

PART IX WRITE-UP

1. Group members

Gatchell, Sam

Ngoga Ngabo, Bill

Norcott, Harland

Roy, Brady

2. Rank algorithm.

The rank of a song is got by finding the a phrase within the lyrics of a song by finding the smallest distance between the first occurrence of the first word and the last occurrence of the last word in the phrase. Here's a break down how it's done based on lyrics.

1. Extract Words from the Lyrics Phrase

- Use a regular expression to extract individual words from the lyricsPhrase and store them in phraseWords

2. Find Word Positions in Lyrics

- For each word in phraseWords, find all occurrences of the word in the lyrics stores the start or end of the position of the occurrence in a list

3. Find the Best Match

- Initialize variables to keep track of the smallest distance between the first and last words of a match, as well as their positions. It then iterates over the positions of the first word (indexOfFirst) and the last word (indexOfLast)
- For each combination, check if the positions of the intermediate words (if any) fall between the first and last positions.

4. Calculate the Rank

- If a valid match is found, calculate the distance (number of characters) between the first and last positions.
- The rank is the length of this substring, which represents how tightly the words in the lyricsPhrase are packed in the lyrics.
- **Lastly** Return the length of the best matching substring.

5. Main Method:

- Read the lyrics from the given file.
- Iterate over all songs in the SongCollection.
- For each song, calculate the rank using rankPhrase.
- Store and display the ranked songs.

2.OUTPUTS

Results “she loves you”

13, Aerosmith, Beyond Beautiful

68, Aerosmith, Girls Of Summer

52, Aerosmith, Walk On Down

112, Alabama, The Woman He Loves

147, Alabama, This Love's On Me

309, Aretha Franklin, A Rose Is Still a Rose

79, Beatles, The, Devil In Her Heart

174, Beatles, The, Every Little Thing

39, Beatles, The, I Got A Woman

13, Beatles, The, She Loves You

13, Beatles, The, That Means A Lot

299, Billy Joel, Laura

13, Billy Joel, Modern Woman

13, Blondie, Little Girl Lies

848, Bob Dylan, I Shall Be Free

377, Bob Dylan, Sweetheart Like You

693, Bob Dylan, Talkin' World War III Blues

18, Bonnie Raitt, Any Day Woman

317, Bonnie Raitt, Steal Your Heart Away

392, Bruce Springsteen, All That Heaven Will Allow

177, David Bowie, Baby Loves That Way

132, David Bowie, Jean Genie

591, David Bowie, Liza Jane

521, Eagles, The, New Kid in Town

192, Elton John, Li'L Frigerator

248, Elton John, My Baby Loves Lovin'

29, Elton John, She Sold Me Magic

246, Elvis Costello, Miracle Man
27, Elvis Presley, So Glad You're Mine
13, Elvis Presley, Take Good Care of Her
31, Elvis Presley, The Lady Loves Me
13, Elvis Presley, The Meanest Girl in Town
23, Elvis Presley, What's She Really Like
353, Fleetwood Mac, Everybody Finds Out
484, Fleetwood Mac, Silver Spring
13, Fleetwood Mac, Silver Springs
85, Frank Zappa, Ms. Pinky
412, James Taylor, Carolina in My Mind
421, James Taylor, Carolina On My Mind
403, James Taylor, Everybody Loves To Cha Cha Cha
407, James Taylor, Her Town Too
870, James Taylor, Jelly Man Kelly
359, Jimi Hendrix, Dolly Dagger
83, Kenny Rogers, When a Man Loves a Woman
369, Kinks, The, Have A Cuppa Tea
465, Kinks, The, Sleepless Night
82, Marvin Gaye, When A Man Loves A Woman
347, Metallica, The Unforgiven II
927, Michael Jackson, I Was Made To Love Her
145, Michael Jackson, Just Good Friends
39, Otis Redding, Ton Of Joy
21, Pink Floyd, Apples And Oranges
397, Rolling Stones, The, Can I Get A Witness
189, Rolling Stones, The, Just My imagination
327, Rush, Nobody's Hero
165, Scorpions, Here Comes My Baby
402, Van Morrison, I Got A Woman
639, ZZ Top, Lowdown In The Street
Total matches: 58

Results “Time can bring you down”

329, Earth Wind & Fire, Side By Side
271, Elvis Costello, Hurry Down Doomsday (The Bugs Are Taking Over)

329, Kinks, The, The First Time We Fall In Love

565, Led Zeppelin, The Lemon Song

823, Prince, Let's Go Crazy

323, Van Morrison, Muleskinner Blues

1419, Yes, Mind Drive

Total matches: 9

Results “You can’t always get what you want”

524, Billy Joel, Vienna

803, Kenny Rogers, I Can Feel You Drifting

51, Lynyrd Skynyrd, Good lovin's hard to find

34, Rolling Stones, The, You Can't Always Get What You Want

975, Who, The, Another Tricky Day

Total matches: 5

3. There were no bugs found !