

Analyze Product Sentiment

```
In [4]: import turicreate
```

Read product review data

```
In [5]: products = turicreate.SFrame('~/.Documents/learning/UW_ML_Specialization/Cours
```

Explore data

```
In [6]: products
```

```
Out[6]:
```

name	review	rating
Planetwise Flannel Wipes	These flannel wipes are OK, but in my opinion ...	3.0
Planetwise Wipe Pouch	it came early and was not disappointed. i love ...	5.0
Annas Dream Full Quilt with 2 Shams ...	Very soft and comfortable and warmer than it ...	5.0
Stop Pacifier Sucking without tears with ...	This is a product well worth the purchase. I ...	5.0
Stop Pacifier Sucking without tears with ...	All of my kids have cried non-stop when I tried to ...	5.0
Stop Pacifier Sucking without tears with ...	When the Binky Fairy came to our house, we didn't ...	5.0
A Tale of Baby's Days with Peter Rabbit ...	Lovely book, it's bound tightly so you may no ...	4.0
Baby Tracker® - Daily Childcare Journal, ...	Perfect for new parents. We were able to keep ...	5.0
Baby Tracker® - Daily Childcare Journal, ...	A friend of mine pinned this product on Pinte ...	5.0
Baby Tracker® - Daily Childcare Journal, ...	This has been an easy way for my nanny to record ...	4.0

[183531 rows x 3 columns]

Note: Only the head of the SFrame is printed.

You can use `print_rows(num_rows=m, num_columns=n)` to print more rows and columns.

```
In [7]: products.groupby('name', operations={'count': turicreate.aggregate.COUNT()}).so
```

```
Out[7]:
```

name	count
Vulli Sophie the Giraffe Teether ...	785

Simple Wishes Hands-Free Breastpump Bra, Pink, ...	562
Infant Optics DXR-5 2.4 GHz Digital Video Baby ...	561
Baby Einstein Take Along Tunes ...	547
Cloud b Twilight Constellation Night ...	520
Fisher-Price Booster Seat, Blue/Green/Gray ...	489
Fisher-Price Rainforest Jumperoo ...	450
Graco Nautilus 3-in-1 Car Seat, Matrix ...	419
Leachco Snoogle Total Body Pillow ...	388
Regalo Easy Step Walk Thru Gate, White ...	374

[32419 rows x 2 columns]

Note: Only the head of the SFrame is printed.

Examine the reivews for the most-reviewed product

```
In [8]: giraffe_reviews = products[products['name']=='Vulli Sophie the Giraffe Teethe
```

```
In [9]: giraffe_reviews
```

```
Out[9]:
```

name	review	rating
Vulli Sophie the Giraffe Teether ...	He likes chewing on all the parts especially the ...	5.0
Vulli Sophie the Giraffe Teether ...	My son loves this toy and fits great in the diaper ...	5.0
Vulli Sophie the Giraffe Teether ...	There really should be a large warning on the ...	1.0
Vulli Sophie the Giraffe Teether ...	All the moms in my moms' group got Sophie for ...	5.0
Vulli Sophie the Giraffe Teether ...	I was a little skeptical on whether Sophie was ...	5.0
Vulli Sophie the Giraffe Teether ...	I have been reading about Sophie and was going ...	5.0
Vulli Sophie the Giraffe Teether ...	My neice loves her sophie and has spent hours ...	5.0

Vulli Sophie the Giraffe Teether ...	What a friendly face! And those mesmerizing ...	5.0
Vulli Sophie the Giraffe Teether ...	We got this just for my son to chew on instea ...	5.0
Vulli Sophie the Giraffe Teether ...	My baby seems to like this toy, but I could ...	3.0

[? rows x 3 columns]

Note: Only the head of the SFrame is printed. This SFrame is lazily evaluated.

```
In [10]: len(giraffe_reviews)
```

```
Out[10]: 785
```

```
In [11]: giraffe_reviews['rating'].show()
```

Materializing SArray

Distribution of Values [float]



Building a sentiment classifier

Build word count vectors

```
In [12]: products['word_count'] = turicreate.text_analytics.count_words(products['review'])
```

```
In [13]: products
```

```
Out[13]:
```

name	review	rating	word_count
Planetwise Flannel Wipes	These flannel wipes are OK, but in my opinion ...	3.0	{'handles': 1.0, 'stripping': 1.0, ...}
Planetwise Wipe Pouch	it came early and was not disappointed. i love ...	5.0	{'recommend': 1.0, 'disappointed': 1.0, ...}
Annas Dream Full Quilt with 2 Shams ...	Very soft and comfortable and warmer than it ...	5.0	{'quilt': 1.0, 'the': 1.0, 'than': 1.0, 'fu ...}
Stop Pacifier Sucking without tears with ...	This is a product well worth the purchase. I ...	5.0	{'tool': 1.0, 'clever': 1.0, 'binky': 2.0, ...}
Stop Pacifier Sucking without tears with ...	All of my kids have cried non-stop when I tried to ...	5.0	{'rock': 1.0, 'many': 1.0, 'headaches': 1.0, ...}
Stop Pacifier Sucking without tears with ...	When the Binky Fairy came to our house, we didn't ...	5.0	{'thumb': 1.0, 'or': 1.0, 'break': 1.0, 'trying': ...}
A Tale of Baby's Days with Peter Rabbit ...	Lovely book, it's bound tightly so you may no ...	4.0	{'for': 1.0, 'barnes': 1.0, 'at': 1.0, 'is': ...}
Baby Tracker® - Daily Childcare Journal, ...	Perfect for new parents. We were able to keep ...	5.0	{'right': 1.0, 'because': 1.0, 'questions': 1.0, ...}
Baby Tracker® - Daily Childcare Journal, ...	A friend of mine pinned this product on Pinte ...	5.0	{'like': 1.0, 'and': 1.0, 'changes': 1.0, 'the': ...}
Baby Tracker® - Daily Childcare Journal, ...	This has been an easy way for my nanny to record ...	4.0	{'in': 1.0, 'pages': 1.0, 'out': 1.0, 'run': 1.0, ...}

[183531 rows x 4 columns]

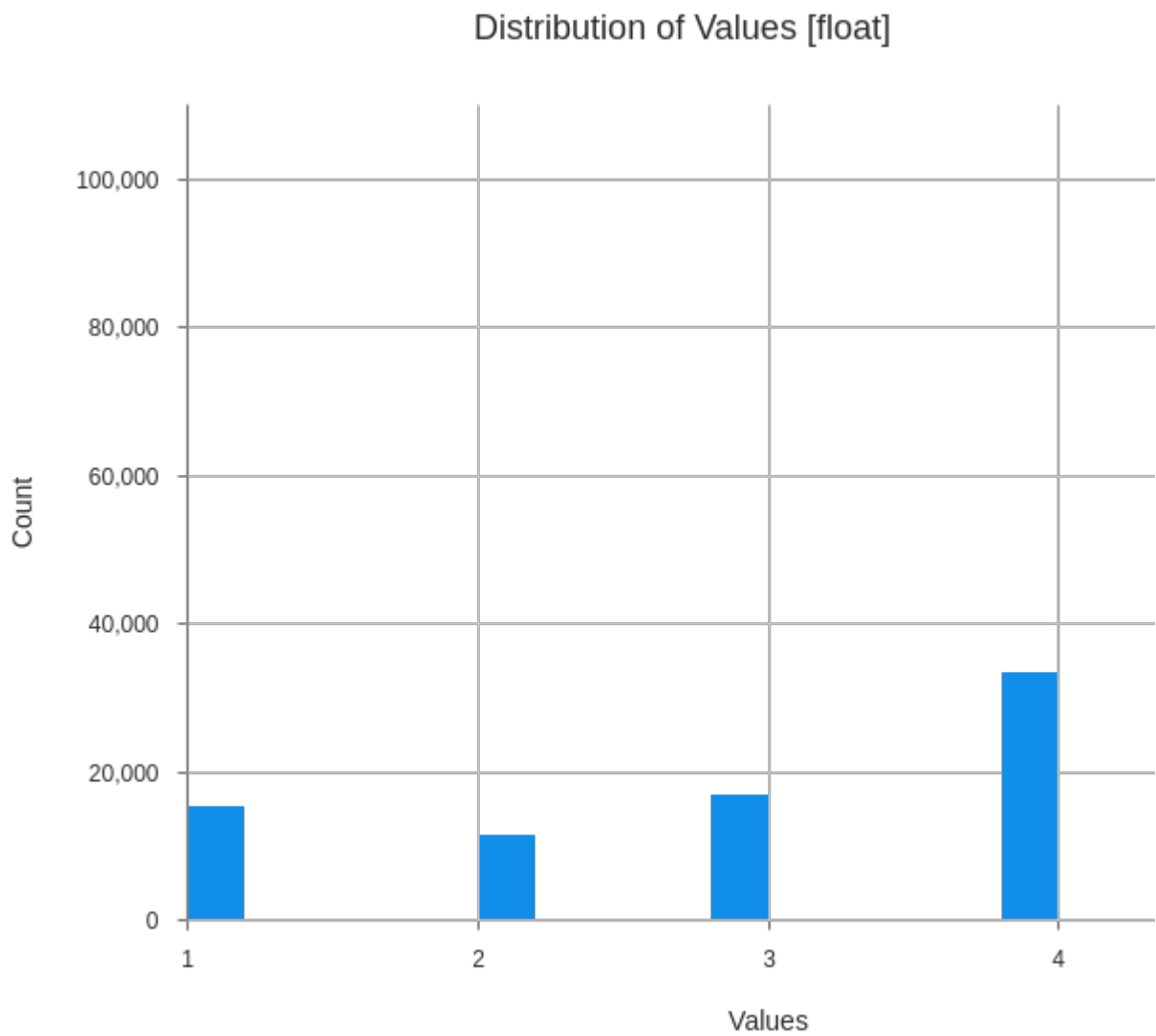
Note: Only the head of the SFrame is printed.

You can use `print_rows(num_rows=m, num_columns=n)` to print more rows and columns.

Define what is positive and negative sentiment

```
In [14]: products['rating'].show()
```

Materializing SArray



```
In [15]: #ignore all 3* reviews  
products = products[products['rating']!= 3]
```

```
In [16]: #positive sentiment = 4-star or 5-star reviews  
products['sentiment'] = products['rating'] >= 4
```

```
In [17]: products
```

Out[17]:

name	review	rating	word_count	sentiment
Planetwise Wipe Pouch	it came early and was not disappointed. i love ...	5.0	{'recommend': 1.0, 'disappointed': 1.0, ...}	1
Annas Dream Full Quilt with 2 Shams ...	Very soft and comfortable and warmer than it ...	5.0	{'quilt': 1.0, 'the': 1.0, 'than': 1.0, 'fu ...}	1
Stop Pacifier Sucking without tears with ...	This is a product well worth the purchase. I ...	5.0	{'tool': 1.0, 'clever': 1.0, 'binky': 2.0, ...}	1
Stop Pacifier Sucking without tears with ...	All of my kids have cried non-stop when I tried to ...	5.0	{'rock': 1.0, 'many': 1.0, 'headaches': 1.0, ...}	1
Stop Pacifier Sucking without tears with ...	When the Binky Fairy came to our house, we didn't ...	5.0	{'thumb': 1.0, 'or': 1.0, 'break': 1.0, 'trying': ...}	1
A Tale of Baby's Days with Peter Rabbit ...	Lovely book, it's bound tightly so you may no ...	4.0	{'for': 1.0, 'barnes': 1.0, 'at': 1.0, 'is': ...}	1
Baby Tracker® - Daily Childcare Journal, ...	Perfect for new parents. We were able to keep ...	5.0	{'right': 1.0, 'because': 1.0, 'questions': 1.0, ...}	1
Baby Tracker® - Daily Childcare Journal, ...	A friend of mine pinned this product on Pinte ...	5.0	{'like': 1.0, 'and': 1.0, 'changes': 1.0, 'the': ...}	1
Baby Tracker® - Daily Childcare Journal, ...	This has been an easy way for my nanny to record ...	4.0	{'in': 1.0, 'pages': 1.0, 'out': 1.0, 'run': 1.0, ...}	1
Baby Tracker® - Daily Childcare Journal, ...	I love this journal and our nanny uses it ...	4.0	{'tracker': 1.0, 'now': 1.0, 'its': 1.0, 'sti ...}	1

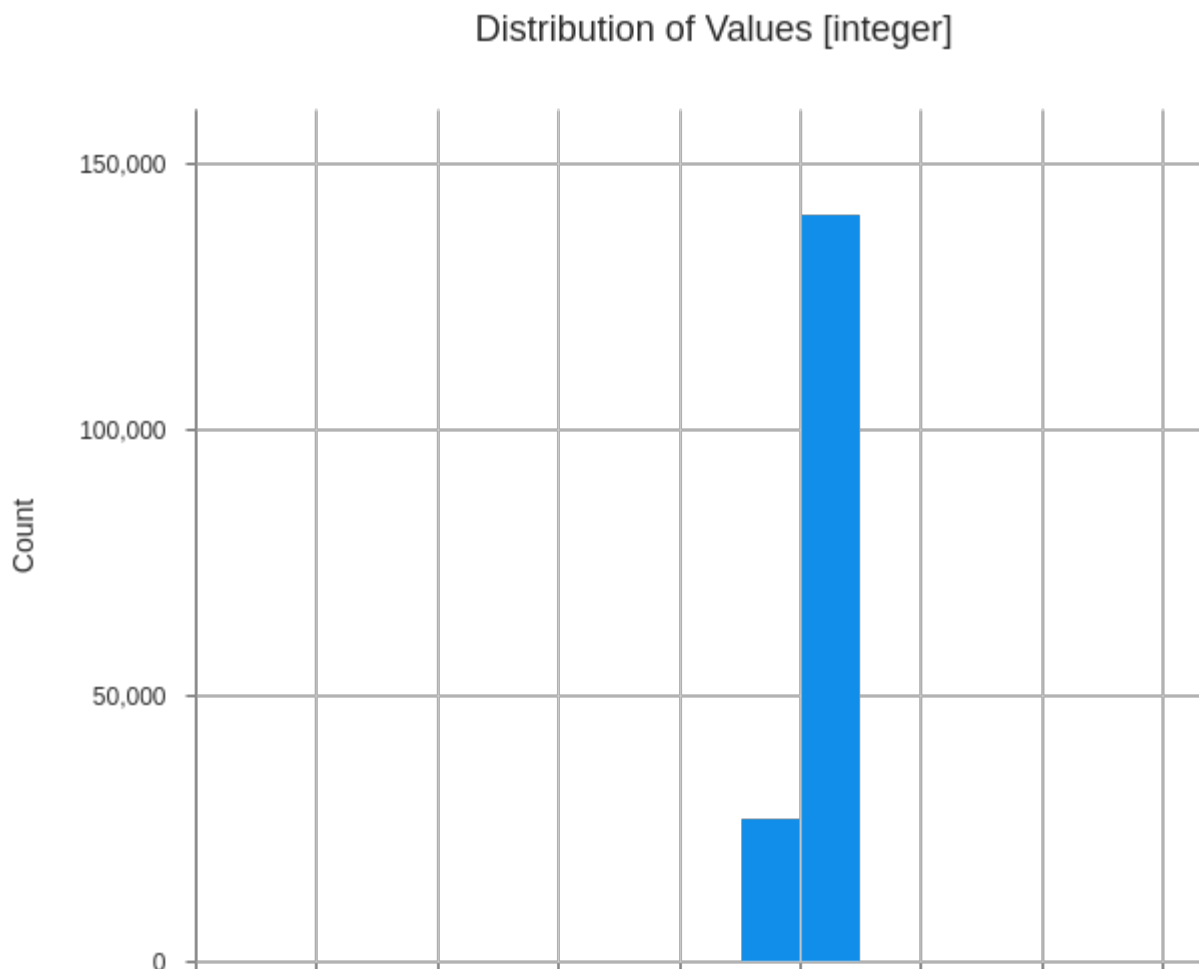
[166752 rows x 5 columns]

Note: Only the head of the SFrame is printed.

You can use `print_rows(num_rows=m, num_columns=n)` to print more rows and columns.

In [18]: `products['sentiment'].show()`

Materializing SArray



Train our sentiment classifier

```
In [19]: train_data, test_data = products.random_split(.8, seed=0)
```

```
In [20]: sentiment_model = turicreate.logistic_classifier.create(train_data,target='se
```

Logistic regression:

```
Number of examples      : 133448
```

Number of classes : 2

Number of feature columns : 1

Number of unpacked features : 57356

Number of coefficients : 57357

Starting L-BFGS

```
+-----+-----+-----+-----+-----+
+-----+
| Iteration | Passes   | Step size | Elapsed Time | Training Accuracy |
| Validation Accuracy |
```

```

+-----+-----+-----+-----+-----+
+-----+
| 0      | 4      | 0.250000 | 1.737889 | 0.841421 |
| 0.840019 |      |          |          |          |
| 1      | 9      | 3.250000 | 2.740986 | 0.931359 |
| 0.911362 |      |          |          |          |
| 2      | 11     | 2.669978 | 3.250644 | 0.938650 |
| 0.916466 |      |          |          |          |
| 3      | 12     | 2.669978 | 3.588654 | 0.927417 |
| 0.901814 |      |          |          |          |
| 4      | 14     | 1.326072 | 4.101491 | 0.945200 |
| 0.918088 |      |          |          |          |
| 9      | 20     | 1.326072 | 5.933808 | 0.977654 |
| 0.917698 |      |          |          |          |
+-----+-----+-----+-----+-----+
+-----+

```

```
In [21]: sentiment_model.evaluate(test_data)
```

```
Out[21]: {'accuracy': 0.9176975738650012,
          'auc': 0.9258242975424673,
          'confusion_matrix': Columns:
              target_label    int
              predicted_label int
              count          int
```

Rows: 4

Data:

```

+-----+-----+-----+
| target_label | predicted_label | count |
+-----+-----+-----+
|      0      |      1         | 1397 |
|      1      |      0         | 1344 |
|      0      |      0         | 3931 |
|      1      |      1         | 26632|
+-----+-----+-----+

```

```

[4 rows x 3 columns],
'f1_score': 0.951057941255245,
'log_loss': 0.33047871872321155,
'precision': 0.9501587641371436,
'recall': 0.9519588218472976,
'roc_curve': Columns:
              threshold    float
              fpr         float
              tpr         float
              p           int
              n           int

```

Rows: 1001

Data:

```

+-----+-----+-----+-----+-----+
| threshold |          fpr          |          tpr          | p | n |
+-----+-----+-----+-----+-----+

```



```
+-----+-----+-----+-----+
| 0.0 | 1.0 | 1.0 | 27976 | 5328 |
| 0.001 | 0.698948948948949 | 0.9933514440949385 | 27976 | 5328 |
| 0.002 | 0.6619744744744744 | 0.9922076065198742 | 27976 | 5328 |
| 0.003 | 0.6385135135135135 | 0.9909922790963683 | 27976 | 5328 |
| 0.004 | 0.62256006006006 | 0.9903846153846154 | 27976 | 5328 |
| 0.005 | 0.6112987987987988 | 0.989848441521304 | 27976 | 5328 |
| 0.006 | 0.6002252252252253 | 0.9894195024306548 | 27976 | 5328 |
| 0.007 | 0.589527027027027 | 0.9888475836431226 | 27976 | 5328 |
| 0.008 | 0.5816441441441441 | 0.9883828996282528 | 27976 | 5328 |
| 0.009 | 0.574512012012012 | 0.9880611953102659 | 27976 | 5328 |
+-----+-----+-----+-----+
```

[1001 rows x 5 columns]

Note: Only the head of the SFrame is printed.

You can use `print_rows(num_rows=m, num_columns=n)` to print more rows and columns.

Apply the sentiment classifier to better understand the Giraffe reviews

```
In [22]: products['predicted_sentiment'] = sentiment_model.predict(products, output_ty
```

```
In [23]: products
```

```
Out[23]:
```

name	review	rating	word_count	sentiment
Planetwise Wipe Pouch	it came early and was not disappointed. i love ...	5.0	{'recommend': 1.0, 'disappointed': 1.0, ...	1
Annas Dream Full Quilt with 2 Shams ...	Very soft and comfortable and warmer than it ...	5.0	{'quilt': 1.0, 'the': 1.0, 'than': 1.0, 'fu ...	1
Stop Pacifier Sucking without tears with ...	This is a product well worth the purchase. I ...	5.0	{'tool': 1.0, 'clever': 1.0, 'binky': 2.0, ...	1
Stop Pacifier Sucking without tears with ...	All of my kids have cried non-stop when I tried to ...	5.0	{'rock': 1.0, 'many': 1.0, 'headaches': 1.0, ...	1
Stop Pacifier Sucking without tears with ...	When the Binky Fairy came to our house, we didn't ...	5.0	{'thumb': 1.0, 'or': 1.0, 'break': 1.0, 'trying': ...	1
A Tale of Baby's Days with Peter Rabbit ...	Lovely book, it's bound tightly so you may no ...	4.0	{'for': 1.0, 'barnes': 1.0, 'at': 1.0, 'is': ...	1
Baby Tracker® - Daily Childcare Journal, ...	Perfect for new parents. We were able to keep ...	5.0	{'right': 1.0, 'because': 1.0, 'questions': 1.0, ...	1
Baby Tracker® - Daily Childcare Journal, ...	A friend of mine pinned this product on Pinte ...	5.0	{'like': 1.0, 'and': 1.0, 'changes': 1.0, 'the': ...	1
Baby Tracker® - Daily Childcare Journal, ...	This has been an easy way for my nanny to record ...	4.0	{'in': 1.0, 'pages': 1.0, 'out': 1.0, 'run': 1.0, ...	1
Baby Tracker® - Daily Childcare Journal, ...	I love this journal and our nanny uses it ...	4.0	{'tracker': 1.0, 'how': 1.0, 'its': 1.0, 'sti ...	1

predicted_sentiment

0.9997307390047091

0.998508336831661

0.9997489042499881

0.9999916625399973

0.9999999514462167

0.9999146735569904

0.9999916615904652

0.9999938843594008

0.9961247617006412

0.9999999920460633

[166752 rows x 6 columns]

Note: Only the head of the SFrame is printed.

You can use `print_rows(num_rows=m, num_columns=n)` to print more rows and columns.

In [24]: giraffe_reviews = products[products['name']== 'Vulli Sophie the Giraffe Teeth

In [25]: giraffe_reviews

name	review	rating	word_count	sentiment
Vulli Sophie the Giraffe Teether ...	He likes chewing on all the parts especially the ...	5.0	{'purchase': 1.0, 'teething': 1.0, ...	1
Vulli Sophie the Giraffe Teether ...	My son loves this toy and fits great in the diaper ...	5.0	{'a': 1.0, 'is': 1.0, 'when': 1.0, 'him': 1.0, ...	1
Vulli Sophie the Giraffe Teether ...	There really should be a large warning on the ...	1.0	{'made': 1.0, 'of': 1.0, 'packaging': 1.0, 'no': ...	0
Vulli Sophie the Giraffe Teether ...	All the moms in my moms' group got Sophie for ...	5.0	{'another': 1.0, 'out': 1.0, 'run': 1.0, 'lost': ...	1
Vulli Sophie the Giraffe Teether ...	I was a little skeptical on whether Sophie was ...	5.0	{'disappointed': 1.0, 'will': 1.0, 'take': ...	1
Vulli Sophie the Giraffe Teether ...	I have been reading about Sophie and was going ...	5.0	{'late': 1.0, 'perfect': 1.0, 'pack': 1.0, 'on ...	1
Vulli Sophie the Giraffe Teether ...	My neice loves her sophie and has spent hours ...	5.0	{'delight': 1.0, 'in': 1.0, 'other': 1.0, ...	1
Vulli Sophie the Giraffe Teether ...	What a friendly face! And those mesmerizing ...	5.0	{'inside': 1.0, 'water': 1.0, 'don': 1.0, 'up': ...	1

Vulli Sophie the Giraffe Teether ...	We got this just for my son to chew on instea ...	5.0	{'its': 1.0, 'fine': 1.0, 'is': 1.0, 'which': 1.0, ...	1
Vulli Sophie the Giraffe Teether ...	This product is without a doubt the best on the ...	5.0	{'belongs': 1.0, 'dog': 1.0, 'if': 1.0, 'bewa ...	1
predicted_sentiment				
0.9993655365682312				
0.9998633791689631				
0.2545268197808716				
0.9165688083915023				
0.6855768205885231				
0.99999994452112				
0.9979351181093518				
0.9999745004834384				
0.9460144428356823				
0.9999999721665869				

[? rows x 6 columns]

Note: Only the head of the SFrame is printed. This SFrame is lazily evaluated.

Sort the Giraffe reviews according to predicted sentiment

```
In [26]: giraffe_reviews = giraffe_reviews.sort('predicted_sentiment', ascending=False)
```

```
In [27]: giraffe_reviews
```

Out[27]:	name	review	rating	word_count	sentiment
	Vulli Sophie the Giraffe Teether ...	Sophie, oh Sophie, your time has come. My ...	5.0	{'11': 1.0, 'prisrob': 1.0, '12': 1.0, 'who': ...	1
	Vulli Sophie the Giraffe Teether ...	I'll be honest...I bought this toy because all the ...	4.0	{'around': 1.0, 'explore': 1.0, 'they': ...	1
	Vulli Sophie the Giraffe Teether ...	As a mother of 16month old twins; I bought ...	5.0	{'will': 1.0, '15months': 1.0, 'would': 2.0, ...	1
	Vulli Sophie the Giraffe Teether ...	We got this little giraffe as a gift from a ...	5.0	{'out': 1.0, 've': 1.0, 'would': 1.0, 'enough': ...	1
	Vulli Sophie the Giraffe Teether ...	As every mom knows, you always want to give your ...	5.0	{'whether': 1.0, 'neutral': 1.0, 'gend ...	1

Vulli Sophie the Giraffe Teether ...	My Mom-in-Law bought Sophie for my son whe ...	5.0	{'penny': 1.0, 'little': 1.0, 'perfect': 1.0, ...	1
Vulli Sophie the Giraffe Teether ...	My 4 month old son is teething, and I've tried ...	4.0	{'worth': 1.0, 'works': 1.0, 'teether': 1.0, ...	1
Vulli Sophie the Giraffe Teether ...	Let me just start off by addressing the choking ...	5.0	{'question': 1.0, 'must': 1.0, 'overall': 1.0, ...	1
Vulli Sophie the Giraffe Teether ...	I'm not sure why Sophie is such a hit with the ...	4.0	{'makers': 1.0, 'or': 1.0, 'take': 1.0, 'can': ...	1
Vulli Sophie the Giraffe Teether ...	I admit, I didn't get Sophie the Giraffe at ...	4.0	{'dye': 1.0, 'of': 1.0, 'cause': 1.0, 'fade': ...	1
predicted_sentiment				
1.0				
1.0				
1.0				
0.9999999999998377				
0.9999999999998284				
0.9999999999997958				
0.9999999999994914				
0.9999999999941254				
0.999999999987423				
0.9999999999829475				

[723 rows x 6 columns]

Note: Only the head of the SFrame is printed.

You can use `print_rows(num_rows=m, num_columns=n)` to print more rows and columns.

In [28]: `giraffe_reviews.tail()`

Out[28]:	name	review	rating	word_count	sentiment
	Vulli Sophie the Giraffe Teether ...	My 7 1/2 month old grandbaby was sittng up ...	1.0	{'sopie': 1.0, 'with': 1.0, 'be': 1.0, 'shou ...	0
	Vulli Sophie the Giraffe Teether ...	I was so looking forward to getting this for my ...	1.0	{'amazon': 1.0, 'back': 1.0, 'by': 1.0, 'more': ...	0
	Vulli Sophie the Giraffe Teether ...	Received the product and smells like cheap rub ...	1.0	{'was': 1.0, 'as': 1.0, 'still': 1.0, 'but': ...	0
	Vulli Sophie the Giraffe Teether ...	I got one of these as a showe gift that my baby ...	1.0	{'typical': 1.0, 'paint': 1.0, 'came': 1.0, 'mi ...	0
	Vulli Sophie the Giraffe Teether ...	When we first got it I thought did my ...	2.0	{'mom': 1.0, 'teethers': 1.0, 'btw': 1.0, 'oth ...	0

Vulli Sophie the Giraffe Teether ...	When I received this the paint was peeling off in ...	1.0	{'worth': 1.0, 'for': 1.0, 'about': 1.0, ...	0
Vulli Sophie the Giraffe Teether ...	"Sophie the Giraffe" has tested positive for ...	1.0	{'ingest': 1.0, 'they': 1.0, 'naturally': 1.0, ...	0
Vulli Sophie the Giraffe Teether ...	My son (now 2.5) LOVED his Sophie, and I bought ...	1.0	{'exaggerated': 1.0, 'a': 3.0, 't': 2.0, 'stran ...	0
Vulli Sophie the Giraffe Teether ...	I wanted to love this product and was excited ...	1.0	{'risk': 1.0, 'ready': 1.0, 'bummed': 1.0, ...	0
Vulli Sophie the Giraffe Teether ...	This children's toy is nostalgic and very cute. ...	1.0	{'amazon': 1.0, 'from': 1.0, 'one': 1.0, 'by': ...	0

predicted_sentiment

1.911074019565002e-06

6.547801686044981e-07

3.864236397438825e-07

2.237822515933668e-07

1.9353955281810417e-07

1.6900753980977612e-07

1.1748826795730016e-07

5.364933427018125e-11

3.1090352704607707e-13

4.119269639396506e-15

[10 rows x 6 columns]

Show the most positive reviews

In [29]: giraffe_reviews[0]['review']

Out[29]: "Sophie, oh Sophie, your time has come. My granddaughter, Violet is 5 months old and starting to teeth. What joy little Sophie brings to Violet. Sophie is made of a very pliable rubber that is sturdy but not tough. It is quite easy for Violet to twist Sophie into unheard of positions to get Sophie into her mouth. The little nose and hooves fit perfectly into small mouths, and the drooling has purpose. The paint on Sophie is food quality. Sophie was born in 1961 in France. The maker had wondered why there was nothing available for babies and made Sophie from the finest rubber, phthalate-free on St Sophie's Day, thus the name was born. Since that time millions of Sophie's populate the world. She is soft and for babies little hands easy to grasp. Violet especially loves the bumpy head and horns of Sophie. Sophie has a long neck that easy to grasp and twist. She has lovely, sizable spots that attract Violet's attention. Sophie has happy little squeaks that bring squeals of delight from Violet. She is able to make Sophie squeak and that brings much joy. Sophie's smooth skin is soothing to Violet's little gums. Sophie is 7 inches tall and is the exact correct size for babies to hold and love. As you well know the first thing babies grasp, goes into their mouths- how wonderful to have a toy that stimulates all of the senses and helps with the issue of teething. Sophie is small enough to fit into any size pocket or bag. Sophie is the perfect find for babies from a few months to a year old. How wonderful to hear the giggles and

laughs that emanate from babies who find Sophie irresistible. Viva La Sophie!
"Highly Recommended" - January 12, 11, 00"

```
In [30]: giraffe_reviews[1]['review']
```

```
Out[30]: 'I\'ll be honest...I bought this toy because all the hip parents seem to have one too and I wanted to be a part of the "hip parent" crowd. The price-tag was somewhat of a deterrent but I prevailed and purchased this teether for my daughter. At first, Lily didn\'t know what to make of Sophie and showed little interest in the polka-dotted creature. I continued to introduce Lily to Sophie and kept the toy in the carrier so that it was on-hand during transitions. Eventually, Lily discovered what a wonderful experience it was to gnaw on the hooves and ears and these two have never been far apart since. Lily really enjoys gumming all the different parts of Sophie like no other teether we have. The size of the toy is great as it is somewhat substantial and so easy for a little one to grasp and hold onto. Lily really enjoys hearing Sophie squeak and will smile whenever Sophie makes a noise or pops her head up from Mommy\'s lap to say hello. People have stopped and commented on Sophie and to them I have stated, "It\'s worth every penny." I can\'t imagine not having this toy, it has become part and parcel with Lily\'s daily existence. She is soothed by it, loves to chew on it and seems endlessly entertained by it. Someday, Sophie will have earned her retirement. She will relocate to Lily\'s keepsake box. But until then, this little French Giraffe will embark on many adventures alongside my daughter as they explore this big world around them.'
```

```
In [31]: giraffe_reviews[1]
```

```
Out[31]: {'name': 'Vulli Sophie the Giraffe Teether',  
  'review': 'I\'ll be honest...I bought this toy because all the hip parents seem to have one too and I wanted to be a part of the "hip parent" crowd. The price-tag was somewhat of a deterrent but I prevailed and purchased this teether for my daughter. At first, Lily didn\'t know what to make of Sophie and showed little interest in the polka-dotted creature. I continued to introduce Lily to Sophie and kept the toy in the carrier so that it was on-hand during transitions. Eventually, Lily discovered what a wonderful experience it was to gnaw on the hooves and ears and these two have never been far apart since. Lily really enjoys gumming all the different parts of Sophie like no other teether we have. The size of the toy is great as it is somewhat substantial and so easy for a little one to grasp and hold onto. Lily really enjoys hearing Sophie squeak and will smile whenever Sophie makes a noise or pops her head up from Mommy\'s lap to say hello. People have stopped and commented on Sophie and to them I have stated, "It\'s worth every penny." I can\'t imagine not having this toy, it has become part and parcel with Lily\'s daily existence. She is soothed by it, loves to chew on it and seems endlessly entertained by it. Someday, Sophie will have earned her retirement. She will relocate to Lily\'s keepsake box. But until then, this little French Giraffe will embark on many adventures alongside my daughter as they explore this big world around them.',  
  'rating': 4.0,  
  'word_count': {'around': 1.0,  
    'explore': 1.0,  
    'they': 1.0,  
    'adventures': 1.0,  
    'giraffe': 1.0,  
    'box': 1.0,  
    'relocate': 1.0,  
    'earned': 1.0,  
    'someday': 1.0,  
    'entertained': 1.0,  
    'until': 1.0,
```

'seems': 1.0,
'loves': 1.0,
'by': 2.0,
'soothed': 1.0,
'many': 1.0,
'she': 2.0,
'existence': 1.0,
'daily': 1.0,
'with': 1.0,
'having': 1.0,
'not': 1.0,
'every': 1.0,
'worth': 1.0,
'stopped': 1.0,
'alongside': 1.0,
'people': 1.0,
'hello': 1.0,
'mommy': 1.0,
'penny': 1.0,
'up': 1.0,
'head': 1.0,
'pops': 1.0,
'world': 1.0,
'or': 1.0,
'noise': 1.0,
'makes': 1.0,
'retirement': 1.0,
'whenever': 1.0,
'smile': 1.0,
'will': 4.0,
'make': 1.0,
'on': 5.0,
'lily': 7.0,
'lap': 1.0,
'since': 1.0,
'my': 2.0,
'didn': 1.0,
'eventually': 1.0,
'what': 2.0,
'purchased': 1.0,
'prevailed': 1.0,
'deterent': 1.0,
'different': 1.0,
'somewhat': 2.0,
'showed': 1.0,
'parents': 1.0,
'big': 1.0,
'french': 1.0,
'crowd': 1.0,
's': 4.0,
'grasp': 1.0,
'parcel': 1.0,
'hip': 2.0,
'daughter': 2.0,
'and': 13.0,
'hand': 1.0,
'like': 1.0,
'hold': 1.0,
'commented': 1.0,
'price': 1.0,

'from': 1.0,
'sophie': 7.0,
't': 2.0,
'imagine': 1.0,
'a': 5.0,
'then': 1.0,
'we': 1.0,
'be': 2.0,
'dotted': 1.0,
'endlessly': 1.0,
'discovered': 1.0,
'gumming': 1.0,
'bought': 1.0,
'too': 1.0,
'one': 2.0,
'll': 1.0,
'chew': 1.0,
'teether': 2.0,
'to': 11.0,
'as': 2.0,
'have': 6.0,
'honest': 1.0,
'her': 2.0,
'tag': 1.0,
'hearing': 1.0,
'i': 7.0,
'introduce': 1.0,
'stated': 1.0,
'little': 3.0,
'two': 1.0,
'for': 2.0,
'seem': 1.0,
'was': 3.0,
'the': 10.0,
'of': 6.0,
'this': 5.0,
'parent': 1.0,
'interest': 1.0,
'can': 1.0,
'so': 2.0,
'in': 2.0,
'embark': 1.0,
'polka': 1.0,
'first': 1.0,
'creature': 1.0,
'but': 2.0,
'enjoys': 2.0,
'continued': 1.0,
'onto': 1.0,
'wanted': 1.0,
'kept': 1.0,
'part': 2.0,
'hooves': 1.0,
'during': 1.0,
'substantial': 1.0,
'carrier': 1.0,
'because': 1.0,
'that': 1.0,
'been': 1.0,
'it': 8.0,


```

'transitions': 1.0,
'wonderful': 1.0,
'gnaw': 1.0,
'say': 1.0,
'experience': 1.0,
'has': 1.0,
'them': 2.0,
'ears': 1.0,
'all': 2.0,
'other': 1.0,
'these': 1.0,
'keepsake': 1.0,
'never': 1.0,
'far': 1.0,
'apart': 1.0,
'really': 2.0,
'parts': 1.0,
'no': 1.0,
'size': 1.0,
'at': 1.0,
'is': 3.0,
'great': 1.0,
'become': 1.0,
'toy': 4.0,
'squeak': 1.0,
'know': 1.0,
'easy': 1.0},
'sentiment': 1,
'predicted_sentiment': 1.0}

```

Most negative reivews

```
In [32]: giraffe_reviews[-1]['review']
```

```
Out[32]: "This children's toy is nostalgic and very cute. However, there is a distinct
rubber smell and a very odd taste, yes I tried it, that my baby did not enjo
y. Also, if it is soiled it is extremely difficult to clean as the rubber is
a kind of porus material and does not clean well. The final thing is the sque
aking device inside which stopped working after the first couple of days. I r
eturned this item feeling I had overpaid for a toy that was defective and did
not meet my expectations. Please do not be swayed by the cute packaging and h
ype surrounding it as I was. One more thing, I was given a full refund from Am
azon without any problem."
```

```
In [33]: giraffe_reviews[-2]['review']
```

```
Out[33]: 'I wanted to love this product and was excited to buy it when I became pregna
nt but am now hesitant to let my baby use it after reading about the recall i
n Europe. Apparently, as I understand it, their toxin standards of measuremen
t are lower than ours so they have not been recalled here (apparently we are
OK with low levels of nitrates in the toys our children put in their mouths,
but Europeans are not...hmmm)...Be that as it may, toxins registering even CL
OSE to a dangerous level made me nervous about using. After digging around on
line I did discover that the company claims to have changed the product after
a certain date and lists manufacturing codes so you can check yours (those li
sted were made after a certain date and are said to be safer). Sadly mine was
not made after the &#34;improved&#34; date but I could not return it because
there was no formal recall in our country. I considered returning it and hunt
```

ing for one with an approved manufacturing date but man that was just too muc

In [34]: `# Assignment questions..quiz..`

In [35]: `selected_words = ['awesome', 'great', 'fantastic', 'amazing', 'love', 'horrib`

In [36]: `products`

Out[36]:

name	review	rating	word_count	sentiment
------	--------	--------	------------	-----------

Planetwise Wipe Pouch	it came early and was not disappointed. i love ...	5.0	{'recommend': 1.0, 'disappointed': 1.0, ...	1
Annas Dream Full Quilt with 2 Shams ...	Very soft and comfortable and warmer than it ...	5.0	{'quilt': 1.0, 'the': 1.0, 'than': 1.0, 'fu ...	1
Stop Pacifier Sucking without tears with ...	This is a product well worth the purchase. I ...	5.0	{'tool': 1.0, 'clever': 1.0, 'binky': 2.0, ...	1
Stop Pacifier Sucking without tears with ...	All of my kids have cried non-stop when I tried to ...	5.0	{'rock': 1.0, 'many': 1.0, 'headaches': 1.0, ...	1
Stop Pacifier Sucking without tears with ...	When the Binky Fairy came to our house, we didn't ...	5.0	{'thumb': 1.0, 'or': 1.0, 'break': 1.0, 'trying': ...	1
A Tale of Baby's Days with Peter Rabbit ...	Lovely book, it's bound tightly so you may no ...	4.0	{'for': 1.0, 'barnes': 1.0, 'at': 1.0, 'is': ...	1
Baby Tracker®; - Daily Childcare Journal, ...	Perfect for new parents. We were able to keep ...	5.0	{'right': 1.0, 'because': 1.0, 'questions': 1.0, ...	1
Baby Tracker®; - Daily Childcare Journal, ...	A friend of mine pinned this product on Pinte ...	5.0	{'like': 1.0, 'and': 1.0, 'changes': 1.0, 'the': ...	1
Baby Tracker®; - Daily Childcare Journal, ...	This has been an easy way for my nanny to record ...	4.0	{'in': 1.0, 'pages': 1.0, 'out': 1.0, 'run': 1.0, ...	1
Baby Tracker®; - Daily Childcare Journal, ...	I love this journal and our nanny uses it ...	4.0	{'tracker': 1.0, 'now': 1.0, 'its': 1.0, 'sti ...	1

predicted_sentiment

0.9997307390047091

0.998508336831661

0.9997489042499881

0.9999916625399973

0.9999999514462167

0.9999146735569904

0.9999916615904652

0.9999938843594008

0.9961247617006412

0.9999999920460633

[166752 rows x 6 columns]

Note: Only the head of the SFrame is printed.

You can use `print rows(num_rows=m, num_columns=n)` to print more rows and columns.

```
In [37]: def count_word_in_arr(word_to_search, arr_elem):
         if word_to_search in arr_elem:
             print("found the word {} with count {}".format(word_to_search, arr_el
                 return arr_elem[word_to_search]
         else:
             return 0
```

```
In [38]: # For each selected word, find the new column which find the occurrence of eac
         for word_elem in selected_words:
             #print('Making new column ->'+word_elem)
             products[word_elem] = products['word_count'].apply(lambda x: count_word_i
```

```
found the word awesome with count 1.0
found the word great with count 1.0
found the word great with count 1.0
found the word great with count 2.0
found the word great with count 1.0
found the word great with count 1.0
found the word great with count 1.0
found the word great with count 2.0
found the word great with count 1.0
found the word great with count 1.0
found the word great with count 3.0
found the word great with count 1.0
found the word great with count 1.0
found the word great with count 1.0
found the word great with count 1.0
found the word great with count 1.0
found the word great with count 1.0
found the word great with count 1.0
found the word great with count 2.0
found the word great with count 2.0
found the word great with count 1.0
found the word great with count 1.0
found the word great with count 2.0
found the word great with count 1.0
found the word great with count 1.0
found the word fantastic with count 1.0
found the word fantastic with count 1.0
found the word fantastic with count 1.0
found the word amazing with count 1.0
found the word love with count 1.0
found the word love with count 2.0
found the word love with count 1.0
found the word love with count 2.0
found the word love with count 1.0
found the word love with count 1.0
found the word love with count 1.0
found the word love with count 1.0
found the word love with count 1.0
found the word love with count 1.0
found the word love with count 1.0
```

```

found the word love with count 2.0
found the word love with count 1.0
found the word love with count 1.0
found the word love with count 1.0
found the word love with count 1.0
found the word love with count 1.0
found the word love with count 1.0
found the word love with count 1.0
found the word love with count 1.0
found the word love with count 3.0
found the word love with count 1.0
found the word love with count 1.0

```

In [39]: products

```

Out[39]:
      name      review      rating      word_count      sentiment
0  Planetwise Wipe Pouch  it came early and was not  5.0  {'recommend': 1.0,  1
      disappointed. i love ...
1  Annas Dream Full Quilt  Very soft and comfortable  5.0  {'quilt': 1.0, 'the':  1
      with 2 Shams ...    and warmer than it ...    1.0, 'than': 1.0, 'fu ...
2  Stop Pacifier Sucking  This is a product well  5.0  {'tool': 1.0, 'clever':  1
      without tears with ...  worth the purchase. I ...    1.0, 'binky': 2.0, ...
3  Stop Pacifier Sucking  All of my kids have cried  5.0  {'rock': 1.0, 'many':  1
      without tears with ...  non-stop when I tried to ...    1.0, 'headaches': 1.0, ...
4  Stop Pacifier Sucking  When the Binky Fairy  5.0  {'thumb': 1.0, 'or': 1.0,  1
      without tears with ...  came ...    'break': 1.0, 'trying': ...
5  A Tale of Baby's Days  Lovely book, it's bound  4.0  {'for': 1.0, 'barnes':  1
      with Peter Rabbit ...  tightly so you may no ...    1.0, 'at': 1.0, 'is': ...
6  Baby Tracker&reg; -  Perfect for new parents.  5.0  {'right': 1.0, 'because':  1
      Daily              We were able to keep ...    1.0, 'questions': 1.0, ...
7  Baby Tracker&reg; -  A friend of mine pinned  5.0  {'like': 1.0, 'and': 1.0,  1
      Daily              this product on Pinte ...    'changes': 1.0, 'the': ...
8  Baby Tracker&reg; -  This has been an easy  4.0  {'in': 1.0, 'pages': 1.0,  1
      Daily              way ...    'out': 1.0, 'run': 1.0, ...
9  Baby Tracker&reg; -  I love this journal and  4.0  {'tracker': 1.0, 'now':  1
      Daily              our nanny uses it ...    1.0, 'its': 1.0, 'sti ...
10 Baby Tracker&reg; -  Childcare Journal, ...

```

predicted_sentiment	awesome	great	fantastic	amazing	love	horrible	bad	t
0.9997307390047091	0.0	0.0	0.0	0.0	1.0	0	0	
0.998508336831661	0.0	0.0	0.0	0.0	0.0	0	0	
0.9997489042499881	0.0	0.0	0.0	0.0	2.0	0	0	
0.9999916625399973	0.0	1.0	0.0	0.0	1.0	0	0	
0.9999999514462167	0.0	1.0	0.0	0.0	0.0	0	0	
0.9999146735569904	0.0	0.0	0.0	0.0	0.0	0	0	

0.9999916615904652	0.0	0.0	0.0	0.0	0.0	0	0
0.9999938843594008	0.0	0.0	1.0	0.0	0.0	0	0
0.9961247617006412	0.0	0.0	0.0	0.0	0.0	0	0
0.9999999920460633	0.0	0.0	0.0	0.0	2.0	0	0

[166752 rows x 17 columns]

Note: Only the head of the SFrame is printed.

You can use `print_rows(num_rows=m, num_columns=n)` to print more rows and columns.

```
In [40]: for i in selected_words:
          print("The total occurrences of the word {} is {}".format(i, products[i].sum()))
```

```
The total occurrences of the word awesome is 3892.0
The total occurrences of the word great is 55791.0
The total occurrences of the word fantastic is 1664.0
The total occurrences of the word amazing is 2628.0
The total occurrences of the word love is 41994.0
The total occurrences of the word horrible is 1110
The total occurrences of the word bad is 4183
The total occurrences of the word terrible is 1146.0
The total occurrences of the word awful is 687
The total occurrences of the word wow is 425
The total occurrences of the word hate is 1107
```

2. Create a new sentiment analysis model using only the selected_words as features:

```
In [41]: train_data, test_data = products.random_split(0.8, seed=0)
```

```
In [42]: selected_words_model = turicreate.logistic_classifier.create(train_data, target='sentiment')
```

Logistic regression:

Number of examples	:	133448
--------------------	---	--------

Number of classes	:	2
-------------------	---	---

Number of feature columns	:	11
---------------------------	---	----

Number of unpacked features	:	11
-----------------------------	---	----

Number of coefficients	:	12
------------------------	---	----

Starting Newton Method

Iteration	Passes	Elapsed Time	Training Accuracy	Validation Accuracy
1	2	0.153834	0.847401	0.845874

2	3	0.239761	0.847514	0.846085
3	4	0.329678	0.847626	0.846115
4	5	0.420676	0.847708	0.846385
5	6	0.506695	0.847708	0.846385
6	7	0.596366	0.847708	0.846385

```

+-----+-----+-----+-----+-----+
-----+

```

SUCCESS: Optimal solution found.

In [43]: `selected_words_model.evaluate`

Out[43]: <bound method LogisticClassifier.evaluate of Class :
LogisticClassifier

Schema

```

-----
Number of coefficients      : 12
Number of examples        : 133448
Number of classes         : 2
Number of feature columns  : 11
Number of unpacked features : 11

```

Hyperparameters

```

-----
L1 penalty                  : 0.0
L2 penalty                  : 0.01

```

Training Summary

```

-----
Solver                      : newton
Solver iterations           : 6
Solver status               : SUCCESS: Optimal solution found.
Training time (sec)         : 0.6207

```

Settings

```

-----
Log-likelihood              : 52926.808

```

Highest Positive Coefficients

```

-----
love                        : 1.3593
(intercept)                 : 1.3366
awesome                     : 1.1335
amazing                     : 1.1001
fantastic                   : 0.8858

```

Lowest Negative Coefficients

```

-----

```

```

horrible           : -2.2513
terrible           : -2.2237
awful              : -2.0529
hate               : -1.3484
bad                : -0.9915
>

```

```
In [44]: selected_words_model.evaluate(test_data)
```

```

Out[44]: {'accuracy': 0.8463848186404036,
          'auc': 0.6935096220934976,
          'confusion_matrix': Columns:
            target_label  int
            predicted_label int
            count         int

```

Rows: 4

Data:

target_label	predicted_label	count
1	0	159
0	0	371
0	1	4957
1	1	27817

```

[4 rows x 3 columns],
'f1_score': 0.9157860082304526,
'log_loss': 0.39622654670876317,
'precision': 0.8487520595594068,
'recall': 0.9943165570488991,
'roc_curve': Columns:
  threshold      float
  fpr            float
  tpr            float
  p              int
  n              int

```

Rows: 1001

Data:

threshold	fpr	tpr	p	n
0.0	1.0	1.0	27976	5328
0.001	0.9994369369369369	1.0	27976	5328
0.002	0.9992492492492493	1.0	27976	5328
0.003	0.9990615615615616	1.0	27976	5328
0.004	0.9990615615615616	1.0	27976	5328
0.005	0.9981231231231231	1.0	27976	5328
0.006	0.9981231231231231	1.0	27976	5328
0.007	0.9979354354354354	1.0	27976	5328
0.008	0.9973723723723724	1.0	27976	5328
0.009	0.9971846846846847	1.0	27976	5328

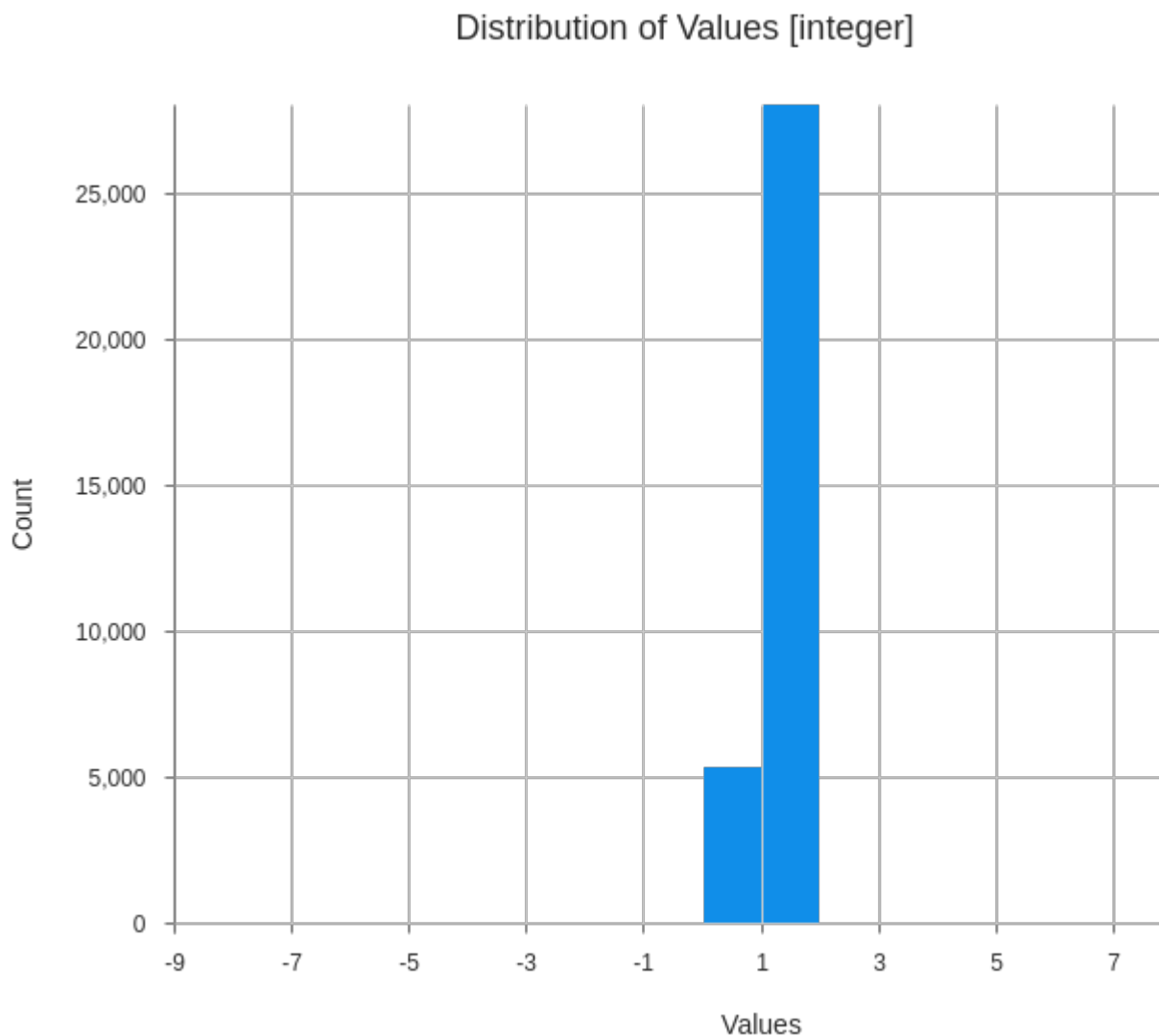
[1001 rows x 5 columns]

Note: Only the head of the SFrame is printed.

You can use `print_rows(num_rows=m, num_columns=n)` to print more rows and columns.

```
In [45]: test_data['sentiment'].show()
```

Materializing SArray



4. Interpreting the difference in performance between the models:

```
In [46]: diaper_champ_reviews = products[products['name'] == 'Baby Trend Diaper Champ']
```


In [47]: diaper_champ_reviews

```

Out[47]:
      name      review      rating      word_count      sentiment
0  Baby Trend Diaper Champ  Ok - newsflash. Diapers are just smelly. We've ...      4.0      {'convenient': 1.0, 'more': 1.0, 'trash': ...      1
1  Baby Trend Diaper Champ  My husband and I selected the Diaper "Champ" ma ...      1.0      {'system': 1.0, 'try': 1.0, 're': 1.0, 'still': ...      0
2  Baby Trend Diaper Champ  Excellent diaper disposal unit. I used it in ...      5.0      {'nose': 1.0, 'for': 2.0, 'investment': 1.0, ...      1
3  Baby Trend Diaper Champ  We love our diaper champ. It is very easy to use ...      5.0      {'out': 1.0, 'pull': 1.0, 'open': 1.0, 'pail': ...      1
4  Baby Trend Diaper Champ  Two girlfriends and two family members put me ...      5.0      {'winter': 1.0, 'outside': 1.0, 'day': ...      1
5  Baby Trend Diaper Champ  I waited to review this until I saw how it ...      4.0      {'mom': 1.0, 'huge': 1.0, 'special': 1.0, 'good': ...      1
6  Baby Trend Diaper Champ  I have had a diaper genie for almost 4 years since ...      1.0      {'yuck': 1.0, 'clean': 1.0, 'trash': 3.0, 'is': ...      0
7  Baby Trend Diaper Champ  I originally put this item on my baby registry ...      5.0      {'price': 1.0, 'suggestions': 1.0, ...      1
8  Baby Trend Diaper Champ  I am so glad I got the Diaper Champ instead of ...      5.0      {'best': 1.0, 'that': 1.0, 'will': 1.0, ...      1
9  Baby Trend Diaper Champ  We had 2 diaper Genie's both given to us as a ...      4.0      {'no': 1.0, 'regular': 1.0, 'part': 1.0, ...      1

      predicted_sentiment      awesome      great      fantastic      amazing      love      horrible      bad
0.9950122935569568      0.0      0.0      0.0      0.0      0.0      0      0
5.901414534547597e-13      0.0      0.0      0.0      0.0      0.0      0      0
0.9999996193960344      0.0      0.0      0.0      0.0      0.0      0      0
0.9999567191544844      0.0      0.0      0.0      0.0      1.0      0      0
0.9999997013199228      0.0      0.0      0.0      1.0      0.0      1      0
0.9999920758179406      0.0      0.0      0.0      0.0      0.0      0      1
0.0017908398242653782      0.0      0.0      0.0      0.0      0.0      0      0
0.9999999999465673      0.0      0.0      0.0      0.0      0.0      0      0
0.9801174413558814      0.0      0.0      0.0      0.0      0.0      0      0
0.9999454483919005      0.0      0.0      0.0      0.0      2.0      0      0

```

[? rows x 17 columns]

Note: Only the head of the SFrame is printed. This SFrame is lazily evaluated.

You can use `sf.materialize()` to force materialization.

In []:

Prediction the sentiment in the table and sort

In [48]: `diaper_champ_reviews['predicted_sentiment_2'] = sentiment_model.predict(diaper_champ_reviews['review'])`

In [49]: `diaper_champ_reviews.sort('predicted_sentiment_2', ascending=False)`

Out[49]:

name	review	rating	word_count	sentiment
Baby Trend Diaper Champ	I read a review below that can explain exactly ...	4.0	{'key': 1.0, 'have': 1.0, 'pieces': 1.0, 'betwe ...	1
Baby Trend Diaper Champ	I have never written a review for Amazon but I ...	5.0	{'priceless': 1.0, 'knows': 1.0, 'parent': ...	1
Baby Trend Diaper Champ	I originally put this item on my baby registry ...	5.0	{'price': 1.0, 'suggestions': 1.0, ...	1
Baby Trend Diaper Champ	Baby Luke can turn a clean diaper to a dirty ...	5.0	{'around': 1.0, 'any': 1.0, 't': 1.0, 'isn': ...	1
Baby Trend Diaper Champ	Diaper Champ or Diaper Genie? That was my ...	5.0	{'either': 1.0, 'be': 1.0, 't': 1.0, 'not': ...	1
Baby Trend Diaper Champ	I am one of those super-critical shoppers who ...	5.0	{'hope': 1.0, 'make': 1.0, 'slower': 1.0, ...	1
Baby Trend Diaper Champ	I LOOOVE this diaper pail! Its the easies ...	5.0	{'buy': 1.0, 'product': 1.0, 'recommend': 1.0, ...	1
Baby Trend Diaper Champ	As a first time mother, I wanted to get the best ...	5.0	{'ll': 1.0, 'baby': 1.0, 'recommended': 1.0, ...	1
Baby Trend Diaper Champ	I see that there are complaints of stinkiness ...	5.0	{'very': 1.0, 'told': 1.0, 'all': 1.0, ...	1
Baby Trend Diaper Champ	I have a 10 year old daughter and an 8 month ...	5.0	{'sorry': 1.0, 'be': 1.0, 'you': 2.0, 'sell': 1.0, ...	1

predicted_sentiment	awesome	great	fantastic	amazing	love	horrible	bad	t
0.9999999999895941	0.0	0.0	0.0	0.0	0.0	0	0	
0.9999999999868131	0.0	0.0	0.0	0.0	1.0	0	0	
0.9999999999465673	0.0	0.0	0.0	0.0	0.0	0	0	
0.9999999999302822	0.0	1.0	0.0	0.0	0.0	0	0	
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0.9999999998430963	0.0	0.0	0.0	0.0	1.0	0	0	

0.9999999997360196	0.0	0.0	0.0	0.0	1.0	0	0
0.9999999995664315	0.0	0.0	0.0	0.0	1.0	0	0
0.99999999985015902	0.0	0.0	0.0	0.0	0.0	0	0
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predicted_sentiment_2

```
0.9999999999895941
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0.9999999999465673
0.0000000000000000
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In [50]: `diaper_champ_reviews[1]`

```
Out[50]: {'name': 'Baby Trend Diaper Champ',
'review': 'My husband and I selected the Diaper "Champ" mainly because you c
an use ordinary trash bags and not be roped into buying the specialty refill
bags, and it was moderately priced (a little less than the Diaper Dekor). It
also seemed that the reviews of this product were generally more positive...T
he positives are:1. You can use any trash bag2. Easy to use and refillThe neg
atives are:1. The bag doesn\'t seal around the dirty diapers, so when it come
s time to refill the bag, it\'s just like opening a regular trash can. Smells
like the Champ is trying to knock YOU out with odor!2. The plastic seems to s
mell, ie. You put a dirty diaper in the hole, and flip the handle to dump the
diaper into the champ. That "side" of the plastic dumper-thingie is in contac
t with the air inside the dirty diaper changer, so when you flip it over the
next time to dispose of another diaper, you smell the last 8 diapers you put
in there...pretty gross.3. The "odor seal" (some soft material) really seems
to retain odor. It cannot be washed or replaced, so after a while, the Diaper
"Champ" smells even when freshly washed and deodorized (I\'m talking about ho
sing down outside and scrubbing with Clorox cleanser!). Super-frustrating! Th
is is my primary complaint.Okay, so some things are a given as far as disposa
l systems go (ie. *some* odor, must empty frequently, must wash and disinfect
occasionally), but still I think this product leaves much to be desired.We\'r
e going to try another disposal system.',
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In []:

In []: