def evaluate(classifier, dev_data, test_data):
    # Test on the development and test data
    dev_accuracy = nltk.classify.accuracy(classifier, dev_data)
    test_accuracy = nltk.classify.accuracy(classifier, test_data)

    print "{0:6s} {1:8.5f}".format("Dev", dev_accuracy)
    print "{0:6s} {1:8.5f}".format("Test", test_accuracy)

    features_only = [example[0] for example in develop_data]

    reference_labels = [example[1] for example in develop_data]
    predicted_labels = classifier.batch_classify(features_only)
    reference_text = [review[0] for review in reviews[1700:1800]]

    confusion_matrix = nltk.ConfusionMatrix(reference_labels, predicted_labels)

    print confusion_matrix

    for reference, predicted, text in zip(
        reference_labels,
        predicted_labels,
        reference_text
    ):
        if reference != predicted:
            print "{0} {1}\n{2}\n\n".format(reference, predicted, text)
Baseline Confusion Matrix

<table>
<thead>
<tr>
<th></th>
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<th>e</th>
<th>o</th>
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<tbody>
<tr>
<td>neg</td>
<td>&lt;20&gt;</td>
<td>29</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>pos</td>
<td>.</td>
<td>&lt;51&gt;</td>
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(row = reference; col = test)
it seems like i'm reviewing cheeseball horror movies on a monthly basis now. scream revitalized a genre the studios are now intent on burying into the ground again. the serial killers in these new slasher movies have nothing on sony and miramax in the "relentless" department. i still know what you did last summer is a terrible film in many respects, but in the wake of the stupefyingly bad urban legend, it's citizen hook. jennifer love-hewitt reprises her role as buxom teenager julie james-who apparently escaped certain doom at the end of the last movie by... waking up.

<plot summary>
i didn't like i know what you did last summer and i can't say i liked this continuation any more or less. the pacing in both films is languid-how is it that so much time passes with neither murder nor character development? i still know what you did last summer has a better sense of humour than the first one, though, and at least it explains away willis's random selection of victims. (i don't think the hotel maid or the stoner dude had the slightest idea what julie did last summer.) director cannon (judge dredd) is a competent filmmaker but not a particularly imaginative one-if there is a part three (what on earth would they call it?) and the fun denouement suggests there will be, here's my suggestion: hire a filmmaker with flair, someone who can really energize this stillborn series-someone who won't rely on so many shock notes. and let that person run wild with the camera. (aside: if blandy [sic] must appear in the next one, try to keep the number of times she says "baby" to a minimum. thanks in advance.)
```python
def feature_selection(classifier, reviews):
    # When setting a global variable inside a method we need to tell python
    # we want to actually use the global variable and not create a new local
    # variable with the same name
    global selected_features

    # Feature selection
    best = (0.0, 0)
    best_features = classifier.most_informative_features(10000)
    for i in [2**i for i in xrange(5, 15)]:
        selected_features = set([fname for fname, value in best_features[:i]])

    featuresets = [
        (features(review_text, review_words), label)
        for (review_text, review_words, label) in reviews
    ]

    train_data = featuresets[:1700]
    develop_data = featuresets[1700:1800]
    test_data = featuresets[1800:]

    classifier = nltk.NaiveBayesClassifier.train(train_data)
    accuracy = nltk.classify.accuracy(classifier, develop_data)
    print "{0:6d} {1:6d} {2:8.5f}".format(i, len(selected_features), accuracy)

    if accuracy > best[0]:
        best = (accuracy, i)

    # Now train on the best features
    selected_features = set([fname for fname, value in best_features[:best[1]]])
    featuresets = [
        (features(review_text, review_words), label)
        for (review_text, review_words, label) in reviews
    ]

    train_data = featuresets[:1700]
    develop_data = featuresets[1700:1800]
    test_data = featuresets[1800:]

    classifier = nltk.NaiveBayesClassifier.train(train_data)

    return classifier
```

Dev Accuracy  0.81000
Test Accuracy  0.80000
Confusion matrix
<table>
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\[
\begin{array}{cc}
\text{neg} & \langle 37 \rangle 12 \\
\text{pos} & 7 \langle 44 \rangle \\
\end{array}
\]

(row = reference; col = test)
as each day passes, the crew members begin to discover things about the place and themselves which set other things in motion.

*telling anything else about the plot would be a crime*. This is a deliberately slow-paced mystery-horror film drenched in atmosphere, with a very creepy insane asylum (in which most of the film takes place), very few clues up-front and lots to talk about afterwards. Will it bore some people to sleep? You bet it will! In fact, I guess I can pussyfoot around the actual word all I want but the best way to describe this kind of movie is a "mindfuck". If you feel like watching a movie that moves very slowly, gives you a handful of characters with divergent backgrounds, tosses a few very ambiguous and supernatural cookies your way and is extremely disturbing once you put it all together, well, then this movie is definitely for you! It's the kind of film that you actually have to see twice to fully appreciate (damn, I missed that whole "peanut butter" thing!) and one that will likely creep the shit out of you if watched alone in the dark. "brrrrrrrrr . . . now another great thing about it is that it's actually very gory and somewhat violent in theme, and yet we rarely see anything of the sort on the big screen (it's mostly implied, kids!). And as clichéd as it might be to say . . . it's usually much scarier when stuff is left to our imagination or implied in movies as such. Other films that this one reminded me of include Henry: Portrait of a Serial Killer and the Blair Witch Project, with that same real sense of dread, brooding and terror. The film does however move awfully slow and if you really don't get "into" it completely (you really need to concentrate here), you will lose the motion of the story and the pent-up tension might be released. But overall, this film is yet another great example of the horror genre making a very cool comeback this year with no tight tanktops in sight. And with David Caruso acting like the king hotshot like only he can, how can you go wrong? Definitely not a film for everyone but a must-see for anyone looking to throw themselves into the psyche of the disturbed (count me in!).