

# Street Dancers Web Application

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## Abstract

As the internet continues to expand, a number of social video services are emerging. For providing the content, each platform has a unique design and technology. There are several established video sharing sites like YouTube as well as popular ones like TikTok, Instagram, and others[1]. This application has been divided into three primary domains: building the program's front end; building and maintaining the application's back end database; and, finally, deploying the application to the cloud or local server. The application to be deployed on a server is developed using HTML, CSS, Javascript for the front end and python using the back end.. This application provides a platform for all street dancers to show case their talent to the world and give every dancer a stage.

**Keywords**— HTML, Python, JSON Street Dancers.

## I. INTRODUCTION

From a period when people had to travel long distances and wait weeks to showcase their skill and interact with the crowd, we have arrived at a point where sharing a video with the world only takes a few seconds. Time and distance are no longer obstacles to communication because technology has grown so much. The credit for this innovation's considerable impact on how people currently connect with one another goes to "technology." Many people who are exceptionally gifted but lack the means to practice, demonstrate their talent, or receive rewards for it. There are also opportunity deprived people who are not getting the right stage to showcase their talent. Street dancers is an application that provides a platform for all such people. The targeted customers for this application are young talented dancers, Choreographers and entertainment industry. The motivation behind the partnership is to provide a strong network for each talent in the entertainment industry. We provide a virtual platform to talented dancers for showcasing their talent by uploading a 60sec video on this platform and based on their content we will pick one dancer as the best for the month.

In this way we will have 12 finalists at the end of the year, and these finalists will compete against each other in a mega competition. We term the winner in the form of votes and views, the video will rank high depending on the amount of interactions. So votes and views are useful in our further study to select the finalists.

There are numerous video streaming algorithms; we choose the Adaptive Bitrate Streaming method among them. Because so many organizations use the content caching technology to distribute the material. For the optimum experience, we reasoned that we should move toward multi caching. Multi-tier caching technology has various benefits. The end-users will have a better experience when content delivery and experience quality are improved. A distributed environment is important in this situation. Jitter, bandwidth, and data loss are a few of the implementation issues for video streaming platforms. By utilizing cloud systems, we accept these challenges.

Different user kinds can benefit from this video streaming platform. Adaptive Bitrate Algorithm is the algorithm we employed in this case. For the proposed project we have used HTML, CSS, JavaScript to build website. A high-level, all-purpose computer language is Python. Code readability is prioritized in its design ideology, which makes heavy use of indentation. Python uses trash collection and has dynamic typing. It supports numerous programming paradigms, including structured (particularly procedural), object-oriented and

functional programming. Due to its extensive standard collection, it is frequently referred to as a "batteries included" language.

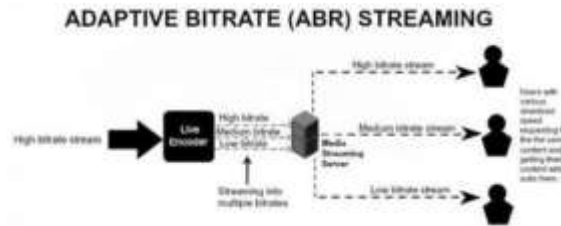


Fig1: Adaptive Bitrate Streaming(ABR) Algorithm

The use of an AWS server or a local server for the purpose of distributing material over the internet design.

What is Adaptive Bitrate Streaming? and how does it function? It gives the user better quality and a better overall experience[1].

Different user categories employ this algorithm. There are N users of the application, and each of them interacts with it differently. Some use mobile devices, while others use laptops, desktop computers, etc. All users can benefit from this algorithm's convenience. All categories of users experience different levels of data loss. The size of the device's screen will determine how different it is.

Only .mp4 formats are compatible with the streaming algorithm. This technique can handle different data loss for different resolutions. The word "bitrate" in that context refers to internet connection speed. The bitrate of a fast internet connection is higher than that of a slower one. Aside from that, we create user-interface websites here so that users can access them. By using a website to provide the convenience and help with its design and development. The website will be launched across all AWS servers.



Fig 2: AWS Cloud Storage

## II. RELATED WORKS

The difficulties and techniques of video transcoding have been studied. Transcoding video takes a long time and a lot of computing power. For handling, enormous computing infrastructures and capacity are required. Utilizing cloud administrations is turning into a typical practice for real time feature suppliers. It is anticipated that live video streaming will consume more than 50 Tbps, making it one of the largest consumers of bandwidth. The quality may be affected if lengthy packets are sent. There are primarily two issues: packet delays and audio lagging behind. Bandwidth: The range frequencies within a given band are transmitted when transmitting a signal. Many providers of live video content, including Periscope, YouTube Live, Twitch, and serve millions of viewers with live video content if the sender's bandwidth is slower than the required bandwidth[2].

YouTube Live, Twitch, and YouNow, serve millions of viewers with live video content if the sender's bandwidth is slower than the required bandwidth[2]. More than one billion people use YouTube, and 300 hours of videos are uploaded every minute. Prior efforts have focused on optimizing cloud resources for live streaming in order to reduce overall costs. Proposed method for optimizing cloud sites for video transcoding and renting cloud resources increased the cost of the cloud by selecting the cloud region for transcoding based on the location of the viewers.

### III. WORKING PROCEDURE

The basic structure of Street dancers model includes:

- API Calls
- Methodology and Implementation
- JSON File Storage
- Storage for Videos and Files (Amazon S3)

**API Calls:** Software-to-software connections are referred to as APIs, or application programming interfaces. They enable the communication and feature exchange between various applications. This saves time and money while enabling businesses to access data, code, software, or services from other companies to expand the functionality of their own products. A client application makes an API call when it wants to seek data from an external server or program, and the API then gets the requested data and returns it to the client.

Typical operations that a call can request include:

- Identify information in data stored in an archive.
- refactor, duplicate, add, or remove data kept in a repository.
- Launch the specified data processing procedure. An API endpoint is the location of the request when a client

initiates an API call. An application, service, or piece of software's data or features can be accessed through API endpoints. It's a particular URL that can be used to access data from a database or other web service, among other external sources. Additionally, it can be used to generate and handle data instantly, like in a web application.

A response is what the API endpoint sends back when it interacts. It's critical to understand that reactions may differ. The data that the client sought in the API call is frequently the response. Responses may also include error numbers if the APIs unsuccessful in verifying API clients.

**Methodology and Implementation:** To create the website for this project, we used HTML, CSS, and JavaScript. API calls to link the website to a local server were used. The back end is made using the Python computer language. There is a lot of info stored in JSON files. JSON is essential for validation because it can be used to send digital data securely between two parties using the JWT protocol. It can be compared to a digital certificate that permits a website to remain active.



Fig 3: Implementation protocol

**JSON File Storage:** JS collection, typically, store data in memory, initialize by loading that material from disk. At some point following each write, as well as at shutdown, persist that data to storage entirely, typically serialized as JSON. JSON storage is the practice of storing data in the JSON (JavaScript Object Notation) format, a simple and popular data interchange standard. JSON is a text-based format that is simple for both people and computers to read, write, parse, and generate. Because many web apps are created using JavaScript, which is able to easily manipulate JSON data, JSON storage is popular in web development. JSON can be used as a format for database storage as well as for saving and transmitting data between servers and clients. Databases, which are non-relational databases made to handle huge volumes of unstructured or semi-structured data, are frequently used in conjunction with JSON storage. The data received from the server is being stored in the JSON format for the

street dancers web application.

**Storage for Videos and Files (Amazon S3):** "It offers customers, all things considered, and ventures can utilize it to store and secure any amount of information for a range of utilization cases, for example, information lakes, sites, mobile applications, reinforcement and reestablish, chronicle, undertaking applications, IoT devices, and huge information analysis." ( Exabeam and Amazon S3) You may organize your information and create precisely tailored access controls to satisfy your business, legal, and consistency requirements with Amazon S3's straightforward the board features. For storing the videos and images relevant to the web application in this case, an S3 bucket is utilized.

**Development and Deployment (AmazonLightSail):**It aids developers with their initial use of AWS (Amazon Web Services) to create websites or web applications. It has the functions you require to start your project, such as instances (virtual private servers), managed databases, SSD-based block storage, static IP addresses, load balancers, content delivery network DNS (Domain Name System) distributions, DNS 4.3 management of registered domains, and snapshots (backups). All of these benefits are offered for a reasonable, dependable monthly cost[1].

#### Software tools used for design:

##### Front end:

1. HTML
2. CSS
3. Java script.

##### Back end:

1. Python

#### Resources Used for Storage:

Local Server

The proposed project Street Dancers consists of 3 modules as listed below:

- Home page
- Profile page
- Upload page

**Home Page:** This module consists of all the videos uploaded by the various users. The users can view the various dances uploaded and cast their votes to the video they liked the most.

**Profile Page:** This module consists of the number of votes earned for the user's dance video. The user can view the number of votes and likes for the video he/she uploaded. This page also consists of the rank secured by the particular user.

**Upload Page:** The user can upload the video through this upload module. The uploaded video can then be viewed by all the users using the application.

## IV. RESULTS AND DISCUSSION

When video transfer wasn't even possible over the Internet, video streaming has come a long way. Video streaming is now used by businesses all over the world as a marketing and communication tool, as well as a modern method for providing educational or entertaining content. The development of cloud computing has revolutionized video streaming and brought about massive corporations as well as well-known streaming services like Netflix and YouTube.

Video streaming is now used by even small businesses to connect with customers and make them feel more connected to their industry mission. Their marketing strategies could benefit from this additional human interaction. Although video streaming is regarded as an effective marketing strategy, it faces a number of technical obstacles.

Due to the fact that large data packets are transmitted during video streaming, there are latency issues—the irritated buffering that marries any viewer's experience. Streaming platforms can improve the performance and experience of video streaming by scaling on the cloud.

## V. CONCLUSION

An increasing number of applications store, maintain, and recover massive amounts of media data in situations where the data must be accessible or close to accessible online. As a result, we arrive at the conclusion that the use of video streaming technology has the potential to significantly alter and develop the digital industry. When compared to some of the other streaming platforms, this technology is superior. It might be the user's first new experience.

Every user is getting a better streaming experience thanks to this adaptive bitrate. There are a lot of resources on these cloud platforms. Cloud front is especially useful for Quality of Service because it delivers content. The application is being managed by AWS. The auto scaling option is available. It is a user-friendly setting. Android application is used rather than expensive equipment [2]. This street dancers application developed provides every street dancer an opportunity to show case their talent and this application has very user friendly interface.

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