# CS 547 Information Retrieval Short answers

1. Answer to question is YES. Both Search engines Google and Bing use stemming in their search.  
   To support our conclusion we have experimented with performing simple queries as follow:

For google :

Running world

Run shoes world

Nike Running Track

Runners Shoes

For Bing :

Camer’s review

Camera rating

If both search engine are using stemming, then after the more relevant results engine should show the common result for the stemmed important word ‘run’

Please find the screenshots below which shows some common results for above queries’ search:

Google:

Graphical user interface, text, email

Description automatically generated

Graphical user interface, text, application

Description automatically generated

Here result occurred but after relevant searches (not in the top but in the bottom):

Graphical user interface, website

Description automatically generated

Graphical user interface, application

Description automatically generated

Bing :

Graphical user interface, application

Description automatically generated

The Query : ‘camer’s review’

Graphical user interface, text, application

Description automatically generated

2 . Given,

the number of relevant documents retrieved is 14.

total number of documents retrieved is 14 + 16 = 30

1. To calculate the precision of the system, we need to divide the number of relevant documents retrieved by the total number of documents retrieved.

Formula of Precision =

(Number of relevant documents retrieved) / (total number of documents retrieved)

:. Precision = 14 / 30 = 0.4667

**Hence, the precision of the system on this search is 0.4667 or 46.67%.**

1. To calculate the recall of the system on this search, we need to divide the number of relevant documents retrieved by the total number of relevant documents in the collection.

We have,

the number of relevant documents = 14,

total number of relevant documents in the collection is 80.

Formula of Recall = (number of relevant documents retrieved) / (total number of relevant documents in the collection)

:. Recall = 14 / 80 = 0.175

**Hence, the recall of the system on this search is 0.175 or 17.5%.**