

## MILESTONE-1

**1.1 Describe the artist/band you are managing. Make sure to reference your sources properly. (don't plagiarise). Use APA referencing style.**

**For example:**

- How many years have they been active?**
- How many albums & songs have they published?**

Indian vocalist, songwriter, and record producer Armaan Malik has been working in the music business since 2014. He has released several successful songs and albums throughout his career and is best known for his work in Bollywood movies.

Malik was born in Mumbai, India, on July 22, 1995, and he started singing at an early age. He made his professional music debut in 2014 with the single "Tumko Toh Aana Hi Tha" from the movie "Jai Ho." Since then, he has provided the voices for several Bollywood songs, such as "Main Hoon Hero Tera," "Bol Do Na Zara," and "Kaun Tujhe."

Additionally, Malik has two studio albums that garnered positive reviews from critics and fans: "Armaan" in 2015 and "Control" in 2021. Along with his individual work, he has also worked with other musicians, including Amaal Mallik, Shreya Ghoshal, and Neha Kakkar.



Armaan Malik. (n.d.). IMDb. <https://www.imdb.com/name/nm3263017/>

Armaan Malik. (2021, August 22). Wikipedia. [https://en.wikipedia.org/wiki/Armaan\\_Malik](https://en.wikipedia.org/wiki/Armaan_Malik)

**1.2 Collect data about your artist/band from Twitter. Make sure to choose keywords for data retrieval that are most relevant to your artist/band. However, try not to be too narrow. As a rough guide, you should retrieve at least 1000 tweets. List the keywords, explain your search strategy, and how much data you have collected.**

#ArmaanMalik
#Armaanians
#TeamArmaan
#Armaaniansarmy

I used the Twitter API to look for the hashtags in messages written in English to gather the data. I gathered the information for recent times which is the last 7 days.

I used an array of hashtags and keywords that are associated to Armaan Malik and his fan group to gather information about him from Twitter. I listed his name, several hashtags that his followers used, and the identities of his fan clubs.

I was able to gather 1484 tweets about Armaan Malik from Twitter in total. Tweets, retweets, and responses are among the information gathered. The information gathered consists of both English-language tweets and tweets from other languages that Twitter has converted into English.

```
twitter_data <- Authenticate("twitter",
                             appName = my_app_name,
                             apiKey = my_api_key,
                             apiSecret = my_api_secret,
                             accessToken = my_access_token,
                             accessTokenSecret = my_access_token_secret) %>%
  Collect(searchTerm = "#ArmaanMalik OR #Armaanians OR #TeamArmaan OR #Armaaniansarmy",
          searchType = "recent",
          numTweets = 4000,
          lang = "en",
          includeRetweets = TRUE,
          writeToFile = TRUE,
          verbose = TRUE) # use 'verbose' to show download progress

.....# View collected Twitter data
View(twitter_data$tweets)
```

This above-mentioned code provides the API information and then collects all the data regarding our search term.

```

Collecting tweets for search query...
Search term: #ArmaanMalik OR #Armaanians OR #TeamArmaan OR #Armaaniansarmy
Requested 4000 tweets of 18000 in this search rate limit.
Rate limit reset: 2023-04-02 04:42:52

tweet          | status_id          | created
-----
Latest Obs     | 1642368863521341440 | 2023-04-02 03:30:25
Earliest Obs   | 1639141977034747904 | 2023-03-24 05:47:55
Collected 1500 tweets.
RDS file written: 2023-04-02_042822-TwitterData.rds
Done.

```

In this above mentioned output, we get 1500 tweets.

### 1.3 List the top 5 most influential users for your artist/band. Find out what other interests/characteristics they have besides those related to your artist/band. Do these 5 have something in common?

queenuud1	This account is of the fan who regularly posts about Armaan Malik which is handled by the name girl Alia
WarnerMusicIN	This is an account of Warner Music India. Which is a music Company in India. They have recently done a song with Armaan Malik this is why it is on the priority list.
ArmaanMalik22	This is an account of Armaan Malik himself.
SocialNewsXYZ	This is an account of a platform for Indo-American news. Politics, movies, technology, sports, and photos, among other things.
AmaalMalik	This is an account of the brother of Armaan Malik most of the music which Armaan Malik has made has music of his brother.

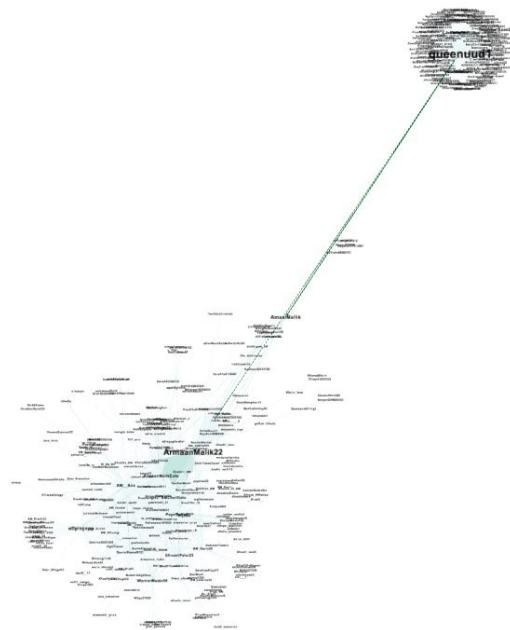
#### Output:

```

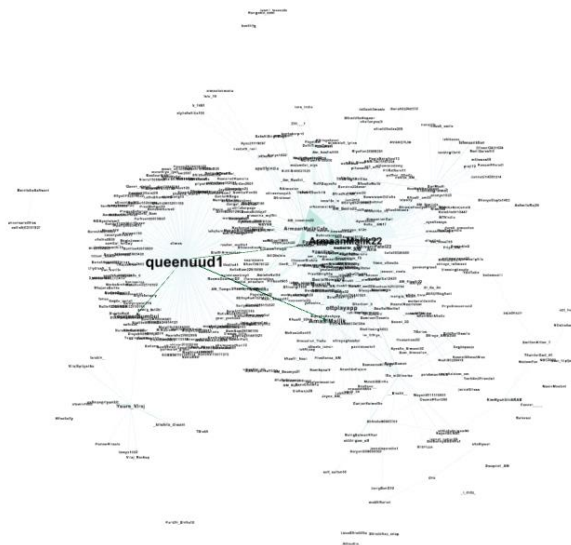
> View(twitter_data$tweets)
> twitter_actor_network <- twitter_data %>% Create("actor")
> twitter_actor_graph <- twitter_actor_network %>% Graph()
> write.graph(twitter_actor_graph, file = "TwitterActor.graphml", format = "graphml")
> rank_twitter_actor <- sort(page_rank(twitter_actor_graph)$vector, decreasing=TRUE)
> head(rank_twitter_actor, n=5)
1580832554428530688 1319615107941437440      298917410  955579414716264448      78583540
      0.11443038      0.07014273      0.06866564      0.03911049      0.03402341
> V(twitter_actor_graph)$name <- V(twitter_actor_graph)$screen_name
> rank_twitter_actor <- sort(page_rank(twitter_actor_graph)$vector, decreasing = TRUE)
> head(rank_twitter_actor, n = 5)
      queenuud1 WarnerMusicIN ArmaanMalik22 SocialNewsXYZ AmaalMalik
      0.11443038      0.07014273      0.06866564      0.03911049      0.03402341
> |

```

Above mentioned output is from Rstudio.



This output is generated using the Gephi.



Data Table x							
Nodes Edges Configuration Add node Add edge Search/Replace Import Spreadsheet Export table More actions							
Id	Label	Interval	name	screen_name	PageRank		
n310	n310		queenud1	queenud1	0.069282		
n450	n450		ArmaanMalik22	ArmaanMalik22	0.039884		
n464	n464		ArmaanMalik	ArmaanMalik	0.01769		
n337	n337		ottplayapp	ottplayapp	0.016419		
n474	n474		TouqeerSumbul	TouqeerSumbul	0.015257		
n45	n45		ArmaanMalikCafe	ArmaanMalikCafe	0.010193		
n430	n430		WarnerMusicN	WarnerMusicN	0.009705		
n53	n53		Yours_Viraj	Yours_Viraj	0.009451		
n30	n30		AM_Ana	AM_Ana	0.00909		
n26	n26		PayelSaha01	PayelSaha01	0.008372		
n405	n405		ShivanPatel23	ShivanPatel23	0.008215		
n315	n315		Elanaagrawat	Elanaagrawat	0.007823		
n38	n38		AMChartData	AMChartData	0.007523		
n170	n170		SocialNewsXYZ	SocialNewsXYZ	0.004616		

Both the output will not match because in this I have used PageRank Algorithm which is non-deterministic algorithm.

#### 1.4 List the top 10 most important terms that appear together with your keyword(s) related to your artist/band. Explain the results.

#armaanmalik
#armaanians
Bring
#askarmaan
❤
Music
Song
Armaan
Malik
Love

These phrases are extremely important and pertinent because they characterize the fundamental aspects of Armaan Malik's music and career.

The word "Music" is used most frequently in reference to Armaan Malik, showing how passionately his admirers and followers feel about his music and recent releases. The word "Song" implies that admirers are eagerly anticipating seeing Armaan Malik perform live. The word "#armaanmalik" implies that he is also searching from his hashtag. The word "#armaanians" is a fan club of Armaan malik and fans of Armaan Malik call themselves by this name.

The word "#askarmaan" implies the Q&A session/interaction with fans of Armaan Malik which he is doing on Twitter. The word "Love" captures followers' deep emotional bond with his music and with him. The terms "Armaan" and "Malik" is the name of the artist that shows fans searching using these terms. And the other terms are used for showing love to the artist.

```
> twitter_semantic_network <- twitter_data %>% Create("semantic")
> twitter_semantic_graph <- twitter_semantic_network %>% Graph()
> write_graph(twitter_semantic_graph, file = "TwitterSemantic.graphml", format = "graphml")
> rank_twitter_semantic <- sort(page_rank(twitter_semantic_graph)$vector, decreasing = TRUE)
> head(rank_twitter_semantic, n = 10)
#armaanmalik #armaanians bring #askarmaan ❤ music song armaan
0.14442452 0.06671662 0.05553361 0.04284881 0.03935226 0.02517137 0.02000513 0.01772373
malik love
0.01717160 0.01540839
> |
```

The above output is gathered from Rstudio which are top-10 terms related to the artist.



## 1.5 Calculate how many unique user accounts there are in your dataset. Explain the code you have used for the calculation. What do the results tell you?

To identify the unique components of a vector, data frame, or other R object, use the `unique()` method in R.

And to find the number of unique accounts use `length()` with `unique()`.

I have used the “`length(unique(twitter_data$tweets$screen_name))`” command in our script.

```
length(unique(twitter_data$tweets$screen_name))
```

```
> length(unique(twitter_data$tweets$screen_name))
[1] 447
>
```

And to see the user id remove the `length()` and the rest is same “`unique(twitter_data$tweets$screen_name)`”.

```
> unique(twitter_data$tweets$screen_name)
[1] "Paridhi_Sinha10" "boldonazaraa__" "PayelAm" "Payelsaha22" "SwetaArmaanian" "Amaalslays_16"
[7] "jannatu1Mehveen" "yaminivalli_01" "Anu12021" "NikitaS47984827" "_vidhyaaa" "MRYNR_"
[13] "ChawanRishita" "MusicMastani" "AM_Shivangi" "dango1_sambhabi" "maria_shuruty1" "itz_kritikarana"
[19] "AmAasifa" "AmishaNath4" "YouSunMaahi" "Kajal_Bhagat17" "dock_17" "OVI_1"
[25] "Armaalianxshine" "riddhijoshi22" "PayelSaha01" "AM_Sanjiida" "_KaunTujhe_" "aartikumari9111"
[31] "AM_Ana" "Armaalian_Tisha" "Shralover" "AnushkaPujare" "rimpa_chanda" "intezari_"
[37] "chaitanyaujh" "armaanian_priya" "AMChartData" "shraddhadass309" "KYAHOTUM" "PreetiSinghhs"
[43] "AM_Smile22" "kaur_triptjot" "PriyaArmaanian2" "ArmaanMalikCafe" "IshuChukki" "am_aasu788"
[49] "RheshaMalik" "Niveditha_13" "Shradha_AM" "am_rimpa" "rekhijaap" "yours_Viraj"
[55] "arpitaarmaan" "SingerArpita" "RanabhatAnu" "___armaanian" "youtuabeeha" "rashmi_mehta1"
[61] "Swapnali_AM" "likable41" "AM_Srishti" "Prashansa_AM" "armaalian_nishi" "im_tithiya_"
[67] "Shivangi1106" "ShellyS02585983" "PreetiS76713814" "AM_faizaaa" "dna" "SumreenTasmia"
[73] "pathan_ibbodz" "AnitaS7540124" "Sheenu_22_AM" "Nehakumarink000" "kash15g" "Pinkuu0905"
[79] "MokshitaAg20dec" "suprajaavs" "Rehnateresath" "Al_As_An" "kuseramira" "AM_Raniii"
[85] "ArmaanianGur1" "_r_drdrz_" "nesbeth_rani" "naleivisoobray1" "samihabibnet" "AM_Jasmine22"
[91] "SakshiSinghBag8" "riaasingh" "Axriya" "yehaaina_" "uncensoredkiss" "positive_souls_"
[97] "Siddhika_AM" "LoveIyArmaanian" "nazreentaj23" "PalakChugh22" "keshri_ruchi19" "Oliissa12431024"
[103] "armaanholics_" "kavya22_" "artiumacademy" "Khushi_am22" "itzzsuhani" "armaaliphile"
[109] "Shalin_love" "rishika_AM_" "Shorbani_b" "Neha_AM17" "hima_chavda" "khushimusix"
[115] "rvengrs_ketan" "Sunaina224ever" "POONAMS67247284" "_dusktilldawn" "Amish83240572" "Abhishe96965701"
[121] "NOstra4amas" "shafiipour" "_ayeshasays" "NSE2023" "ashishj03707937" "HPechetty"
[127] "PunamNiraula" "TechAndFriends1" "Shraddhaz_anup" "RathSuyasha" "ishita_vilas14" "shweta_ranvir"
[133] "IshanWankhade" "SaishreePriya17" "Pooja_22" "kanhekarpriti" "varshitha_SKAM" "Satvind30487005"
[139] "SruthiArmaanian" "tamya1002" "Taggie_forever" "atomic1402" "Rashami92572790" "Sakshiii_AM"
[145] "TSiekh" "ashnaxpriyankit" "Viraj_Backup" "VirajXpriyanka" "_krishna_diwani" "terebin_"
[151] "Khushi_024" "AaryanG89688502" "KSrivyshnavi" "Ayaz31119097" "OsamaKhan098" "SomeoneKilling1"
[157] "Am_Kirti22" "arhaanmalik22" "Sam_Armaalian_" "MaheeJahan01" "muskanbali2425" "harshi_am22"
[163] "MademFan" "_Adroable_" "bagde_sonali" "latestly" "TejashviSolank3" "AMRITA75597234"
[169] "PoojaSanghavi13" "sharmamadhuri72" "SocialNewsXYZ" "agk4444" "armaalianmanu" "Nishi95388419"
[175] "ishika_barui" "gemig_k" "Shatrug91445825" "zakirahmed62011" "SaiBunnyAADHFS1" "Urooj81831875"
[181] "ShahidH55211169" "Najreen786" "AmanaKarki" "sumbulians" "Yousonam22" "SureshMalivad7"
[187] "aruhi88452603" "LavanyaKrish10" "payalam22" "Meghna44008707" "Rolexsa1" "Fuccer_"
[193] "jannatbliss" "NehaKum32919698" "AM_Soumya27" "Snehaaa_" "mistysmile_6" "ArmaanAryan"
[199] "ShailkumarPart_" "EternamenteVive" "Gurdev2601" "muskan_misty" "Rozyin1" "Ayesha16706084"
[205] "SavitaK18884965" "Humaira0Humaira" "tsrc_16" "Aniza_2205" "AhmadiKuber" "Nimra75099401"
[211] "salwak128" "Bhav78979732" "Kandhei70077378" "HaeMehMarjavaan" "Kashish45494231" "Deepika26286905"
[217] "TJojashree" "OfficialSad45" "PrativaSwain2" "Suhana_15" "tanuu_" "armaankamagic"
[223] "Mcom57P" "BipashaKashyap_" "stylishshibu180" "jannatxparadis1" "fkfatema20" "ThunderGod_45"
[229] "Nandy172208" "RitikaS36" "NishaSohel" "BasheerNikhil" "LathaShankar19" "Aryliefanonly"
[235] "Sunitas43078600" "k_7491" "MarvChr19349382" "AM_Prachi22" "Ambikaramu" "Kanchansinandi"
```



[241]	"Alinakh59153827"	"MdIkram79786250"	"shirensaquiib"	"Pujach047772239"	"NidhiSi46637635"	"NeelukKP"
[247]	"beautifulsa1sa1"	"DragonLady863"	"AmiraBenKhalif4"	"RrR33raHa"	"Lilyblush__3"	"Chamodya23"
[253]	"the_sidniverse"	"Anni829072903"	"news0nfloor"	"sugandharaj09"	"ananyaa_9720"	"CHANDNI33758795"
[259]	"chetna0926"	"Hir30762905"	"byr78948791"	"Aarohi37527516"	"DEEPSHI66984989"	"3_am1aa1915"
[265]	"AyshaOm93976534"	"Lakhi7777"	"AnanyaAditi2"	"bhawna_manal"	"moon_child57669"	"_haniamirza"
[271]	"UzirQueen"	"NickAuj1a3"	"MagicJasmin"	"MDAdi1MALLICK12"	"SumSum29596769"	"SirishaRaj6"
[277]	"Krutika98876937"	"ShamaafrozK"	"MarkeArchana"	"Akanksh42163090"	"PragyaDehariya"	"MdAadi1Mallick8"
[283]	"shivi_7376"	"Butterf37377662"	"Jay84855259"	"IssacJacob15"	"KhyatiP93874632"	"ManishR76506129"
[289]	"Krishna29932103"	"ShaikhT80911423"	"HTnofilter_"	"JShereesha"	"PawanDh74019322"	"army_sumbul"
[295]	"Songsforever6"	"Rachana47301336"	"MaheshwariSara6"	"harrymodels1"	"prasanna_mythri"	"saadkha73877217"
[301]	"shivanijha303"	"kavita16955958"	"Mhi20342740"	"adiliefanpage"	"Justrandomthi19"	"ZiyaZiy86054015"
[307]	"NOBBWIT11391134"	"SumbulFan99"	"Sarbjee55208044"	"sumbul_fanboy"	"queenuud1"	"AlishaAnswers"
[313]	"soni56727141"	"RArmaaian"	"yovmungroo6"	"Elanaagrawat"	"jeswani_neetu"	"Rishitasingh683"
[319]	"aurothesimp"	"Joyce_AM_"	"anuuushkkka"	"nidhi_vohera"	"RomaSuman"	"pannasrin1"
[325]	"jagriti_04"	"_aarushi_25"	"Malobissinha"	"Rokshan23510502"	"vishwaja29"	"Ayesha_Armaan22"
[331]	"abt_live"	"Adi24stars"	"MyOpini07391863"	"tangled_soul_"	"UnPredictd_Sam"	"SmittenKitten_7"
[337]	"Nishani85756692"	"otplayapp"	"Miss14S"	"GunjanKulmethe"	"Shreya_AMtoZae"	"Araiya1622"
[343]	"Ushasi30"	"Mibyu77888"	"AsmaSiddiq7"	"SonamDhurve6"	"_Brishti_"	"JannatJ14281314"
[349]	"lilyaanadream7"	"bella06340460"	"Anjalim79159702"	"viniver27836748"	"DivyaSh65977397"	"pihusmile"
[355]	"our_ourlife"	"juni2018"	"ru12bi"	"Shikha66945554"	"savarjit"	"sm3667"
[361]	"Farheen00678982"	"MDAyanislam5"	"kritz2k03"	"sahiti_ramger"	"tribani_kumar"	"Soniabnsal"
[367]	"marothiyya_jyoti"	"BijayaL30039815"	"parimala4_grace"	"tanujasjain"	"AbhayKu47025175"	"MonikaBhurse"
[373]	"Barish90441777"	"aaravbang18"	"BeautyPani"	"BhojaneSarika"	"Ayan60000"	"Itishre67949363"
[379]	"Queen_elena5"	"sofna24"	"RinkiDe34954135"	"Nmn_Khan15"	"Ujjawal35985430"	"blessingbeauty_"
[385]	"hardycrystal719"	"sree_kanna123"	"your_yashaaa"	"naush_smile"	"Ghodewalla"	"Surya24101990"
[391]	"MoniQureshi6"	"RafiaMa34583102"	"mbiswas09"	"priyank54302911"	"PreetSehgal19"	"Noorshe32983969"
[397]	"AuobAuob15"	"annaya_rohmaan"	"MadhuPandey22"	"rockinglife10"	"KusumKharadi"	"BhavyaGupta1403"
[403]	"nanajlife"	"praji72"	"HasnatNoorIslam"	"ShivaniPate123"	"kadamvaiiii"	"SoulfulWords1"
[409]	"ReemaGauncarDZ"	"rahil11mirza"	"majumder_arya"	"ShreejaPaudyal"	"PriRathore11"	"Am_kashishhh"
[415]	"_Am_Roshni_"	"RiyaPan36969391"	"darsh_armaalian"	"ishikaaaa_"	"vikashini_13"	"Namikpaul9"
[421]	"HasnatAhmedNisa"	"anishaislam_am"	"biswas_tirna"	"Ajfwv5yX74uYb3d"	"sona____4"	"mukhtharian"
[427]	"AM_Tumpa"	"HydTimes"	"Alibilizza"	"janu_armaalian"	"WarnerMusicIN"	"etimes"
[433]	"ETimesTelugu"	"SwethaManjunat9"	"patrosulagna22"	"mismatch_lyrics"	"Sai_Sree7"	"Soumi_22"
[439]	"NewsroomOdisha"	"SunMaahi_"	"ians_india"	"ianslife_in"	"ananya1832"	"ishqhainpiya"
[445]	"SamjuktaD"	"Priya_AM_"	"Harshita8118447"			

This is the whole list of the unique id.