

CS5543 Real -Time Big Data Analytics
Project Report 1
Read Video

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- **Project Objectives**

Significance

To maintain a track record of each player and describe the swimming style. As many people are not aware of various swimming styles and the basic rules of swimming its being difficult to understand the swimming videos. So we would like to come up with an approach describing the swimming style of each player and maintaining track record of each player.

Features

- 1) Identifying the key frames
- 2) Creating highlighted video
- 3) Maintaining track record of the player
- 4) Recognizing swimming style

- **Approach**

Data Sources: Youtube, TRECVID

Analytic Tools: Spark and Storm

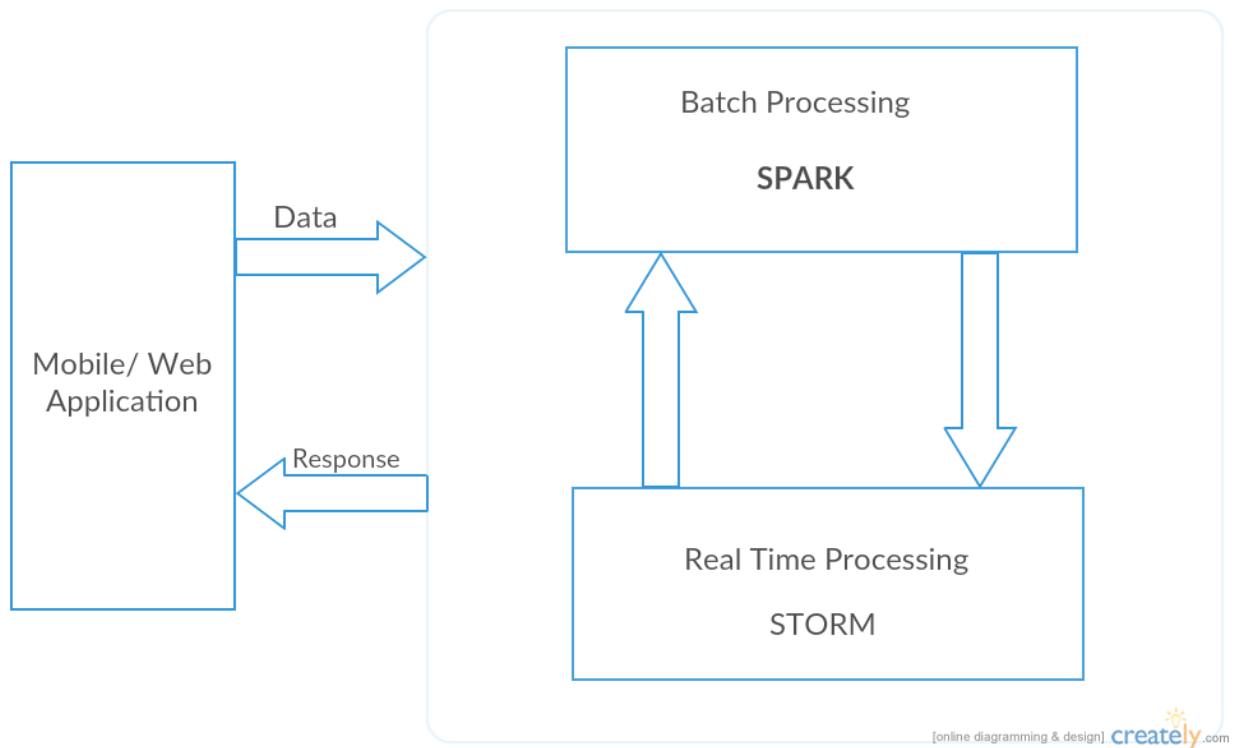
Analytical Tasks: Processing each and every frame individually, tracking each player in Storm Bolt.

Expected Input: Swimming Video

Expected Output: Mainframes, swimming style, highlighted video, track record of each player.

- **Application Specification**

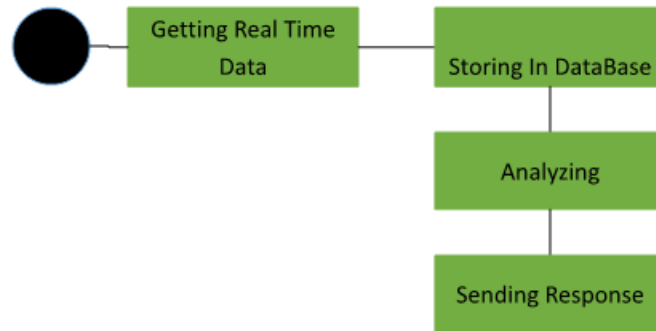
Software Architecture:



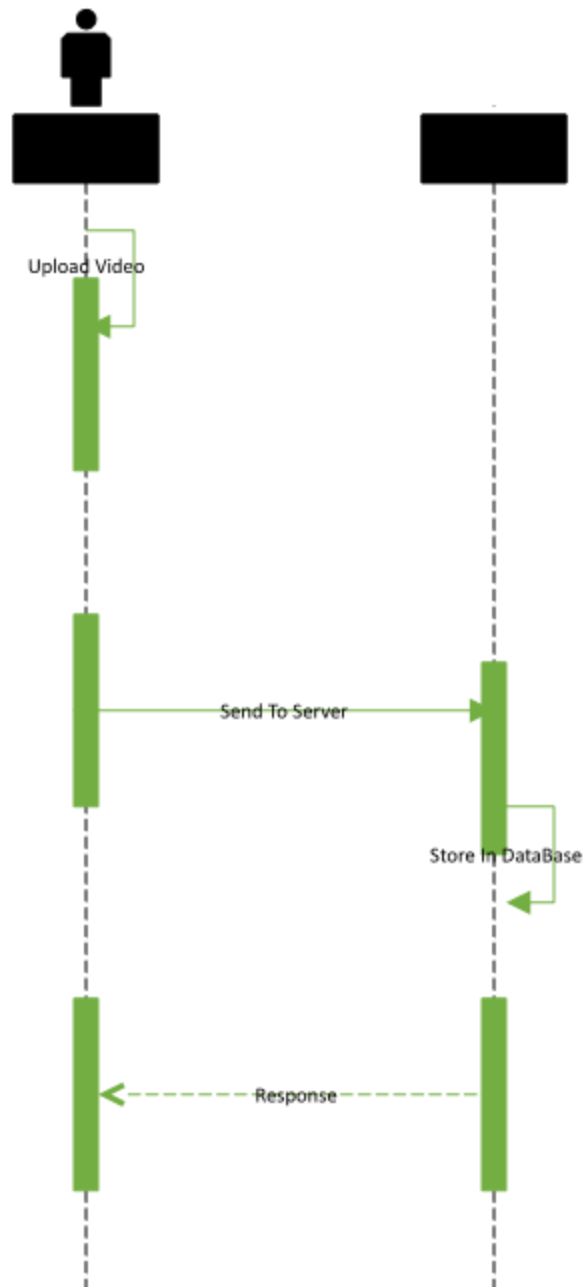
Technologies:

- 1) Android (Mobile Application)
- 2) Spark (Batch Processing, Model)
- 3) Storm (Real Time Streaming)
- 4) Kafka (Communication)

Activity Diagram:



Sequence Diagram:

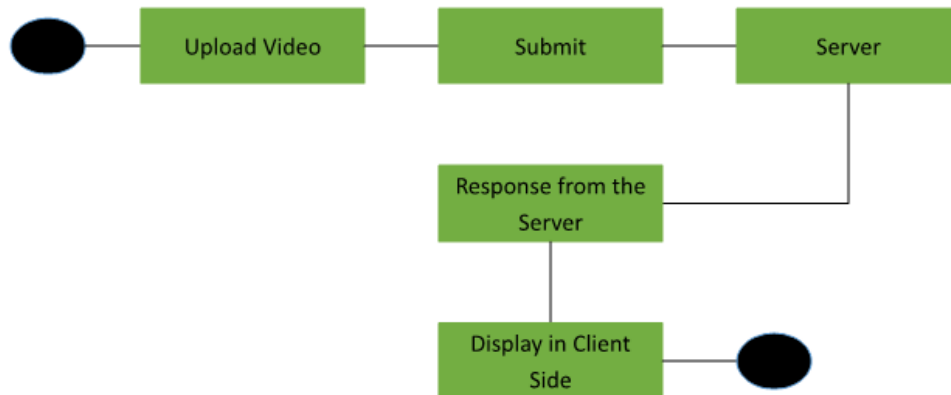


Operation Specification

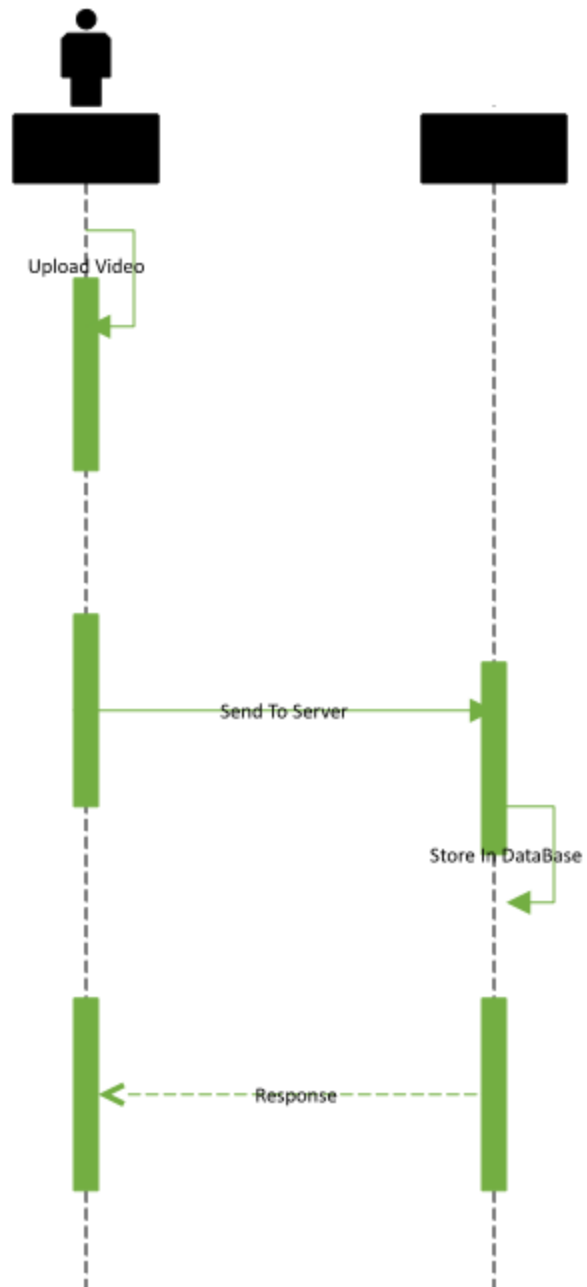
Input: Video

Output: Text Description, Video

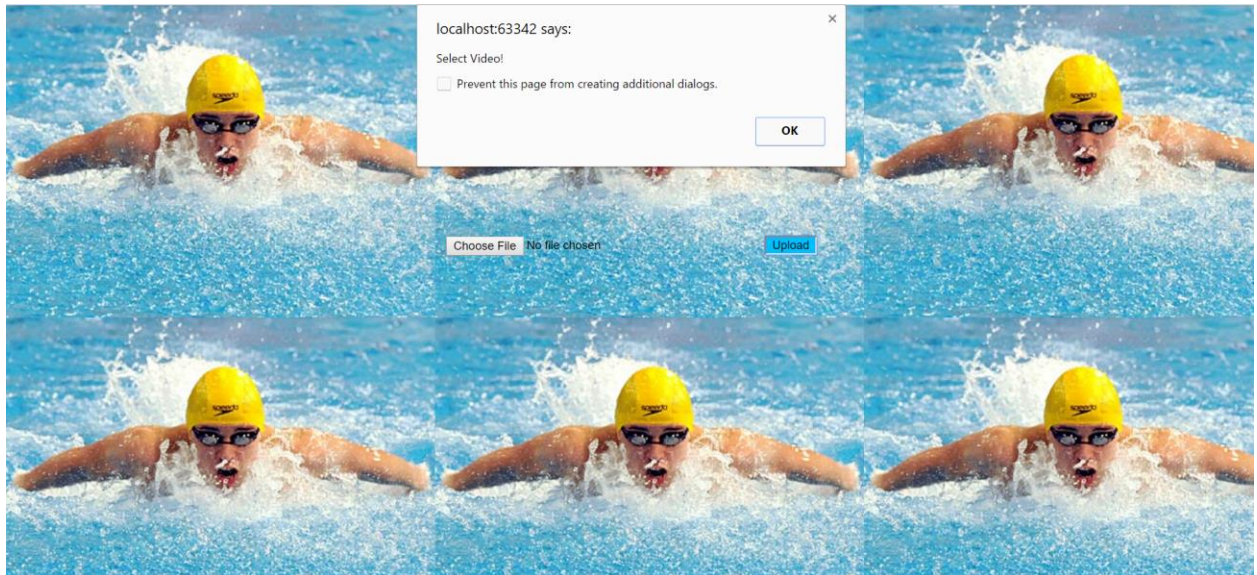
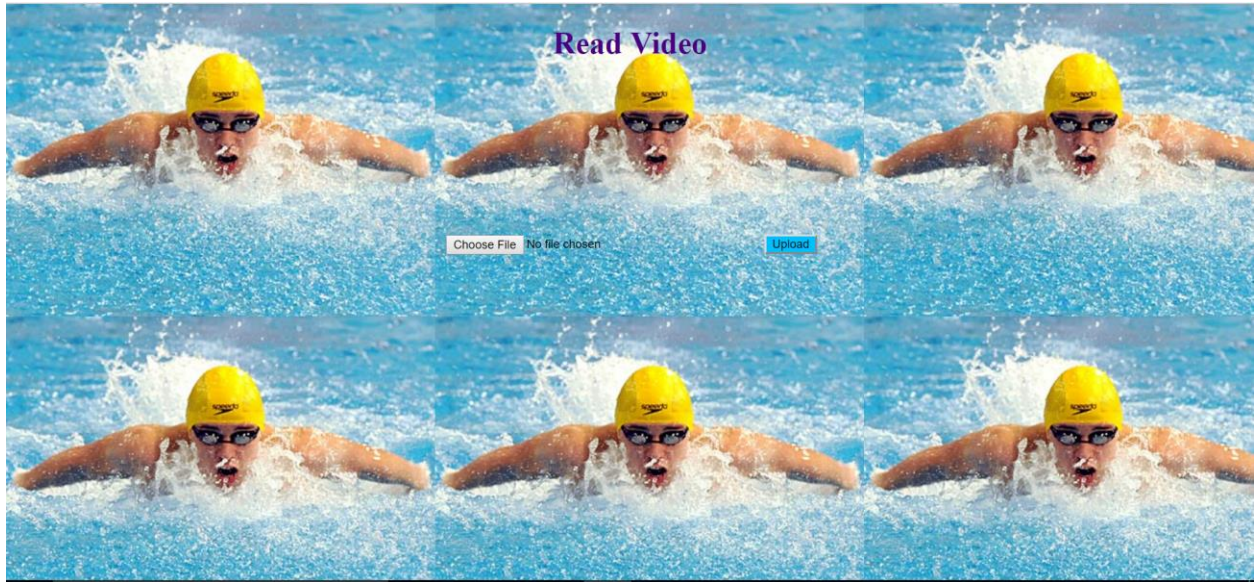
Activity Diagram:

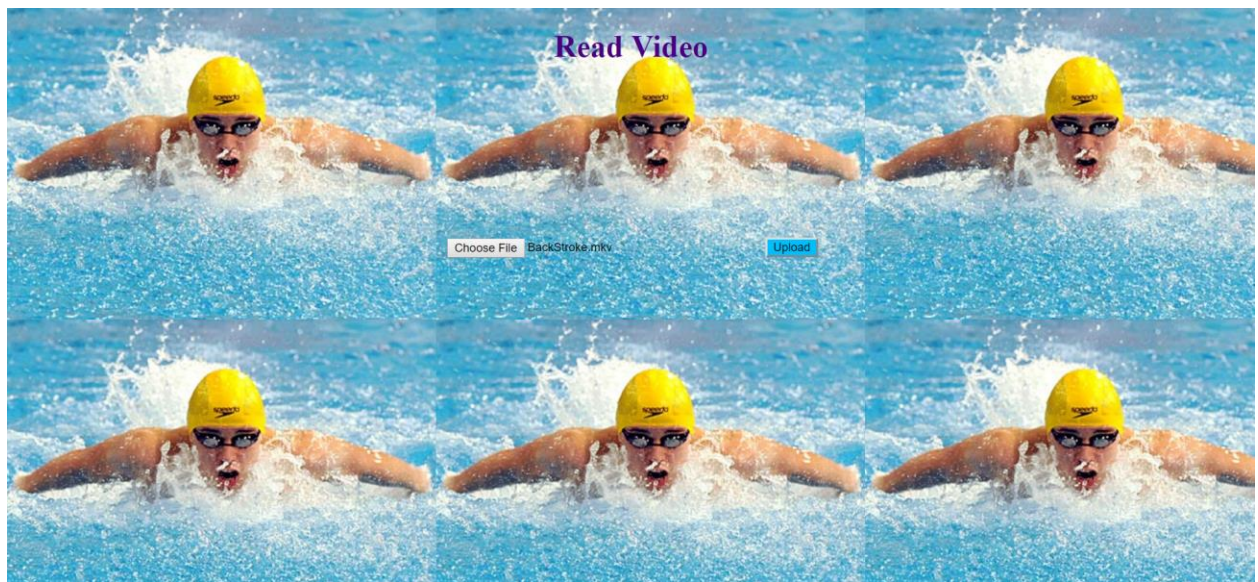
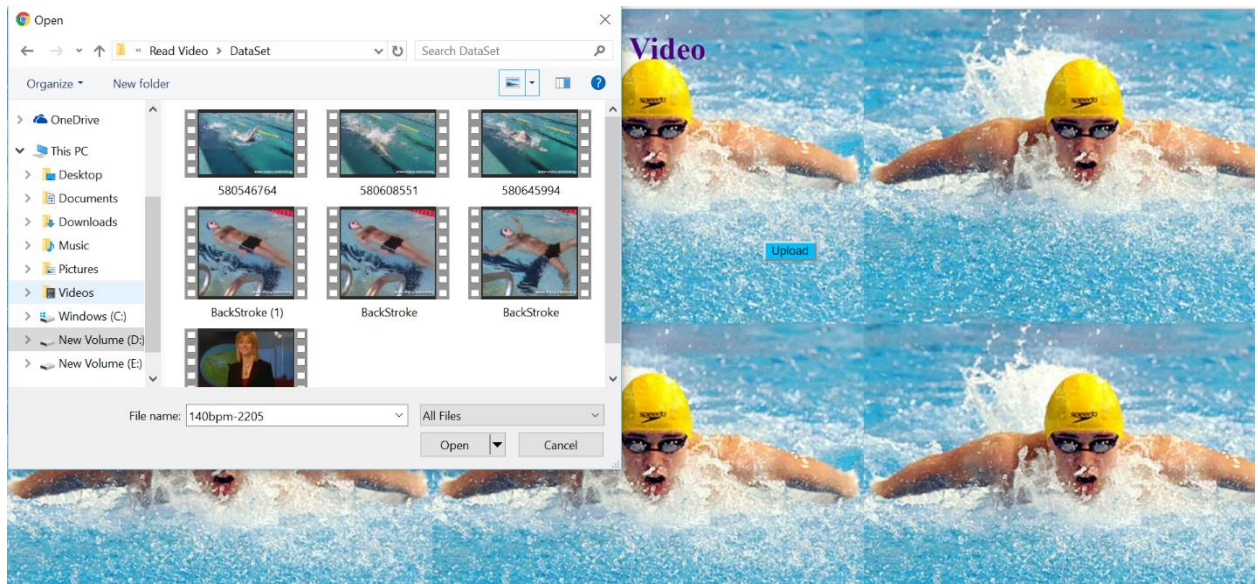


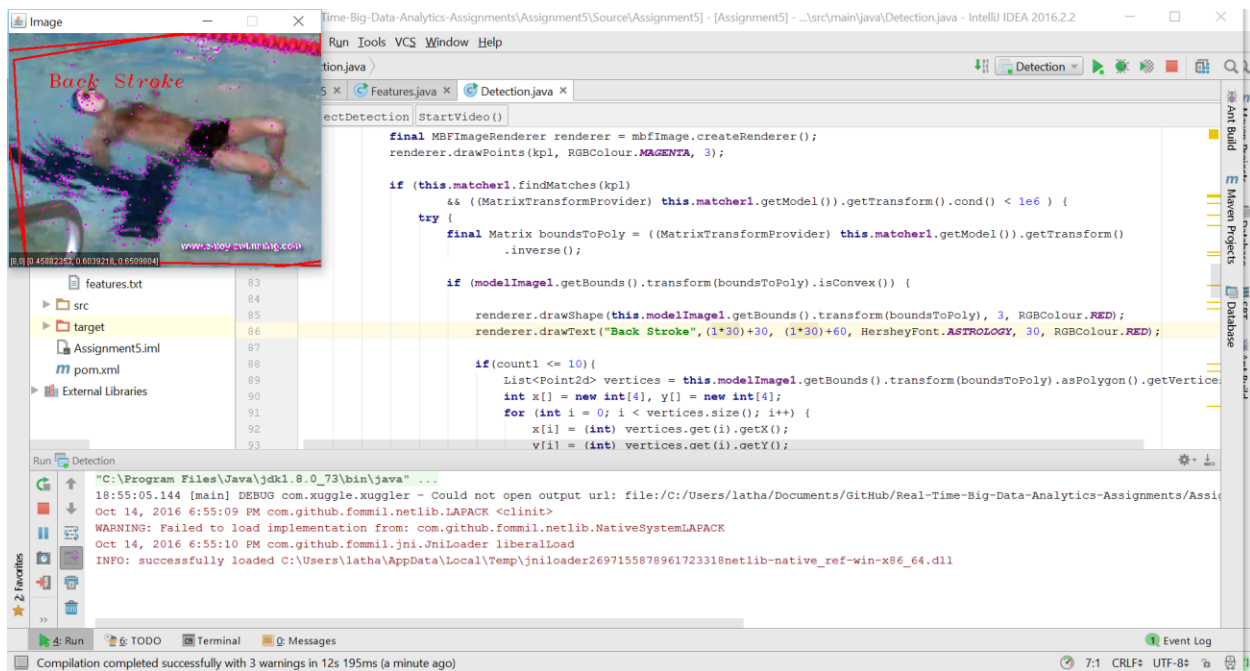
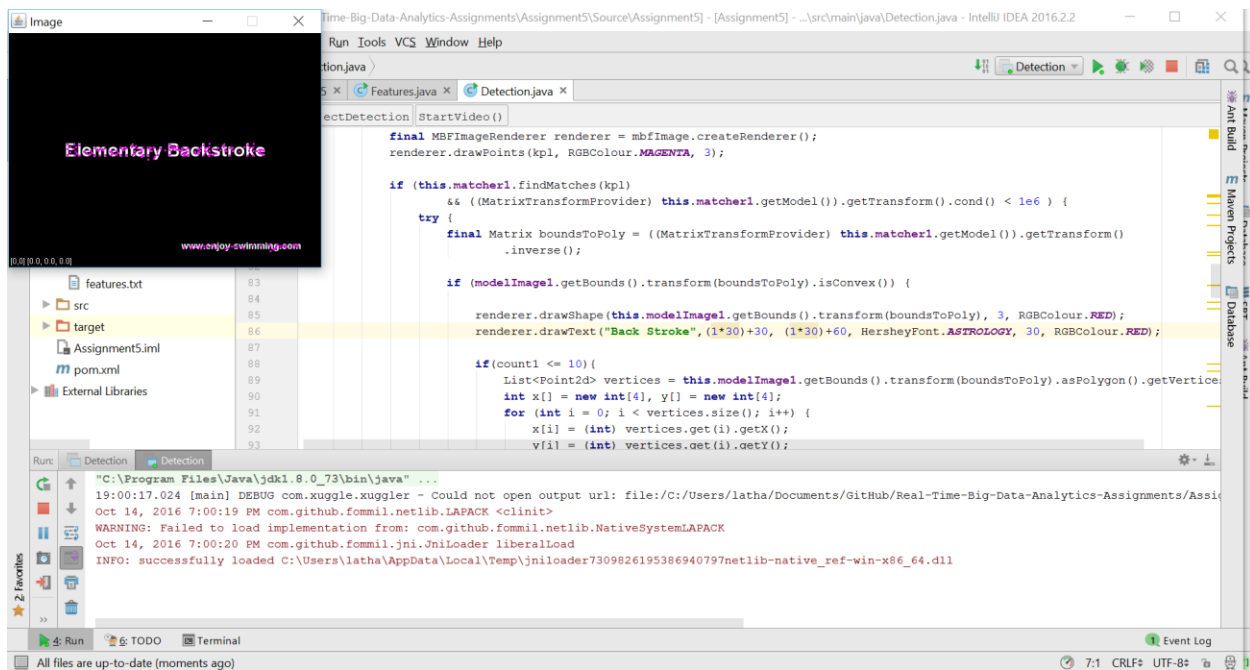
Sequence Diagram:

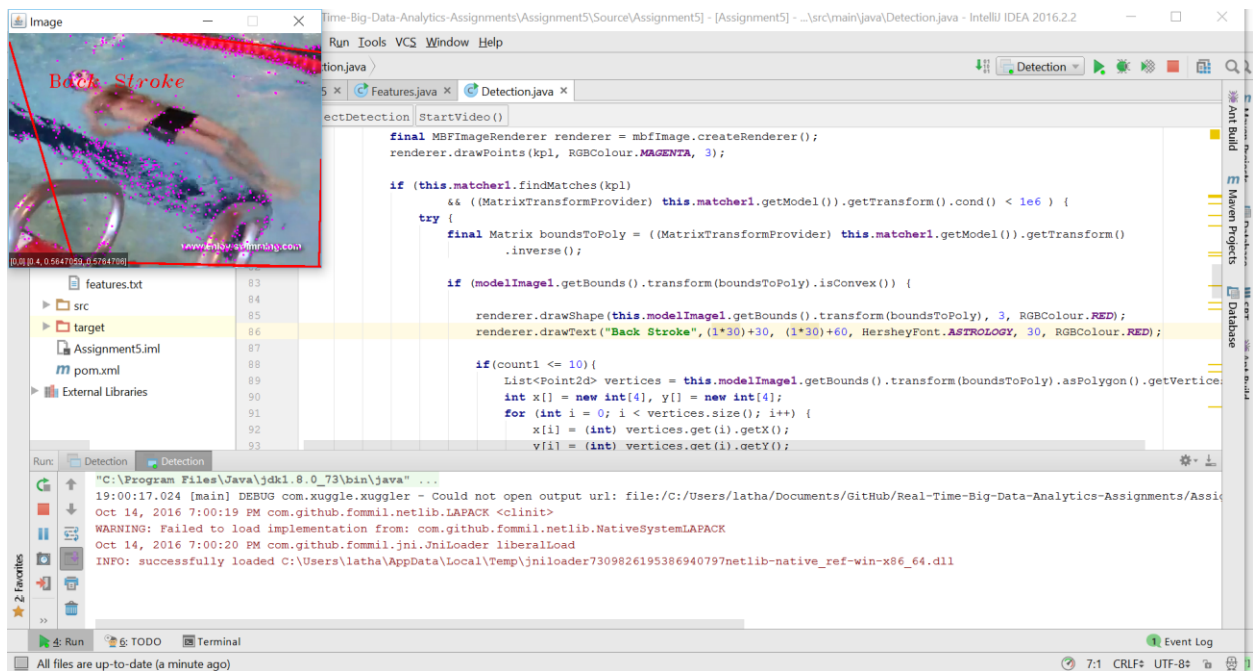
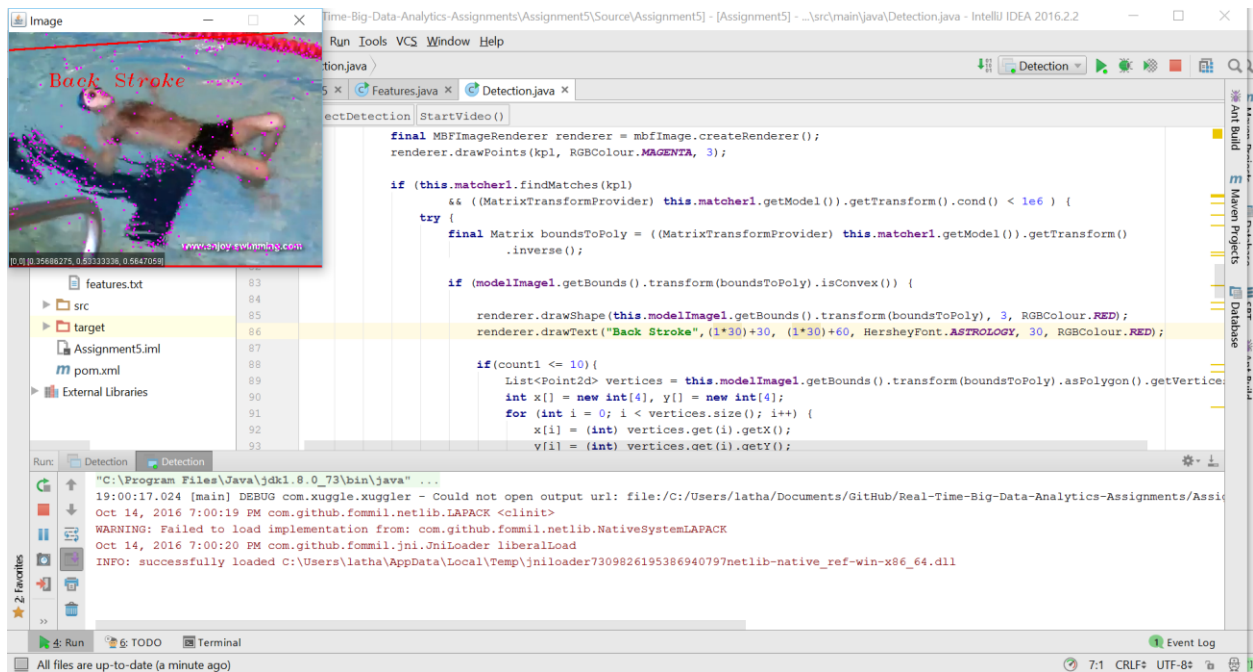


- Documentation









- **Project Management**

Plan:

Increment 1: Key Frame Detection and Object Tracking

Increment 2: Client side UI

Increment 3: Working with Storm and Spark

Increment 4: Communication between client and server

Work Completed: For the Second increment we completed building the client side UI. At the same time, we are able to discover the swimming styles and highlighting the style in the video with a bounding box.

Responsibility: Both of us have divided the tasks equally and worked on it. At the end of each task we shared our knowledge in that task.

Contributions: Both of us worked on all the tasks equally.

Akhilesh Gattu: 50

Latha Muddu: 50

Work to be Completed:

For the upcoming increments the primary task that needs to be completed is the server side development and at the end integrating both the client and server implementations.

- **Submission & Deployment**

Github Link:

<https://github.com/AkhileshGattu/Read-Video/tree/master/Source>