

# Scrutinizing and Instigating Data Mining on Unstructured Data Pertinent to Indian Cinema

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**Abstract**—Accomplishments that take place or are prejudiced as a result of decisions being made are influenced by opinions at the root level. Analysis of opinions or sentiment analysis plays a dynamic role in trying to make as close an estimate as possible. This is an extremely important aspect given that carefully planned and executed sentiment analysis can yield better and more accurate forecasts in the entertainment industry. At the base level, sentiment analysis stems from opinions shared or expressed by individuals and users. While there have been various methods that have been postulated and developed for sentiment analysis, there yet remains to be an efficient approach in extracting and producing accurate sentiment analysis consistently. The unstructured data would be collected via creating Twitter API for fetching the tweets representing public sentiments relate to different Bollywood movies, web series, and actors. The fetched tweets would be given as input to the programming model to calculate the sentiment total. Each tweet would be individually analyzed for calculating sentiment total and finally, the sentiment total of all the tweets would be summed up to calculate the final sentiment total.

**Keywords:** *Sentiment Analysis, Sentiment Score, Social Media, Twitter, Unstructured Data.*

## I. INTRODUCTION

Sentiment analysis involves categorizing opinions in text into categories like “positive” or “negative” often with an implied category of “neutral”. Sentiment analysis is also called opinion mining or the voice of the customer [1, 2]. Sentiment analysis is the computational job of automatically determining what feelings a writer is expressing in the text. The sentiment is often framed as a binary distinction (positive vs. negative), but it can also be more fine-grained, like identifying the specific emotion an author is expressing (like fear, joy, or anger) [3, 4]. Sentiment analysis is used for many applications, especially in business intelligence [5].

The initial step of the lexicon, i.e. creating a word list is a bit tedious task and is time-consuming. Often there is a need to modify the lexicon if one is discussing a specific topic [6, 7]. The meaning of the same word changes as per the sentence or situation in which it is used. For example, the word “sick” can have both positive and negative

sentiments. If one is talking about a pet store that sells a lot of sick animals, then surely here the word “sick” reflects a negative sentiment. But if the same “sick” word is used for talking about a skateboarding instructor who teaches a lot of sick flips, the word reflects a positive sentiment [8].

Sentiment analysis is a much popular topic and of great interest in several applications. As the information on the internet is constantly growing, many texts expressing opinions are available on social media [9, 10]. This sentiment analysis is prominently used in product reviews, marketing analysis, public relations, net promoter scoring, product feedback, and customer service [11, 12].

Text mining helps to utilize available resources to an optimum level and performs better than human brains.

1. Text mining assists in tracing opinions over time.
2. It extracts notions from text and presents them more effectively.
3. It helps in summarizing large documents.
4. The information extracted from text mining can be effectively used for predictive analysis.
5. It helps in finding relationships and correlations among different entities using appropriate techniques.
6. A particular hypothesis can be tested using text mining to see whether the document confirms or deny the hypothesis under study.
7. Text mining assists in smart decision-making.
8. It helps to discover knowledge in different application areas.
9. It provides outputs in different visualizations like tables, graphs, and charts.

Different techniques involved in text mining are mentioned as under.

1. Extracting information: This includes the extraction of valuable information from huge textual data. It emphasizes identifying the extraction of relationships among participating entities and attributes. The extracted information is stored in a database [13]. The effectiveness of the outcomes is periodically checked and evaluated using precision and recall processes.

2. Retrieving information: This refers to conducting extraction of associated patterns based on phrases or words. It uses different algorithms for tracking and monitoring user behaviors and finds out data accordingly. For instance, Google and Yahoo search engines.
3. Categorization: It refers to assigning normal language texts to a predefined set of topics depending upon their contents. Natural Language Processing is another name for categorization. Co-referencing is often used to extract relevant abbreviations and synonyms from textual data.
4. Clustering: Clustering is supposed to recognize intrinsic structures in textual information and organizing them into relevant subgroups. The major challenge faced by clustering is to come up with the formation of meaningful clusters from unlabeled textual data without earlier information on them [14].
5. Summarization: Summarization is intended for the generation of a compressed version of text having valuable information. It involves browsing through multiple sources and constructing information in a concise format keeping the meaning of the original document essentially the same. The methods lie in decision trees, regression models, swarm intelligence, and neural networks that can be used for this.

## II. STATE OF ART

In 2019, Asad Abdi et al. [15] stated that representative of word embedding, sentiment knowledge, sentiment shifter rules, statistical and linguistic knowledge, has not been thoroughly studied for sentiment analysis. The RNSA employs the Recurrent Neural Network (RNN) which is composed of Long Short-Term Memory (LSTM) to take advantage of sequential processing and overcome several flaws in traditional methods, where order and information about the word have vanished. Furthermore, it uses sentiment knowledge, sentiment shifter rules, and multiple strategies to overcome the following drawbacks: words with similar semantic context but opposite sentiment polarity; contextual polarity; sentence types; word coverage limit of an individual lexicon; word sense variations. To verify the effectiveness of the work, the authors conduct sentence-level sentiment classification on large-scale review datasets. The authors obtained encouraging results. Experimental results show that (1) feature vectors in terms of (a) statistical, linguistic, and sentiment knowledge, (b) sentiment shifter rules and (c) word-embedding can improve the classification accuracy of sentence-level sentiment analysis; (2) The author's method that learns from this unified feature set can obtain significant performance than one that learns from a feature subset; (3) The authors neural model yields superior performance improvements in comparison with

other well-known approaches in the literature. In 2019, Abdullah Alsaedi et al. [16] emphasized the fact that knowing about the reactions of the people to any public service or a product is very critical. Sentiment analysis is the answer to all such issues. It develops a task that aims to bring forward the opinions in texts related to different subjects. Twitter is a popular social networking website where the general masses voice their opinions. The study conducted by the authors proposed that machine learning techniques produce results with higher precision when multiple attributes are participating. SVM is seen as standard learning strategies and dictionary-based techniques often prove feasible. The accuracy of around 80% was achieved with machine learning algorithms like SVM, Naïve Bayes, and Maximum Entropy when bigram and n-gram models are used. But the accuracy received by ensemble and hybrid Twitter sentiment analysis algorithms yielded better results of 85% as compared to supervised machine learning techniques. In 2018, Mika V. Mantyla et al. [17] stated that sentiment analysis is one of the fastest-growing research areas in computer science, making it challenging to keep track of all the activities in the area. The authors present a computer-assisted literature review, where they utilize both text mining and qualitative coding and analyzed 6996 papers from Scopus. The authors find that the roots of sentiment analysis are in the studies on public opinion analysis at the beginning of the 20<sup>th</sup> century and in the text subjectivity analysis performed by the computational linguistics community in the 1990s. However, the outbreak of computer-based sentiment analysis only occurred with the availability of subjective texts on the Web. Consequently, 99% of the papers have been published after 2004. Sentiment analysis papers are scattered to multiple publication venues, and the combined number of papers in the top-15 venues only represents ca. 30% of the papers in total. We present the top-20 cited papers from Google Scholar and Scopus and taxonomy of research topics. In recent years, sentiment analysis has shifted from analyzing online product reviews to social media texts from Twitter and Facebook. Many topics beyond product reviews like stock markets, elections, disasters, medicine, software engineering and cyberbullying extend the utilization of sentiment analysis. In 2018, Naw Naw [18] specified that Twitter is one of the most prevalent social networking services where views and feelings about numerous facets and happenings can be pooled by millions of users. Among machine learning techniques, the Support Vector Machine (SVM) classifier and K-Nearest Neighbor (KNN) classifier are used in this system. The accuracy, precision, recall and f1-total are associated by using these two classifiers. The crepted training dataset comprises of 3484 tweets about education, 5455 tweets about business, 2460 tweets about crime and 8078 tweets about health. These crawled data

are preprocessed in transformation, negation handling, tokenization, filtering and normalization. And then, the system performs the feature extraction step. The output features are the input features of Support Vector Machine and K-Nearest Neighbour classifiers. In 2018, Shahid Shayaa, Noor Ismawati Jaafar, Shamshul Bahri et al. [19] emphasized the massive acceptance of social media tools and applications to gain insight into unstructured data. Data analytics have played a major role in achieving this feat. OMSA (Opinion Mining and Sentiment Analysis) have been effectively used for categorizing the opinion into different sentiments to have an insight into public opinion and mood. Extensive research has been conducted on OMSA in the past years. The authors conducted a comprehensive methodical literature evaluation to discuss both the technical aspect and non-technical aspect in the form of application areas. Along with this, the emphasis has been laid to analyze the different challenges related to both technical and non-technical aspects. The authors emphasized Twitter has been the major source for the collection of unstructured data.

### III. RESEARCH METHODOLOGY

The research methodology adopted to perform text mining on unstructured data via sentiment analysis is illustrated via a flowchart shown in Fig. 1 followed by an algorithm.

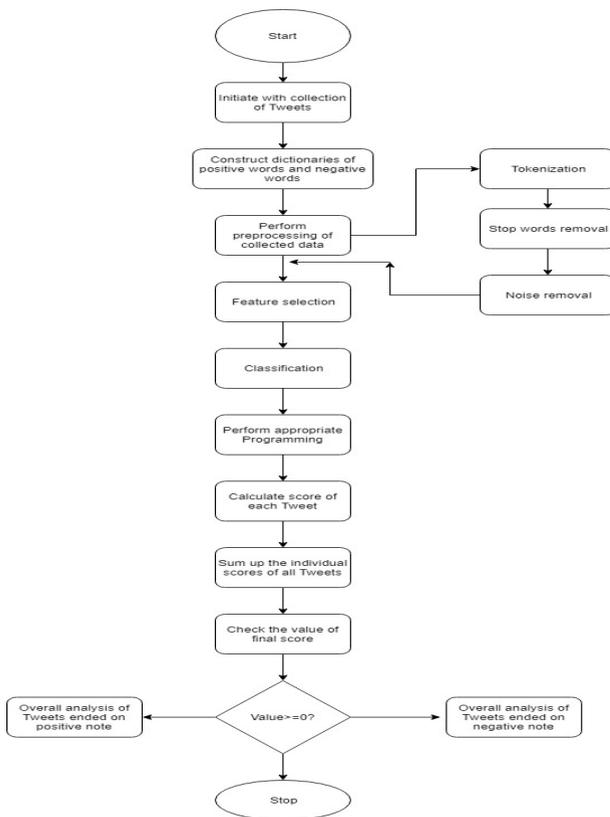


Fig. 1: Figure Depicts the Adopted Procedure for Performing Sentiment analysis

#### A. Algorithm

1. Initiate via collecting the unstructured tweets, posts, and comments from different sources of social media like Twitter, Facebook, etc.
2. Performing data cleansing on the collected stuff via removing grammatical mistakes, URLs, stop words, etc.
3. Identify the words referring to the sentiments.
4. Prepare two separate dictionaries loaded with words indicating positive and negative sentiments.
5. Perform feature selection and scaling of attributes on the collected unstructured data.
6. Perform programming and provide training to the constructed model. The Python programming for extracting tweets via creating Twitter API is supported by sentiment analysis programming performed in Java Eclipse Oxygen 11.
7. Perform evaluation and execute the constructed database file including tweets and unstructured data and obtain the sentiment total.
8. If the sentiment total is greater than 0 then it can be concluded that the sentiments are on the positive side and if the sentiment total is less than 0 then it can be concluded that the conducted sentiment analysis is on the negative side.

#### B. Classification of Words in Different Categories

The primary job to be performed while mining sentiments is to classify different words related to emotions, feelings, and sentiments into two broad categories, i.e., positive words and negative words mentioned as under in Fig. 2 and Fig. 3.



Fig. 2: Figure Shows the Positive Dictionary Comprising Prominent Positive Words used on Social Media

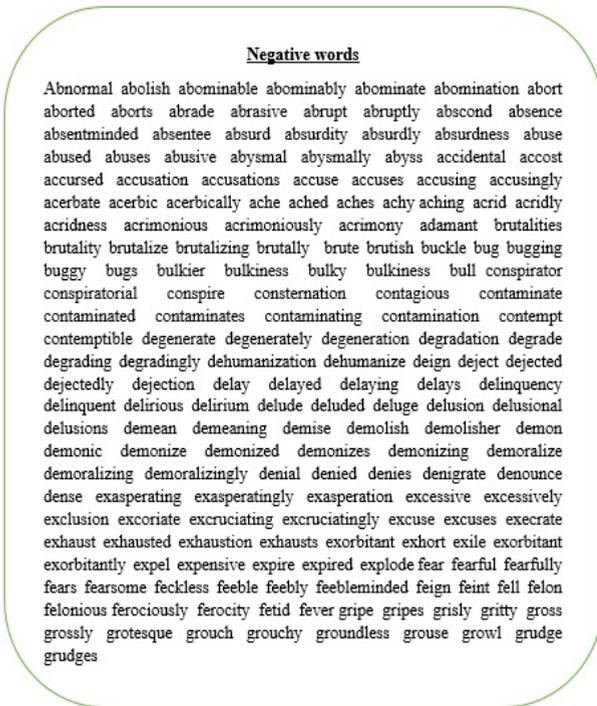


Fig. 3: Figure Shows the Negative Dictionary Comprising Prominent Negative Words used on Social Media

#### IV. IMPLEMENTATION AND RESULTS

This section illustrates few instances of text mining that have been conducted via creating Twitter API and collecting tweets related to popular Bollywood web series and movies along with analyzing the popularity of few prominent Bollywood stars. As illustrated in the flowchart of Fig. 4, the tweets have been extracted using Python programming conducted on Spyder (Python 3.7) as a part of Anaconda Navigator 3 and later on, the extracted tweets are analyzed on a programming model constructed in Java on Eclipse Oxygen 11. Each extracted tweet is analyzed and simultaneously the sentiment total is been calculated by evaluating the intensity of different sentiment-related words mentioned in the two created dictionaries relevant to positive and negative sentiments.

##### A. Instance 1

Name of the Bollywood web series – Mirzapur 2  
 Few of the tweets collected in relevance with Mirzapur 2 are stored in a text file titled “mirzapur2.txt” and are mentioned below.

Mirzapur2

- RT @divyenndu: Hum aa gaye hain..dekh lijiye!!!
- Welcome 2 Mirzapur 2
- #Mirzapur2 streaming NOW!!!!
- @PrimeVideoIN @exclmovies @YehHaiMi...
- @ShriyaP I'm happy to see you in #Aranya after i saw you in @YehHaiMirzapur i hope I'll see you in your future films from tolywood.

- RT @pkrajeshpk: So @YehHaiMirzapur is a true story!
- RT @pkrajeshpk: So @YehHaiMirzapur is a true story!
- @pkrajeshpk @LevinaNeythiri @YehHaiMirzapur Of course its based non true events.. complete western UP is crime belt... <https://t.co/ILeN0LU651>
- @FarOutAkhtar From explaining everyone where is Mirzapur while growing up to now brands in the name of... <https://t.co/canOMzQGba>
- RT @pkrajeshpk: So @YehHaiMirzapur is a true story!
- RT @pkrajeshpk: So @YehHaiMirzapur is a true story! <https://t.co/GD825bWljm>
- RT @isdb21: Newcancer invented bymunna Bhyya @YehHaiMirzapur @alifaza19 #Mirzapur2review <https://t.co/2r2du71QhX>
- @PuneetKrishna @YehHaiMirzapur @PrimeVideoIN @exclmovies @TripathiiPankaj @alifaza19 @divyenndu @battatawada... <https://t.co/ibetnE0zzM>
- Shows like @SacredGames\_TV and @YehHaiMirzapur have proven that there is an audience out there for this content. Le... <https://t.co/nO4YQ4jsoM>
- RT @isdb21: Newcancer invented bymunna Bhyya @YehHaiMirzapur @alifaza19 #Mirzapur2review <https://t.co/2r2du71QhX>
- @meghna1malik @bhawanasomaaya If someone who call really kill mirzapur 3 after boring mirzapur 2 it's you... Hope w... <https://t.co/9nCzMr4qc>
- RT @mirxacas: Yes or no? ??
- @alifaza19 @PrimeVideoIN @YehHaiMirzapur #alifaza19 #AmazonPrimeVideo #Mirzapur #mirzapurmeme #memesdaily #MEMES...
- #NikitaTomar #nikitatomar #Nikitatomar
- #NikitaGotJustice #nikitagotjustice
- INFLUENCED BY \*MIRZAPUR\* WEB SERIES tho... <https://t.co/8RtPCvnOjb>
- #headsupcorporation #career #careergoals #...
- Ensure that you don't land up in the same situation.
- @divyenndu Nice profile or really so nice #Mirzapur
- RT @PARMODSain4: MOST NUMBERS OF POSTS/TAG FOR A WEB- SERIES ..On #Instagram
- 1.#Mirzapur : 685K+
- 2.#BrokenButBeautifulSeason3 : 451K+\*\*...
- RT @GemsOfBollywood: Proud moment for @FarOutAkhtar & entire #Mirzapur team, as well all who watch such trash - you all inspired Tausif to...
- RT @GemsOfBollywood: The scene and dialogs from #Mirzapur by @FarOutAkhtar that inspired Tausif to shoot dead Nikita Tomar.
- Like Munna(a...
- @RichaChadha Happy Holi Guddu Pandit??.
- #Mirzapur
- RT @AlwaysAkhilK: #Mirzapur 2 Seasons Watched
- Intresting Crime Thriller Every Character & Their Acting So Good Mainly I Liked #munnabhaiya...
- #Mirzapur 2 Seasons Watched
- Intresting Crime Thriller Every Character & Their Acting So Good Mainly I Liked... <https://t.co/li23irtj1w>
- RT @GemsOfBollywood: Proud moment for @FarOutAkhtar & entire #Mirzapur team, as well all who watch such trash - you all inspired Tausif to...
- RT @GemsOfBollywood: The scene and dialogs from #Mirzapur by @FarOutAkhtar that inspired Tausif to shoot dead Nikita Tomar.
- Like Munna(a...
- RT @ritesh\_sid: An evening with Guddu, Tripathis and... wait! Is that Bade or Chhote Tyagi? ;) #Mirzapur <https://t.co/oC0bpGq3mz>
- Happy Holi ?????? @divyenndu
- #divyenndu #munnabhaiya #mirzapur <https://t.co/FD1eY88UTG>
- They still seem in their #Mirzapur characters!! ?? <https://t.co/Meulwh4d51>
- RT @GemsOfBollywood: Proud moment for @FarOutAkhtar & entire #Mirzapur team, as well all who watch such trash - you all inspired Tausif to...

- RT @GemsOfBollywood: The scene and dialogs from #Mirzapur by @FarOutAkhtar that inspired Tausif to shoot dead Nikita Tomar.
- RT @GemsOfBollywood: Proud moment for @FarOutAkhtar & entire #Mirzapur team, as well all who watch such trash - you all inspired Tausif to...
- RT @GemsOfBollywood: Tausif himself admitted after murder that he was inspired by #Mirzapur by @FarOutAkhtar
- RT @jindadilkashmir: ??Medical drive in #Mirzapur village ??
- #Sedhau Army camp carried out a Medical Assistance Drive at #Mirzapur & adjoi...
- RT @GemsOfBollywood: Proud moment for @FarOutAkhtar & entire #Mirzapur team, as well all who watch such trash - you all inspired Tausif to...
- RT @GemsOfBollywood: Tausif himself admitted after murder that he was inspired by #Mirzapur by @FarOutAkhtar
- RT @GemsOfBollywood: The scene and dialogs from #Mirzapur by @FarOutAkhtar that inspired Tausif to shoot dead Nikita Tomar.
- RT @GemsOfBollywood: The scene and dialogs from #Mirzapur by @FarOutAkhtar that inspired Tausif to shoot dead Nikita Tomar.
- Agree??
- #bollywooddialogue #hindiquotes #hindiwriting #hindilines #businessowner #scam1992 #mirzapur... <https://t.co/EPRQm4LpsK>
- RT @DeepikaBhardwaj: #Mirzapur in real : Teacher Husband kept a servant paying him 65K every year to take care of wife & kids living in dif...
- RT @GemsOfBollywood: The scene and dialogs from #Mirzapur by @FarOutAkhtar that inspired Tausif to shoot dead Nikita Tomar.
- RT @GemsOfBollywood: Proud moment for @FarOutAkhtar & entire #Mirzapur team, as well all who watch such trash - you all inspired Tausif to...
- RT @DeepikaBhardwaj: #Mirzapur in real : Teacher Husband kept a servant paying him 65K every year to take care of wife & kids living in dif...
- Choose one
- #Mirzapur #kotafactory #lockdown2021 #memesdaily <https://t.co/XrUgS455Ci>
- Holi celebration with our students?
- Lots of love baccha log??
- #Holi2021 #Holi #HappyHoli #love #Mirzapur #baryaghat... <https://t.co/QVQoDjZP9A>
- Please Listen To Kalin Bhaiya!?? Even He Knows About Us! Order Now?????
- Use Code "SMILE" & Get Upto Extra 15% Off!?... <https://t.co/5k6MBnm4ay>
- RT @GemsOfBollywood: Proud moment for @FarOutAkhtar & entire #Mirzapur team, as well all who watch such trash - you all inspired Tausif to...
- RT @GemsOfBollywood: The scene and dialogs from #Mirzapur by @FarOutAkhtar that inspired Tausif to shoot dead Nikita Tomar.
- I have been to #Mirzapur several times. Yet to see or meet somebody who cherishes mutton, chicken or pork thrice a... <https://t.co/QjoF7oJi0J>
- RT @DeepikaBhardwaj: #Mirzapur in real : Teacher Husband kept a servant paying him 65K every year to take care of wife & kids living in dif...
- RT @Poornim51027958: Holi celebration with our students ????
- Happy Holi ??
- #Holi2021 #mirzapur #briyaghat <https://t.co/VZnSO1qXwM>
- RT @GemsOfBollywood: Proud moment for @FarOutAkhtar & entire #Mirzapur team, as well all who watch such trash - you all inspired Tausif to...
- #Mirzapur was amazing!!! If you are into violence, politics, I'll highly recommend it! It's on @PrimeVideo
- Holi celebration with our students ????
- Happy Holi ??
- #Holi2021 #mirzapur #briyaghat <https://t.co/VZnSO1qXwM>
- RT @sandeepbadlapur: Please support Vanvasi girls who are skipping school due to lack of bicycles.
- Plz support #forestgirls
- #Mirzapur #gir...
- RT @GemsOfBollywood: The scene and dialogs from #Mirzapur by @FarOutAkhtar that inspired Tausif to shoot dead Nikita Tomar.
- RT @GemsOfBollywood: Tausif himself admitted after murder that he was inspired by #Mirzapur by @FarOutAkhtar
- RT @DeepikaBhardwaj: #Mirzapur in real : Teacher Husband kept a servant paying him 65K every year to take care of wife & kids living in dif...
- RT @PrimeVideoIN: everyone in this tweet is looking at you

The collected tweets in text file "mirzapur2.txt" are given as input to the programming model created in Java to calculate the sentiment total of each tweet and finally sum up these individual sentiment totals to calculate the final sentiment total.

### 1. Sentiment Score

- {RT @divyenndu: Hum aa gaye hain.. dekh lijiye!!! =0.0}  
Existing Counter total=0.0
- {Welcome 2 Mirzapur 2=0.0}  
Existing Counter total=0.0
- {#Mirzapur2 streaming NOW!!!!=0.0}  
Existing Counter total=0.0
- {@PrimeVideoIN @excelmovies @YehHaiMi...=0.0}  
Existing Counter total=0.0
- {@ShriyaP I'm happy to see you in #Aranya after i saw you in @YehHaiMirzapur i hope I'll see you in your future films from tollywood.=5.0}  
Existing Counter total=5.0
- {RT @pkrajeshpk: So @YehHaiMirzapur is a true story!=2.0}  
Existing Counter total=7.0
- {RT @pkrajeshpk: So @YehHaiMirzapur is a true story!=2.0}  
Existing Counter total=9.0
- {@pkrajeshpk @LevinaNeythiri @YehHaiMirzapur Of course its based non true events..complete western UP is crime belt... <https://t.co/ILeN0LU651>=-1.0}  
Existing Counter total=8.0
- {@FarOutAkhtar From explaining everyone where is Mirzapur while growing up to now brands in the name of... <https://t.co/canOMzQGba>=1.0}  
Existing Counter total=9.0
- {RT @pkrajeshpk: So @YehHaiMirzapur is a true story!=2.0}  
Existing Counter total=11.0
- {RT @pkrajeshpk: So @YehHaiMirzapur is a true story! <https://t.co/GD825bWljm>=2.0}  
Existing Counter total=13.0
- {RT @isdb21: New cancer invented by munna Bhyya @YehHaiMirzapur @alifaza19 #Mirzapur2review <https://t.co/2r2du71QhX>=-1.0}  
Existing Counter total=12.0
- {@PuneetKrishna @YehHaiMirzapur @PrimeVideoIN @excelmovies @TripathiiPankaj @alifaza19 @divyenndu @battatawada... <https://t.co/ibetmE0zzM>=0.0}  
Existing Counter total=12.0

- {Shows like @SacredGames\_TV and @YehHaiMirzapur have proven that there is an audience out there for this content. Le... <https://t.co/nO4YQ4jsom>=2.0} Existing Counter total=14.0
- {RT @isdb21: New cancer invented by munna Bhyya @YehHaiMirzapur @alifazal9 #Mirzapur2review <https://t.co/2r2du71QhX>=-1.0} Existing Counter total=13.0
- {@meghna1malik @bhawanasomaaya If someone who call really kill mirzapur 3 after boring mirzapur 2 it's you... Hope w... <https://t.co/9nCzMqr4qc>=-6.0} Existing Counter total=7.0
- {RT @mirxacasm: Yes or no? ??=0.0} Existing Counter total=7.0
- {@alifazal9 @PrimeVideoIN @YehHaiMirzapur #alifazal #AmazonPrimeVideo #Mirzapur #mirzapurmeme #memesdaily #MEMES...=0.0} Existing Counter total=7.0
- {#NikitaTomar #nikitatomar #Nikitatomar=0.0} Existing Counter total=7.0
- {#NikitaGotJustice #nikitagotjustice=0.0} Existing Counter total=7.0
- {INFLUENCED BY \*MIRZAPUR\* WEB SERIES tho... <https://t.co/8RtPCvnOjb>=0.0} Existing Counter total=7.0
- {#headsupcorporation #career #careergoals #...=0.0} Existing Counter total=7.0
- {Ensure that you don't land up in the same situation. =0.0} Existing Counter total=7.0
- {@divyenndu Nice profile or really so nice #Mirzapur=3.0} Existing Counter total=10.0
- {RT @PARMODSain4: MOST NUMBERS OF POSTs/TAG FOR A WEB- SERIEs ..On #Instagram=0.0} Existing Counter total=10.0
- {1.#Mirzapur : 685K+=0.0} Existing Counter total=10.0
- {2.#BrokenButBeautifulSeason3 : 451K+\*\*...=0.0} Existing Counter total=10.0
- {RT @GemsOfBollywood: Proud moment for @FarOutAkhtar & entire #Mirzapur team, as well all who watch such trash - you all inspired Tausif to...=2.0} Existing Counter total=12.0
- {RT @GemsOfBollywood: The scene and dialogs from #Mirzapur by @FarOutAkhtar that inspired Tausif to shoot dead Nikita Tomar. =-2.0} Existing Counter total=10.0
- {RT @GemsOfBollywood: Proud moment for @FarOutAkhtar & entire #Mirzapur team, as well all who watch such trash - you all inspired Tausif to...=2.0} Existing Counter total=8.0
- {RT @DeepikaBhardwaj: #Mirzapur in real : Teacher Husband kept a servant paying him 65K every year to take care of wife & kids living in dif...=2.0} Existing Counter total=10.0
- {Choose one=0.0} Existing Counter total=10.0
- {#Mirzapur #kotafactory #lockdown2021 #memesdaily <https://t.co/XrUgS45SCi>=0.0} Existing Counter total=10.0
- {Holi celebration with our students?=0.0} Existing Counter total=10.0
- {Lots of love baccha log??=3.0} Existing Counter total=13.0
- {#Holi2021 #Holi #HappyHoli #love #Mirzapur #baryaghat... <https://t.co/QVQoDjZP9A>=0.0} Existing Counter total=13.0
- {Please Listen To Kalin Bhaiya!?? Even He Knows About Us! Order Now?????=0.0} Existing Counter total=13.0
- {Use Code "SMILE" & Get Upto Extra 15% Off!?!... <https://t.co/5k6MBnm4ay>=0.0} Existing Counter total=13.0
- {RT @GemsOfBollywood: Proud moment for @FarOutAkhtar & entire #Mirzapur team, as well all who watch such trash - you all inspired Tausif to...=2.0} Existing Counter total=15.0
- {RT @GemsOfBollywood: The scene and dialogs from #Mirzapur by @FarOutAkhtar that inspired Tausif to shoot dead Nikita Tomar. =-2.0} Existing Counter total=13.0
- {I have been to #Mirzapur several times. Yet to see or meet somebody who cherishes mutton, chicken or pork thrice a... <https://t.co/QjoF7oJi0J>=2.0} Existing Counter total=15.0
- {RT @DeepikaBhardwaj: #Mirzapur in real : Teacher Husband kept a servant paying him 65K every year to take care of wife & kids living in dif...=2.0} Existing Counter total=17.0
- {RT @Poornim51027958: Holi celebration with our students ????=0.0} Existing Counter total=17.0
- {Happy Holi ??=0.0} Existing Counter total=17.0
- {#Holi2021 #mirzapur #briyaghat <https://t.co/VZnSO1qXwM>=0.0} Existing Counter total=17.0
- {RT @GemsOfBollywood: Proud moment for @FarOutAkhtar & entire #Mirzapur team, as well all who watch such trash - you all inspired Tausif to...=2.0} Existing Counter total=19.0
- {#Mirzapur was amazing!!! If you are into violence, politics, I'll highly recommend it! It's on @PrimeVideo=2.0} Existing Counter total=21.0
- {Holi celebration with our students ????=0.0} Existing Counter total=21.0
- {Happy Holi ??=0.0} Existing Counter total=21.0
- {#Holi2021 #mirzapur #briyaghat <https://t.co/VZnSO1qXwM>=0.0} Existing Counter total=21.0
- {RT @sandeepbadlapur: Please support Vanvasi girls who are skipping school due to lack of bicycles.=0.0} Existing Counter total=21.0
- {Plz support #forestgirls =2.0} Existing Counter total=23.0
- {#Mirzapur #gir...=0.0} Existing Counter total=23.0
- {RT @GemsOfBollywood: The scene and dialogs from #Mirzapur by @FarOutAkhtar that inspired Tausif to shoot dead Nikita Tomar. =-2.0} Existing Counter total=21.0
- {RT @GemsOfBollywood: Tausif himself admitted after murder that he was inspired by #Mirzapur by @FarOutAkhtar=-1.0} Existing Counter total=20.0
- {RT @DeepikaBhardwaj: #Mirzapur in real : Teacher Husband kept a servant paying him 65K every year to take care of wife & kids living in dif...=2.0} Existing Counter total=22.0
- {RT @PrimeVideoIN: everyone in this tweet is looking at you =0.0} Existing Counter total=22.0
- {#mirzapur <https://t.co/Pi1ql7khj4>=0.0} Existing Counter total=22.0

Final Counter total=22.0

Sentiment Analysis ended on a positive note

Based on the analyzed tweets included in the text file “mirzapur2.txt”, the word cloud has been obtained as shown in Fig. 4. The bigger is the size of the text in the word cloud, the more frequently the word occurred in the tweets and vice versa. The word cloud prominently illustrates the names of different characters and genres of the web series.

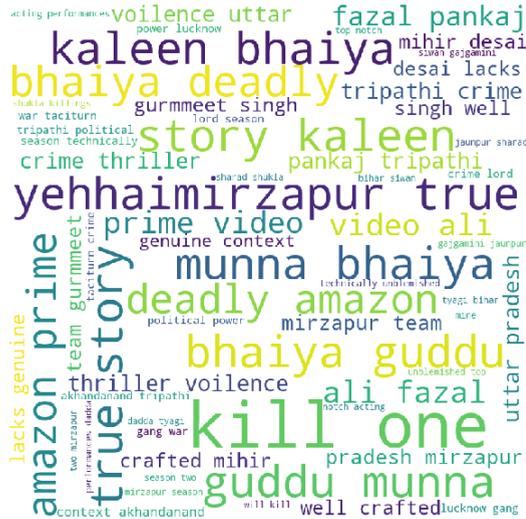


Fig. 4: Figure Shows the Word Cloud Created from Tweets Related to the Web Series Mirzapur 2

## B. Instance 2

Name of the web series –Aasharm Chapter 2

Few of the tweets collected in relevance with Aasharm Chapter 2 are stored in a text file titled “aashram2.txt” and are mentioned below.

Aashram Chapter 2

- RT @GemsOfBollywood: .@MXPlayer (owned by Times Internet) that streams #Aashram has made its agenda of Hindu-hate very clear
- Rest of us mu...
- Well @MXPlayer thanks for an utterly ruined online watching experience of #Aashram
- 8 ad breaks with 3 back to bac... <https://t.co/kpOHantU9Z>
- @shreemiverma Bobby's performance in #Aashram deserved an award no doubt about that...!!
- RT @thedeol: #AashramChapter2, all episodes out on @mxplayer. Watch now: <https://t.co/xkt7xB6119>
- #Aashram #MXOriginalSeries #MXPlayer
- @prak...
- RT @thedeol: #Aashram presented me with an opportunity to explore the unexplored ... never thought that such a negative role will get me su...
- RT @Aashram2: <https://t.co/arRJeCiiUk> Awards 2021 Winners: Arshad Warsi, Neena Gupta, Bobby Deol, Hansal Mehta and more win big in th...
- RT @JamRoySanyal: Way of life now ??? @Aashram2 @Aashram2 @MXPlayer #aashram ?? <https://t.co/xLjQNLnkys>
- RT @Aashram2: <https://t.co/arRJeCiiUk> Awards 2021 Winners: Arshad Warsi, Neena Gupta, Bobby Deol, Hansal Mehta and more

win big in th...

- RT @JamRoySanyal: Way of life now ??? @Aashram2 @Aashram2 @MXPlayer #aashram ?? <https://t.co/xLjQNLnkys>
- Way of life now ??? @Aashram2 @Aashram2 @MXPlayer #aashram ?? <https://t.co/xLjQNLnkys>
- RT @latestly: #Aashram Season 2: #AdhyayanSuman Says He Has Recorded His Own Songs for the Role of a Rockstar in #BobbyDeol's Web Show
- #Aashram Season 2: #AdhyayanSuman Says He Has Recorded His Own Songs for the Role of a Rockstar in #BobbyDeol's Web... <https://t.co/uemGOX5ipV>
- RT @rab\_ki\_dasi: #Aashram
- #mondaythoughts
- #GodKabir\_OceanOfHappiness
- Evidence in Yajurved Adhyay 19..
- ??Supreme God is kabir..
- He gives comp...
- With #JuniorDeol in the driving seat as #BabaNiralaKashipur wala, #Aashram promises power-packed performances by an... <https://t.co/7smo6LJbhd>
- @sanjaymasoomm @Aashram2 @MXPlayer @thedeol @IamRoySanyal @PJP\_Online @dishajha Congratulations @sanjaymasoomm... <https://t.co/BHexStWzjX>
- RT @GemsOfBollywood: .@MXPlayer (owned by Times Internet) that streams #Aashram has made its agenda of Hindu-hate very clear
- Well @MXPlayer thanks for an utterly ruined online watching experience of #Aashram
- 8 ad breaks with 3 back to bac... <https://t.co/kpOHantU9Z>
- @shreemiverma Bobby's performance in #Aashram deserved an award no doubt about that...!!
- RT @thedeol: #AashramChapter2, all episodes out on @mxplayer. Watch now: <https://t.co/xkt7xB6119>
- #Aashram #MXOriginalSeries #MXPlayer
- RT @thedeol: #Aashram presented me with an opportunity to explore the unexplored ... never thought that such a negative role will get me su...
- RT @Aashram2: <https://t.co/arRJeCiiUk> Awards 2021 Winners: Arshad Warsi, Neena Gupta, Bobby Deol, Hansal Mehta and more win big in th...
- RT @sanjaymasoomm: ..and here is the trophy for best dialogue in a web series-AASHRAM ! Thank you @Aashram2 sir, thank you writing team...
- @ReallySwara @anuragkashyap72 @CPIM\_WESTBENGAL @cpimsspeak @Dipankar\_cpiml @SitaramYechury @akavita\_krishnan... <https://t.co/CWk4SDucMm>
- RT @Aashram2: Honoured to have received the Best Actor Award in a Digital Film by @iwmbuzz for #Pareekska. Thank you for this recogniti...
- @Aashram2 you must make Rajneeti 2 as continue part
- RT @sanjaymasoomm: ..and here is the trophy for best dialogue in a web series-AASHRAM ! Thank you @Aashram2 sir, thank you writing team...
- @sanjaymasoomm @Aashram2 @MXPlayer @thedeol @IamRoySanyal @PJP\_Online @dishajha Congratulations @sanjaymasoomm... <https://t.co/BHexStWzjX>
- Please make on voting system of indian politics and suggest improvement
- @pbhushan1 Prashant Bhushan this country India is under great ignorance if you want to wipe it out from India
- plea... <https://t.co/pm7Jmg7D8p>

- @Aashram2 When will Ashram 3 release?? We are eagerly waiting for that.
- @Aashram2 @Aashram2 @thedeol Congratulations @thedeol ??????
- RT @Aashram2: #BobbyDeol wins the 'Best Silent & Powerful Performance' (OTT)
- Continued...
- Congratulations @thedeol @Aashram2 <https://t.co/XA61OCH5q6>
- Neeraj is a proud alumnus of Sainik School Tilaiya & his father is an ex staff from Sainik School Tilaiya (1963-201... <https://t.co/KVAX9xhFHi>)
- RT @thedeol: #AashramChapter2, all episodes out on @mxplayer. Watch now: <https://t.co/xkt7xB6119>
- #Aashram #MXOriginalSeries #MXPlayer
- @prak...
- @Aashram2 @Aashram2 @thedeol Super ??
- RT @Aashram2: #BobbyDeol wins the 'Best Silent & Powerful Performance' (OTT) in #BLAwards2021.
- Check out the winners list here: [htt...](http://...)
- RT @Aashram2: #BobbyDeol wins the 'Best Silent & Powerful Performance' (OTT) in #BLAwards2021.
- RT @avigyanSingh18: #Bihar , once the capital of #World #universities , to #REDiscover its lost #identity & #Routes with pro-active approa...
- #BobbyDeol wins the 'Best Silent & Powerful Performance' (OTT) in #BLAwards2021.
- RT @avigyanSingh18: #Bihar , once the capital of #World #universities , to #REDiscover its lost #identity & #Routes with pro-active approa...
- RT @IamRoySanyal: Way of life now ??? @Aashram2 @Aashram2 @MXPlayer #aashram ?? <https://t.co/xLjQNLnkys>
- RT @vermadhanesh: Please like and share. It's an educational video made by me.
- @yashrajfilms @iamrohitshetty @saurabhshukla\_s @anubhavsinha...
- @Aashram2 @Aashram2 @iwmbuzz Yes Prakash Jha Sahab Is A Very Awesome True Person For Everything!
- @KKHSOU1 @Aashram2 @iwmbuzz @Aashram2 Lovely to see that address come into being! My wish fulfilled by KKHSOU thank you!
- RT @IamRoySanyal: Way of life now ??? @Aashram2 @Aashram2 @MXPlayer #aashram ?? <https://t.co/xLjQNLnkys>
- @Aashram2 @IamRoySanyal Hello sir plz reply me
- Way of life now ??? @Aashram2 @Aashram2 @MXPlayer #aashram ?? <https://t.co/xLjQNLnkys>
- @Aashram2 Sir when aashram part 3?
- All india waiting@Aashram2 Hello
- @Aashram2 hello sir I need work plz help me
- @KKHSOU1 @iwmbuzz @Aashram2 Thank you so much @KKHSOU1 for the honour and Affection.
- @Aashram2 @iwmbuzz @Aashram2 Congratulations from KKHSOU family Dr Adil Hussain.
- @Aashram2 @iwmbuzz @Aashram2 U truly deserved that sir...ur scenes brought tears to my eyes too...
- @Aashram2 Can i get your production work too i need work
- RT @Aashram2: Many reasons to be Happy Today! Disha ?@dishajha? my darling daughter was born today ?? And it's the International Wome...
- @Aashram2 @iwmbuzz @Aashram2 You deserved this Adil daaa??
- RT @Aashram2: Honoured to have received the Best Actor Award in a Digital Film by @iwmbuzz for #Pareekska. Thank you for this

recogniti...

- @Aashram2 @iwmbuzz @Aashram2 Congratulations Adil !! ?? You are just amazing.???? Very happy for you.
- RT @latesty: #Aashram Season 2: #AdhyayanSuman Says He Has Recorded His Own Songs for the Role of a Rockstar in #BobbyDeol's Web Show
- @Aashram2 @iwmbuzz @Aashram2 Heartiest Congratulations??????
- @Aashram2 @iwmbuzz @Aashram2 Congratulations Adil Da!!
- RT @Aashram2: Honoured to have received the Best Actor Award in a Digital Film by @iwmbuzz for #Pareekska. Thank you for this recogniti...
- @Aashram2 @iwmbuzz @Aashram2 Congratulations to the talented, sensible artist. Very proud of you.

The collected tweets in the text file "aashram2.txt" are given as input to the programming model created in Java to calculate the sentiment total of each tweet and finally sum up these individual sentiment totals to calculate the final sentiment total.

## 1. Sentiment Score

- {RT @GemsOfBollywood: .@MXPlayer (owned by Times Internet) that streams #Aashram has made its agenda of Hindu-hate very clear=1.0}
- Existing Counter total=1.0
- {Rest of us mu...=0.0}
- Existing Counter total=1.0
- {Well @MXPlayer thanks for an utterly ruined online watching experience of #Aashram =0.0}
- Existing Counter total=1.0
- {8 ad breaks with 3 back to bac... <https://t.co/kpOHAntU9Z>=0.0}
- Existing Counter total=1.0
- {@shreemiverma Bobby's performance in #Aashram deserved an award no doubt about that...!=2.0}
- Existing Counter total=3.0
- {RT @thedeol: #AashramChapter2, all episodes out on @mxplayer. Watch now: <https://t.co/xkt7xB6119>=0.0}
- Existing Counter total=3.0
- {#Aashram #MXOriginalSeries #MXPlayer=0.0}
- Existing Counter total=3.0
- {@prak...=0.0}
- Existing Counter total=3.0
- {RT @thedeol: #Aashram presented me with an opportunity to explore the unexplored ... never thought that such a negative role will get me su...=0.0}
- Existing Counter total=3.0
- {RT @Aashram2: <https://t.co/arRJeCiiUk> Awards 2021 Winners: Arshad Warsi, Neena Gupta, Bobby Deol, Hansal Mehta and more win big in th...=5.0}
- Existing Counter total=8.0
- {RT @IamRoySanyal: Way of life now ??? @Aashram2 @Aashram2 @MXPlayer #aashram ?? <https://t.co/xLjQNLnkys>=0.0}
- Existing Counter total=8.0
- {RT @Aashram2: <https://t.co/arRJeCiiUk> Awards 2021 Winners: Arshad Warsi, Neena Gupta, Bobby Deol, Hansal Mehta and more win big in th...=5.0}
- Existing Counter total=13.0
- {RT @IamRoySanyal: Way of life now ??? @Aashram2 @Aashram2 @MXPlayer #aashram ?? <https://t.co/xLjQNLnkys>=0.0}
- Existing Counter total=13.0
- {Way of life now ??? @Aashram2 @Aashram2 @MXPlayer #aashram ?? <https://t.co/xLjQNLnkys>=0.0}
- Existing Counter total=13.0
- {RT @latesty: #Aashram Season 2: #AdhyayanSuman Says

- He Has Recorded His Own Songs for the Role of a Rockstar in #BobbyDeol's Web Show=0.0}*  
Existing Counter total=13.0
- {#Aashram Season 2: #AdhyayanSuman Says He Has Recorded His Own Songs for the Role of a Rockstar in #BobbyDeol's Web... <https://t.co/uemGOX5ipV>=0.0}
- Existing Counter total=13.0
- {RT @rab\_ki\_dasi: #Aashram=0.0}
- Existing Counter total=13.0
- {#mondaythoughts=0.0}
- Existing Counter total=13.0
- {#GodKabir\_OceanOfHappiness=0.0}
- Existing Counter total=13.0
- {Evidence in Yajurved Adhyay 19..=0.0}
- Existing Counter total=13.0
- {??Supreme God is kabir..=0.0}
- Existing Counter total=13.0
- {He gives comp...=0.0}
- Existing Counter total=13.0
- {With #JuniorDeol in the driving seat as #BabaNiralaKashipur wala, #Aashram promises power-packed performances by an... <https://t.co/7smo6LJbhd>=1.0}
- Existing Counter total=14.0
- {@sanjaymasoomm @Aashram2 @MXPlayer @thedeol @IamRoySanyal @PJP\_Online @dishajha Congratulations @sanjaymasoomm... <https://t.co/BHxStWzjX>=0.0}
- Existing Counter total=14.0
- {RT @GemsOfBollywood: .@MXPlayer (owned by Times Internet) that streams #Aashram has made its agenda of Hindu-hate very clear=1.0}
- Existing Counter total=15.0
- {Well @MXPlayer thanks for an utterly ruined online watching experience of #Aashram =0.0}
- Existing Counter total=15.0
- {8 ad breaks with 3 back to bac... <https://t.co/kpOHAntU9Z>=0.0}
- Existing Counter total=15.0
- {@shreemiverma Bobby's performance in #Aashram deserved an award no doubt about that...!=2.0}
- Existing Counter total=17.0
- {RT @thedeol: #AashramChapter2, all episodes out on @mxplayer. Watch now: <https://t.co/xkt7xB6I19>=0.0}
- Existing Counter total=17.0
- {#Aashram #MXOriginalSeries #MXPlayer=0.0}
- Existing Counter total=17.0
- {RT @thedeol: #Aashram presented me with an opportunity to explore the unexplored ... never thought that such a negative role will get me su...=0.0}
- Existing Counter total=17.0
- {RT @Aashram2: <https://t.co/arRJeCiiUk> Awards 2021 Winners: Arshad Warsi, Neena Gupta, Bobby Deol, Hansal Mehta and more win big in th...=5.0}
- Existing Counter total=22.0
- {RT @sanjaymasoomm: ...and here is the trophy for best dialogue in a web series-AASHRAM ! Thank you @Aashram2 sir; thank you writing team...=5.0}
- Existing Counter total=27.0
- {@ReallySwara @anuragkashyap72 @CPIM\_WESTBENGAL @cpimspeak @Dipankar\_cpiml @SitaramYechury @kavita\_krishnan... <https://t.co/CWk4SDucMm>=0.0}
- Existing Counter total=27.0
- {RT @Aashram2: Honoured to have received the Best Actor Award in a Digital Film by @iwbmbuzz for #Pareeksa. Thank you for this recogniti...=0.0}
- Existing Counter total=27.0
- {@Aashram2 you must make Rajneeti 2 as continue part=0.0}
- Existing Counter total=27.0
- {RT @sanjaymasoomm: ...and here is the trophy for best dialogue
- in a web series-AASHRAM ! Thank you @Aashram2 sir; thank you writing team...=5.0}
- Existing Counter total=32.0
- {@sanjaymasoomm @Aashram2 @MXPlayer @thedeol @IamRoySanyal @PJP\_Online @dishajha Congratulations @sanjaymasoomm... <https://t.co/BHxStWzjX>=0.0}
- Existing Counter total=32.0
- {Please make on voting system of indian politics and suggest improvement=2.0}
- Existing Counter total=34.0
- {@pbrushan1 Prashant Bhusan this country India is under great ignorance if you want to wipe it out from India =2.0}
- Existing Counter total=36.0
- {plea... <https://t.co/pm7Jmg7D8p>=0.0}
- Existing Counter total=36.0
- {@Aashram2 When will Ashram 3 release?? We are eagerly waiting for that.=0.0}
- Existing Counter total=36.0
- {@Aashram2 @Aashram2 @thedeol Congratulations @thedeol ??????=0.0}
- Existing Counter total=36.0
- {RT @Aashram2: #BobbyDeol wins the 'Best Silent & Powerful Performance' (OTT) in #BLAwards2021. =4.0}
- Existing Counter total=40.0
- {Check out the winners list here: [htt...](http://...)=0.0}
- Existing Counter total=40.0
- {@BeingTheRajnish @Aashram2 @ReallySwara @PMOIndia @narendramodi @NitishKumar @anuragkashyap72 I love you.. Bro=3.0}
- Existing Counter total=43.0
- {RT @Aashram2: #BobbyDeol wins the 'Best Silent & Powerful Performance' (OTT) in #BLAwards2021. =4.0}
- Existing Counter total=47.0
- {Congratulations @thedeol @Aashram2 <https://t.co/XA61OCH5q6>=0.0}
- Existing Counter total=47.0
- {Neeraj is a proud alumnus of Sainik School Tilaiya & his father is an ex staff from Sainik School Tilaiya (1963-201... <https://t.co/KVAX9xhFHi>=2.0}
- Existing Counter total=49.0
- {RT @thedeol: #AashramChapter2, all episodes out on @mxplayer. Watch now: <https://t.co/xkt7xB6I19>=0.0}
- Existing Counter total=49.0
- {#Aashram #MXOriginalSeries #MXPlayer=0.0}
- Existing Counter total=49.0
- {@prak...=0.0}
- Existing Counter total=49.0
- {@Aashram2 @Aashram2 @thedeol Super ??=0.0}
- Existing Counter total=49.0
- {RT @Aashram2: #BobbyDeol wins the 'Best Silent & Powerful Performance' (OTT) in #BLAwards2021. =4.0}
- Existing Counter total=53.0
- {Check out the winners list here: [htt...](http://...)=0.0}
- Existing Counter total=53.0
- {RT @Aashram2: #BobbyDeol wins the 'Best Silent & Powerful Performance' (OTT) in #BLAwards2021. =4.0}
- Existing Counter total=57.0
- {RT @avigyanSingh18: #Bihar , once the capital of #World #universities , to #REDiscover its lost #identity & #Routes with pro-active appra...=-3.0}
- Existing Counter total=54.0
- {#BobbyDeol wins the 'Best Silent & Powerful Performance' (OTT) in #BLAwards2021. =4.0}
- Existing Counter total=58.0
- {RT @avigyanSingh18: #Bihar , once the capital of #World #universities , to #REDiscover its lost #identity & #Routes with pro-active appra...=-3.0}



Today the box-office collection of a movie is synonymous with its success. This trend strongly began recently with movies earning over 200 crores in profit. And thus began the trend of the *200-Crore-Club*, *300-Crore-Club* & so on. Technology has played a significant role in creating cinema but now it can do much more. To the unaware, big data analytics is a branch of computer science that explores a large amount of data and analyzes patterns in it which in turn provides insights to the management to make informed decisions. With the increasing focus on digitization and data-driven marketing, there has been a revolution in the media industry on how it uses data and analytics. The future of the industry is dependent on the amalgamation of both digital and analytical solutions. Enterprises are eager more than ever before to transform media platforms to provide more personalized content for their audiences. There is no doubt about the amount of data that media and entertainment companies gather on an everyday basis and there is a huge scope of use the data to understand the demand of the genre of shows, music, content for a given age group on different given channels.

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