

1. Investigate two search engines (e.g., Google and Bing), and figure out what tricks they are using by explaining your testing method. (15%)
- (a) Do both search engines use stemming?
- (b) Do both search engines filter stop words?

Yes I believe that Google & Bing both search engines uses stemming and filters stop words while fetching the results for the user's query. I've tried two examples on both the search engines and the ranking in is different in Google's results but stays somewhat same in Bing.

bing\_a\_1

The screenshot shows a Bing search results page for the query "run jogger for men". The page features a search bar at the top with the query entered. Below the search bar, there are navigation tabs for "ALL", "CHAT", "SHOPPING", "IMAGES", "VIDEOS", "MAPS", "NEWS", "MORE", and "TOOLS". The search results are organized into several sections:

- Also try:** men's sports joggers · mens athletic jogger pants · men's training joggers
- About 6,350,000 results**
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- Videos of Run Jogger for Men**  
<bing.com/videos>
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ULTIMATE Guide to Men's Joggers | Mens Fashioner | ...  
60.2K views · 10 months ago YouTube · Mens Fashioner
- Best Joggers for Men | Mens Joggers Haul**  
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Materials Matter      Finding Your Perfect Fit      Convenient Features

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- men's lifting joggers
- breathable men's joggers workout
- active jogger for men
- guys denim joggers
- men's workout joggers fitted
- designer joggers men's for gym

Microsoft Bing

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Men

### See Run Joggers Men

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Runner's World

<https://www.runnersworld.com/gear/g2120243/mens-workout-pants>

Best Men's Running Pants 2023 - Men's Workout Pants

Materials Matter

Finding Your Perfect Fit

Convenient Features

There are two types of long running bottoms: pants and tights. Tights are, just as the name suggests, skintight. On the other hand, running pants come in various cuts like relaxed or tapered. Understanding how each pant is cut can help you find the perfect fit for your body type and activity. Standard or relaxed fit are the two baggiest cuts and te...

See more on runnersworld.com

Estimated Reading Time: 8 mins

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Foot Locker

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100 Cambridgeside Pl, Cambridge · (617) 621-0270

Closed · Opens 11 AM

WEBSITE

DIRECTIONS

<https://www.bing.com/search?q=best+men%27s+running+joggers&FORM=RS5FD>

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Nike
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- Are joggers good for running?
- Which pants are best for running?
- Can you wear track pants to the run?
- What is the difference between track pants and joggers pants?


Feedback

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**Men's Running Pants & Tights**

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Google run jogger for men

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**Men's Running Pants**



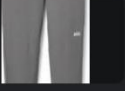
Men's Jogger Pants with Zipper Pockets Lightweight Athletic Workout Pants Gym Golf Joggers for Men Track Running - 4.74.7 out of 5 stars (12). \$27.99\$27.99. 8 ...  
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More to ask


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Which pants are best for running?

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Feedback


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Men's Joggers and Pants



2. For a particular search query, your IR system returns 14 relevant documents and 16 irrelevant documents. There are a total of 80 relevant documents in the collection.  
(10%)

(a) What is the precision of the system on this search?

(b) What is the recall of the system on this search?

(a) Precision = (14 relevant documents) / (14 relevant documents + 16 irrelevant documents) =  $14 / 30 \approx 0.4667$  or 46.67%

(b) Recall = (14 relevant documents) / (total relevant documents in the collection) =  $14 / 80 \approx 0.175$  or 17.5%

So, the precision of the system for this search is approximately 46.67%, and the recall is approximately 17.5%.