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Task 5b Team 11

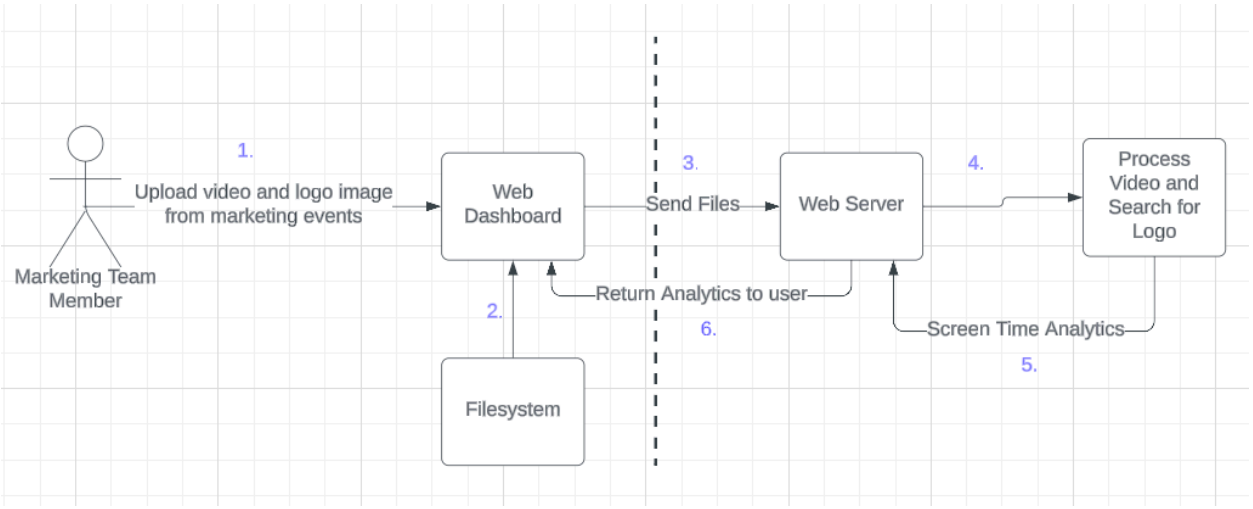
Project Description:

Our project is a computer vision-based solution that is designed to help brands, marketing teams, and event organizers measure the visibility and prominence of their branding in visual media. By leveraging machine learning and image recognition techniques, the system analyzes video footage to detect and track specific logos, measuring their overall screen time and providing detailed insights into the advertisement's performance. Users will upload a video along with the logo image that they want to analyze via a simple web-based dashboard. The platform will process the footage to generate targeted analytics that are focused solely on the selected brand's visibility. Utilizing this approach will allow marketers to evaluate the return on investment for individual campaigns, optimize future strategies, and provide event organizers with clear and actionable sponsorship insights. Unlike existing solutions that focus on live broadcasts or offer very broad analyses, our project offers greater versatility in regard to different forms of media (sports, concerts, dashcam footage, etc.) and precision by supporting pre-recorded videos and concentrating on one brand/advertisement at a time. This more focused approach offers greater flexibility and greatly reduces the technical skill and business knowledge required to effectively use such a program, making the tool easier to use and more accessible to a broader audience across multiple industries like those of business/marketing and entertainment.

User Stories:

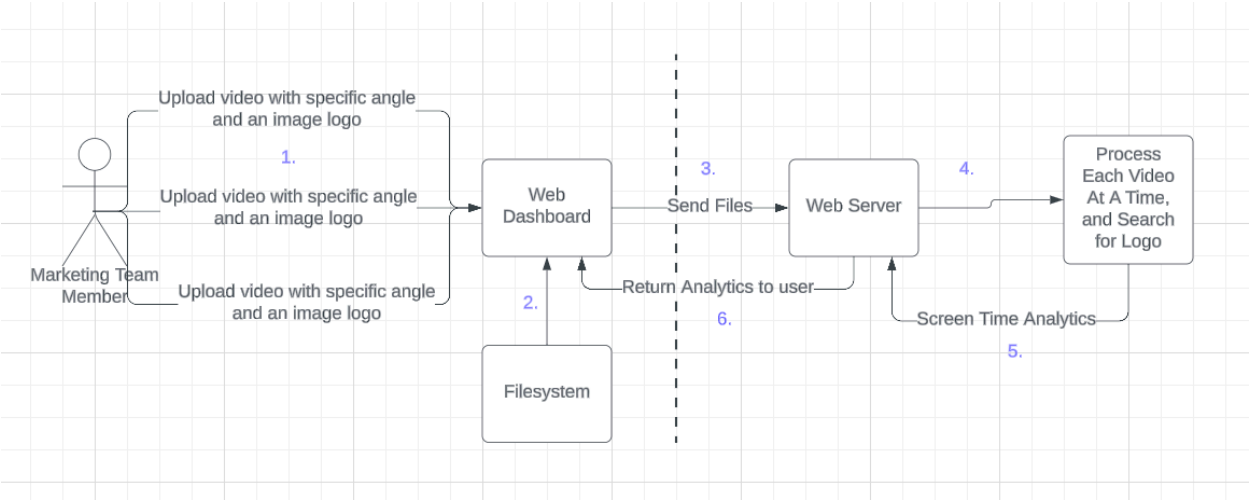
A. As a marketing team member, I want to track advertisement performance to analyze and evaluate the return on investment of my campaigns.

- **A.1.** There shall be a way for the marketing team member to upload video files and image files of their advertisements.
- **A.2.** There will be a process that will be applied to the uploaded videos to examine when and where the provided advertisement becomes visible.
- **A.3.** The system will determine the screen time and time stamps from the provided image and video resources to show how long the logo is visible for, and also the times in which it is visible for.
- **A.4.** There shall be a way to receive feedback on advertisements via the web server returning the findings of the metrics calculated from the image recognition in the program to the web based dashboard for the marketing team member to be able to evaluate.



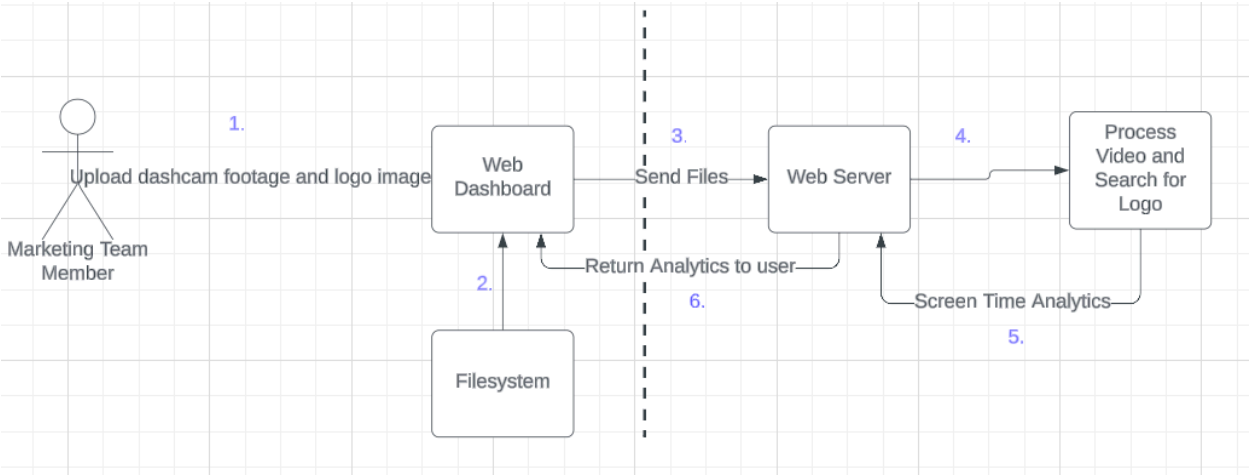
B. As a marketing team member, I want to have the ability to compare visibility metrics across a variety of different angles/videos so I can identify trends for future campaigns and identify the optimal placements for ads with the highest screen time.

- **B.1.** There will be a way for a marketing team member to use the web-based dashboard to upload video files with their advertisements in it, and there will also be a way to upload the logo/advertisement that they wish to search for.
- **B.2.** There shall be a way for the system to be able to spot and recognize when a company's advertisements and/or logo appear in a video.
- **B.3.** The model shall only process a singular video and logo combination at any one time.
- **B.4.** The program shall evaluate the data produced from analyzing the video and in turn calculate the overall screen time that the logo had in the individual video and what times that it was visible throughout the video.
- **B.5.** The server will transmit the data back to the web-based dashboard for the marketing team members to visualize and identify campaign trends in.



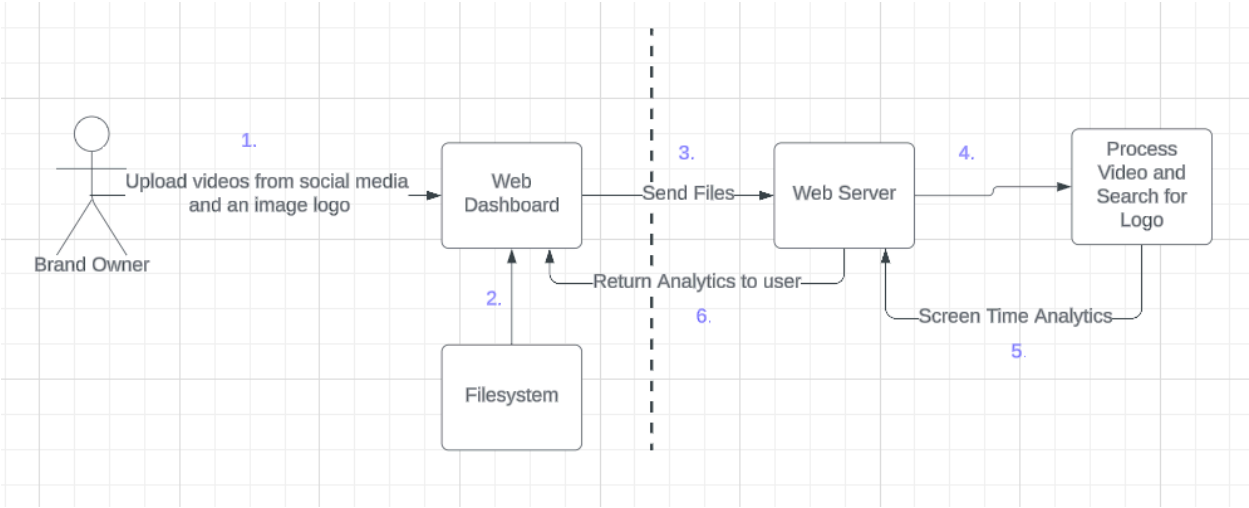
C. As a marketing team member, we want to be able to upload dashcam footage to analyze which of our billboards and signs were most visible with our logo, so that we can best decide where our advertisement would be the most effective.

- **C.1.** The website will provide a way for the marketing team to upload dashcam video files and image files of their logo.
- **C.2.** The system will examine the dashcam video to find when the uploaded advertisement was visible on the billboards and signs.
- **C.3.** The program will calculate how long you could see the advertisements, and provide timestamps for when the advertisements appeared.
- **C.4.** The web server shall return the metrics to the marketing team in a human readable format via the web-based dashboard.



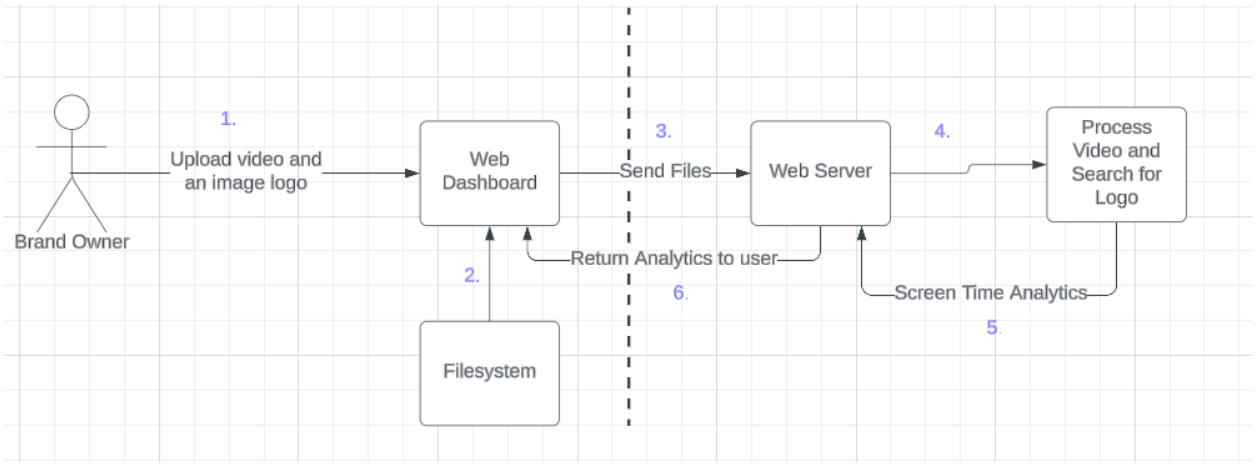
D. As a brand owner, I want to analyze how much time my brand appears in videos, so I can assess my brand's prominence on social media and other platforms.

- **D.1.** The website will provide an upload file feature for us to retrieve the social media video files and the image logo file from the brand owner.
- **D.2.** The program will systematically determine the overall time within the social media post that the brand's logo appears for, and the multiple time markers for when in the post it is in view.
- **D.3.** The program shall calculate and return the amount of time the advertisement appeared on video, and the times in which it did so.
- **D.4.** The web server for the program will forward the calculated data back to the dashboard in a structured format, including screen time and time stamp logs, ensuring the brand owner can clearly understand and utilize the information without requiring specialized training.



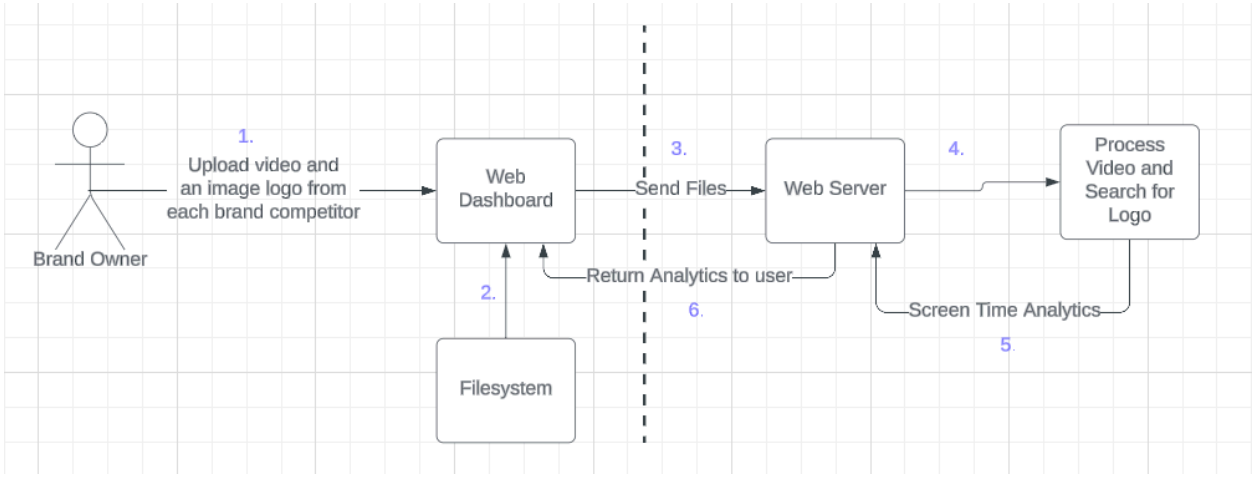
E. As a brand owner, I want to use analytical data on brand visibility, so I can present it to stakeholders and demonstrate the value of my advertising efforts.

- **E.1.** The web dashboard will allow for the brand owner to upload a video file and a logo image file.
- **E.2.** The system will apply a process to be able to determine when the logo appears throughout the uploaded video.
- **E.3.** The system will compute screen time and time stamps from the data analyzed within the video which would be inclusive of the logo's overall screen time and the timestamps in which it appears throughout the video.
- **E.4.** The web server will return the metrics to the brand owner via the web-based dashboard in an organized and easy manner to be able to share with their stakeholders.



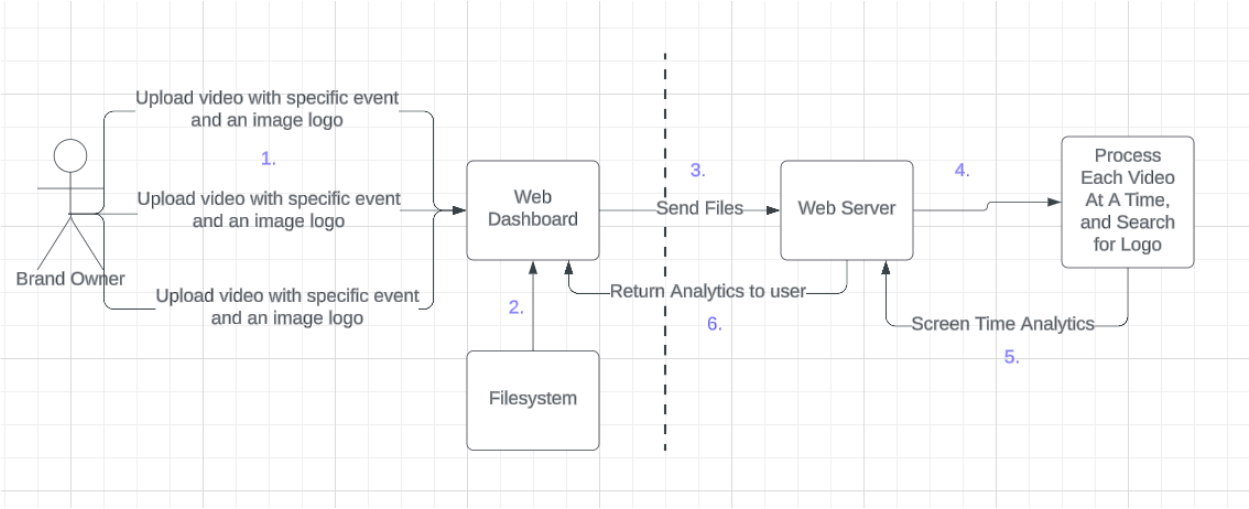
F. As a brand owner, I want to compare the visibility of my brand against competitors in the same footage so that I can assess my relative market presence.

- **F.1.** The brand owner will be able to upload a singular video file and different logo image files.
- **F.2.** The system will utilize a methodology to be able to process when the logo appears within the video, one logo at a time.
- **F.3.** The system will compute the different types of metrics for each of the uploaded logos within the video, and include the overall screen time and timestamps that it is visible for.
- **F.4.** The web server will return the metrics for each individual uploaded logo to the brand owner via the web-based dashboard, giving brand owners a way to compare the visibility of their brand against their competitors.



G. As a brand owner, I want to understand how different types of events (e.g., sports, concerts, festivals) impact the visibility of my sponsorship logos so that I can choose the most effective partnerships.

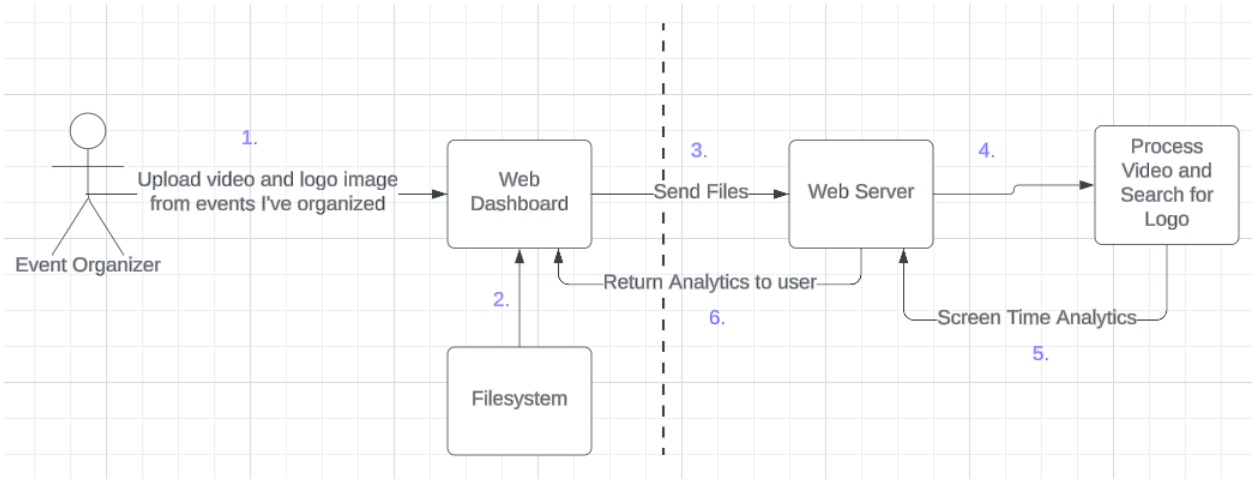
- **G.1.** The brand owner will be able to upload a group of different videos and logos to search for in each respective video.
- **G.2.** The system will be able to process videos for a multitude of different types of events.
- **G.3.** The system will process each video using a combination of techniques to identify when the chosen logo is visible in the video.
- **G.4.** The system will calculate different metrics which are inclusive of the overall screen time and the time stamps for when the logo was visible for each of the videos individually.
- **G.5.** The web server will return the metrics to the brand owner via the web-based dashboard, allowing for the brand owner to compare the different data points to decide which event is the most effective.



H. As an event organizer, I want to analyze video content from my events to measure the exposure of sponsor logos so that I can demonstrate the value of sponsorships to potential clients.

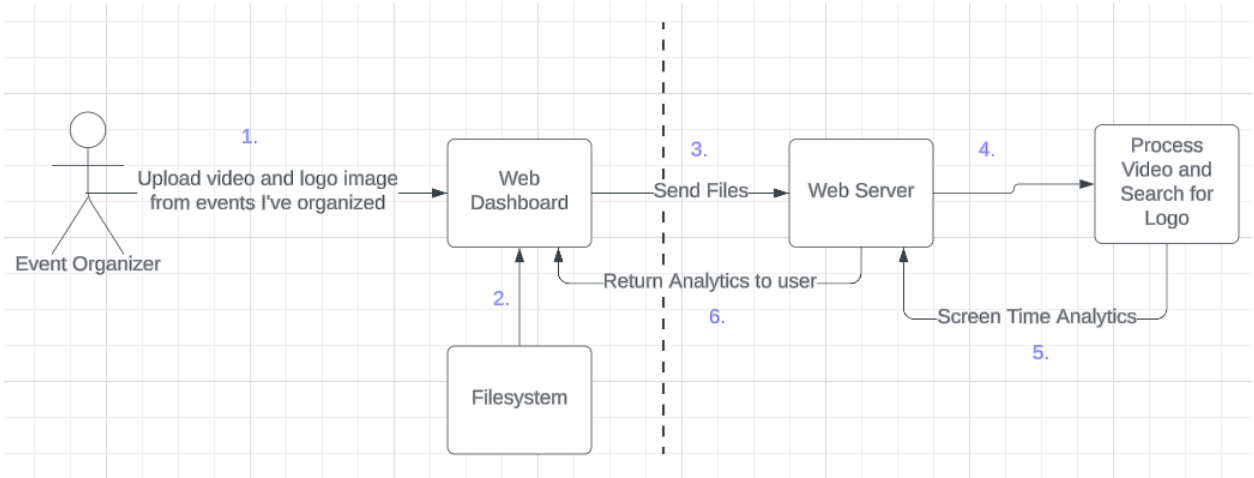
- **H.1.** The event organizer will be able to upload their event's video files and image files of their sponsor's logos.
- **H.2.** The system will have the ability to process when one of the event organizer's sponsor's logos appears within the video.
- **H.3.** The system will use this data to calculate different metrics from the video, which will include the screen time an individual sponsor is receiving and the times in which their logo appears.

- **H.4.** The web server will then return the calculated metrics back to the web dashboard, allowing for the event organizer to display how valuable a specific advertisement location can be.



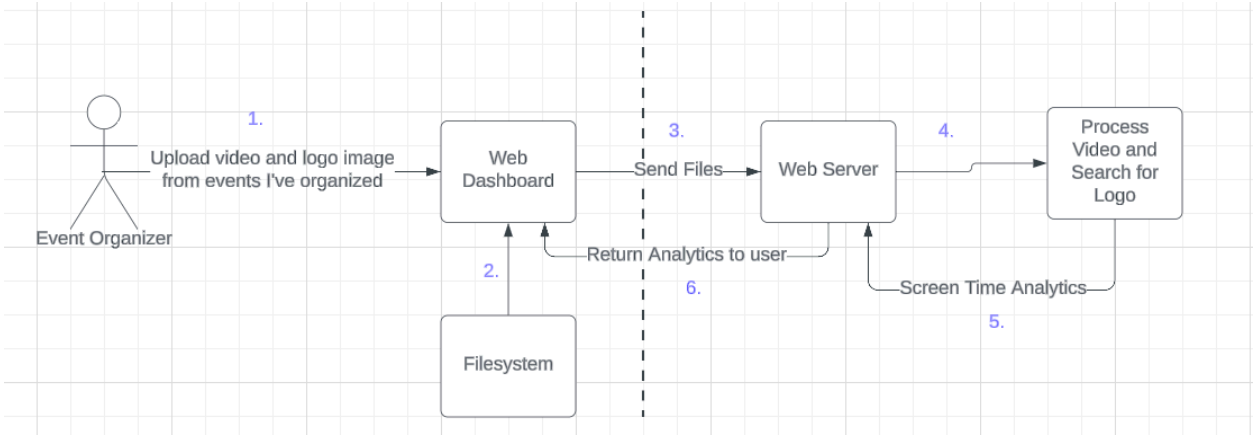
I. As an event organizer, I want to track the visibility of an advertisement so that I can see what companies are getting the most exposure so I can provide them feedback.

- **I.1.** The system will allow the event organizer to upload video or still frame shots and the logo that will be located in the footage.
- **I.2.** The system will process footage to detect all the instances of the sponsor's logos and advertisements during an event.
- **I.3.** The system shall be able to provide exposure time during a video or detect a logo within a still frame shot.
- **I.4.** The web server will return the total exposure time, and time stamps of when the logo was found which is to be displayed in human-readable format on the web-based dashboard.



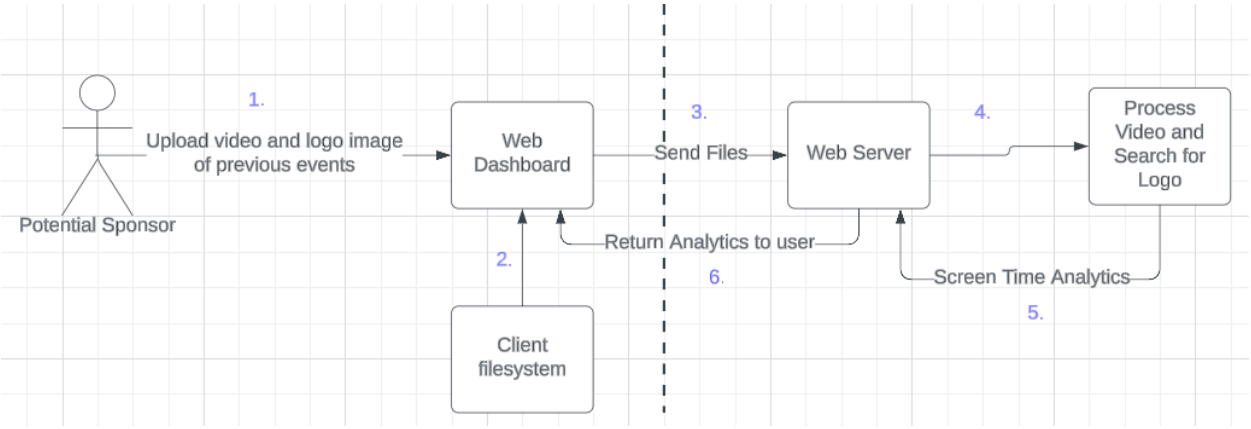
J. As an event organizer, I want to provide detailed and accurate reports on sponsor logo visibility, so I can attract new sponsors and retain existing ones.

- **J.1.** The system shall allow the event organizer to upload video and image files from events to be analyzed.
- **J.2.** The system shall process the video and image that was uploaded to be able to detect the logo as it comes into the camera's field of view.
- **J.3.** The system shall calculate different metrics, including screen time and timestamps of when the logo was in the video.
- **J.4.** The web server will send the overall logo summary (calculated metrics) back to the user to view and analyze on the web-based dashboard.



K. As a potential sponsor, I want to analyze sample footage of previous events to evaluate the visibility of similar brands, so I can decide whether to invest in sponsorship opportunities.

- **K.1.** The user shall have a way to upload a video file and an image of a logo, ensuring the correct format for each.
- **K.2.** The system will implement a process so that the program is capable of identifying the logo within the video.
- **K.3.** The system will calculate metrics, including screen time and timestamps of when the logo was in the video.
- **K.4.** The web server will be able to send the overall logo summary (calculated metrics) back to the user to view on the web-based dashboard.


1.
Upload video and logo image of previous events
Potential Sponsor
Web Dashboard
2.
Client filesystem
3.
Send Files
Web Server
4.
Process Video and Search for Logo
Return Analytics to user
6.
Screen Time Analytics
5.