Here's a **concise and traditional project report** for your **Twitter HD Video Downloader & Upscaler** app, suitable for academic or portfolio purposes.

Project Report

Title: Twitter HD Video Downloader & Upscaler

Technology Stack: Python, Streamlit, yt-dlp, FFmpeg

Introduction

The project is a web-based tool built using **Streamlit** that allows users to download videos from **Twitter/X**. Users can select their desired video quality and optionally **enhance the resolution to 1080p HD** using **FFmpeg**. The app is simple, fast, and user-friendly, designed for easy access and efficiency.

Objectives

- To fetch and display available video formats from a given Twitter/X URL.
- To allow the user to select and download the desired video quality.
- To provide an option for HD (1080p) video upscaling using FFmpeg.
- To build an interactive and responsive UI using Streamlit.

Technologies Used

Technology	Purpose
Python	Core programming language
Streamlit	Web interface and UI
yt-dlp	Extracting and downloading Twitter video content
FFmpeg	Upscaling videos to HD resolution

System Requirements

- Python 3.7 or higher
- FFmpeg installed and added to system path
- **Packages:** `streamlit`, `yt-dlp`, `shutil`, `subprocess`, `os`, `re`

Implementation Details

Input:

- A Twitter/X video URL (publicly available)

Process:

1. Extract available video formats using `yt-dlp`.
2. Present format options to the user in the interface.
3. Allow the user to select a quality and initiate download.
4. If upscaling is selected, process the video using FFmpeg to convert it to 1080p using the Lanczos filter.

Output:

- A downloadable `.mp4` video file, optionally upscaled to HD.

Testing & Results

- Tested with multiple Twitter/X video links.
- Verified support for MP4 formats with height attributes.
- Confirmed successful upscaling with FFmpeg when available.
- App performs reliably on all major platforms where Python and FFmpeg are supported.

Features Summary

- Twitter/X video downloader
- Format/quality selection
- 1080p HD upscaling option
- Simple Streamlit UI
- Error handling for invalid URLs or missing FFmpeg

Limitations

- Cannot download private or protected Twitter content.
- FFmpeg must be manually installed by the user.
- Download speed may vary based on video size and internet speed.

Future Enhancements

- Auto-detect and pre-select highest quality
- Add support for downloading audio-only or GIFs

Conclusion

This project successfully combines the power of `yt-dlp` and `FFmpeg` into a user-friendly interface for downloading and enhancing Twitter videos. It provides a practical tool for content creators, researchers, and general users who wish to store and repurpose Twitter media content.