', 'Oct', '2001', '14', '38', '04', '0700', 'PDT', 'From', 'bill', 'williams', 'enron', 'com', 'To', 'john', 'anderson', 'enron', 'com', 'todd', 'bland', 'enron', 'com', 'craig', 'dean', 'enron', 'com', 'mark', 'guzman', 'enron', 'com', 'leaf', 'harasin', 'enron', 'com', 'eric', 'linder', 'enron', 'com', 'steven', 'merriss', 'enron', 'com', 'bert', 'meyers', 'enron', 'com', 'michael', 'mier', 'enron', 'com', 'v', 'porter', 'enron', 'com', 'darin', 'presto', 'enron', 'com', 'ryan', 'slinger', 'enron', 'com', 'geir', 'solberg', 'enron', 'com', 'kate', 'symes', 'enron', 'com', 'bill', 'williams', 'enron', 'com', 'Subject', 'Long', '10', 'ms', 'flat', 'in', 'SP', '15', 'Cc', 'kysa', 'alport', 'enron', 'com', 'kate', 'symes', 'enron', 'com', 'Mime', 'Version', '1', '0', 'Content', 'Type', 'text', 'plain', 'charset', 'us', 'ascii', 'Content', 'Transfer', 'Encoding', '7bit', 'Bcc', 'kysa', 'alport', 'enron', 'com', 'kate', 'symes', 'enron', 'com', 'X', 'From', 'Williams', 'III', 'Bill', 'O', 'ENRON', 'OU', 'NA', 'CN', 'RECIPIENTS', 'CN', 'WILLIAMS', 'X', 'To', 'Anderson', 'John', 'O', 'ENRON', 'OU', 'NA', 'CN', 'RECIPIENTS', 'CN', 'Janders3', 'Bland', 'Todd', 'Bland', 'ENRON', 'com', 'Dean', 'Craig', 'Craig', 'Dean', 'ENRON', 'com', 'Guzman', 'Mark', 'O', 'ENRON', 'OU', 'NA', 'CN', 'RECIPIENTS', 'CN', 'Guzman3', 'Harasin', 'Leaf', 'O', 'ENRON', 'OU', 'NA', 'CN', 'RECIPIENTS', 'CN', 'Lharasin', 'Linder', 'Eric', 'O', 'ENRON', 'OU', 'NA', 'CN', 'RECIPIENTS', 'CN', 'Elinder', 'Merriss', 'Steven', 'O', 'ENRON', 'OU', 'NA', 'CN', 'RECIPIENTS', 'CN', 'Smerri', 's', 'Meyers', 'Bert', 'O', 'ENRON', 'OU', 'NA', 'CN', 'RECIPIENTS', 'CN', 'Bmeyers', 'Mier', 'Michael', 'O', 'ENRON', 'OU', 'NA', 'CN', 'RECIPIENTS', 'CN', 'Maier', 'Porter', 'David', 'V', 'O', 'ENRON', 'OU', 'NA', 'CN', 'RECIPIENTS', 'CN', 'Dporter3', 'Presto', 'Darin', 'O', 'ENRON', 'OU', 'NA', 'CN', 'RECIPIENTS', 'CN', 'Dpresto2', 'Slinger', 'Ryan', 'O', 'ENRON', 'OU', 'NA', 'CN', 'RECIPIENTS', 'CN', 'Rslinger', 'Solberg', 'Geir', 'O', 'ENRON', 'OU', 'NA', 'CN', 'RECIPIENTS', 'CN', 'Gsolberg', 'Symes', 'Kate', 'O', 'ENRON', 'OU', 'NA', 'CN', 'RECIPIENTS', 'CN', 'Ksymes', 'Williams', 'III', 'Bill', 'O', 'ENRON', 'OU', 'NA', 'CN', 'RECIPIENTS', 'CN', 'Bwillis3', 'X', 'Cc', 'Alport', 'Kysa', 'O', 'ENRON', 'OU', 'NA', 'CN', 'RECIPIENTS', 'CN', 'Kalport', 'Symes', 'Kate', 'O', 'ENRON', 'OU', 'NA', 'CN', 'RECIPIENTS', 'CN', 'Ksymes', 'X', 'Bcc', 'X', 'Folder', 'EdMerge', 'Solberg', 'Geir', 'Inbox', 'X', 'Origin', 'SOLBERG', 'G', 'X', 'FileName', 'geir', 'solberg', '6', '26', '02', 'PST', 'Group', 'We', 'are', 'still', 'short', '50', 'ms', 'in', 'ST', 'WOM', 'on', 'peak', 'Friday', 'and', 'Saturday', 'at', '27', '00', 'For', 'Friday', 'only', 'as', 'of', 'right', 'now', 'I', 'have', 'picked', 'up', '10', 'ms', 'of', 'energy', 'flat', '24hr', 'schedule', 'I', 'bought', 'this', 'energy', 'from', 'the', 'APX', 'deal', '840719', 'at', '25', 'We', 'will', 'be', 'long', '10', 'ms', 'each', 'hour', 'in', 'position', 'manager', 'in', 'SP', '15', 'as', 'a', 'result', 'Please', 'sell', 'this', 'energy', 'in', 'the', 'off', 'peak', 'on', 'peak', 'will', 'go', 'to', 'fill', 'our', 'W', 'BOM', 'short', 'I', 'have', 'scheduled', 'an', 'HA', '24', 'purchase', 'from', 'the', 'APX', 'I', 'and', 'have', 'put', 'the', 'energy', 'into', 'the', 'ST', 'WOM', 'load', 'zone', 'Do', 'call', 'with', 'questions', 'Cell', '503', '887', '3449', 'Home', '503', '274', '0502', 'Thanks']
Sample label: solberg-g/inbox/150.

Sample text: ['Message', 'ID', '8179794', '1075841426984', 'JavaMail', 'evans', 'thyme', 'Date', 'Wed', '6', 'Feb', '2002', '04', '56', '28', '0800', 'PST', 'From', 'Jae', 'black', 'enron', 'com', 'To', 'm', 'presto', 'enron', 'com', 'Subject', 'RE', 'Contact', 'Info', 'Mime', 'Version', '1', '0', 'Content', 'Type', 'text', 'plain', 'charset', 'us', 'ascii', 'Content', 'Transfer', 'Encoding', '7bit', 'X', 'From', 'Black', 'Tamara', 'Jae', 'O', 'ENRON', 'OU', 'NA', 'CN', 'RECIPIENTS', 'CN', 'BLACK', 'X', 'To', 'Presto', 'Kevin', '78', 'O', 'ENRON', 'OU', 'NA', 'CN', 'RECIPIENTS', 'CN', 'Koresto', 'X', 'Cc', 'X', 'Bcc', 'X', 'Folder', 'EdMerge', 'Presto', 'Kevin', 'W', 'Deleted', 'Items', 'X', 'Origin', 'PRESTO', 'K', 'X', 'FileName', 'Kevin', 'presto', '12', '7', '02', 'pst', 'Thank', 'you', 'have', 'fun', 'and', 'try', 'to', 'relax', 'Original', 'Message', 'From', 'Presto', 'Kevin', 'W', 'Sent', 'Tuesday', 'February', '05', '2002', '8', '18', 'PM', 'To', 'Black', 'Tamara', 'Jae', 'Subject', 'Contact', 'Info', 'I', 'can', 'be', 'reached', 'on', 'my', 'cell', 'in', 'Florida', 'In', 'addition', 'you', 'can', 'leave', 'messages', 'with', 'the', 'hotel', 'voice', 'mail', 'I', 'am', 'staying', 'at', 'Ritz', 'Carlton', 'on', 'Key', 'Biscayne', 'I', 'will', 'also', 'be', 'checking', 'e', 'mail', 'at', 'least', 'once', 'per', 'day']
Sample label: presto-k/deleted_items/15.
```

Model is created in the model folder.