Project Report On

Online Media Converter

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Introduction

- The name of my project is “**Online Media Converter**”
- As It’s name says, it is a media converter application for **Videos.**
- It is a web application that can be accessed from any device having a modern operating system and capable of handling websites.
- It offers a clean and easy to use user interface that facilitates users to convert their videos.
- Users can login to their account, upload new videos which will be saved on the web application as long as they like and can convert and download them on the fly.
- This web application, thus work as a cloud storage for the videos and a conversion tool at the same time.

Abstract Of The Project

- There are many times when we have to change the attributes of a video such as its resolution, it's format or compress it to decrease it's size.
- There are specialized software built to perform this task but these software are platform dependent. Therefore, a conversion tool built for one operating system cannot work on the other operating system.
- Keeping this drawback in mind, I have developed a web based solution to this problem.
- As we all know, when an application is a "web application", it becomes platform agnostic. Since web can be accessed from any platform, therefore, this conversion tool can work on any platform that supports a modern web browser.
- Apart from being a platform independent conversion tool, this web application also work as a cloud storage for videos.

Scope Of The Project

- This project aims to provide a platform agnostic application for the users to convert their videos, store them in a secure manner, and get additional information regarding their videos.
- Since there are numerous formats and resolution available for the videos, this application aims to support uploading and conversion of most commonly used video formats such as .mp4, .avi, .flv and so on.
- The applications aims to provide a user friendly UI that can be easily understood.

Online Media Converter v/s The World

Other Applications

- Other video conversion tool are often in the form of binaries complied to their specific platforms.
- Often they are complex and hard to understand.
- Do not provide any cloud storage for videos.
- Use client's resources for video conversion.

Online Media Converter

- Being a web application, online media converter is platform agnostic.
- Easy to use and understand.
- Do provide a cloud storage for videos.
- Uses server's resources for video conversion.

Project Modules

Server's Side

- Users.service.js — Module for providing REST services to perform CRUD operation on user's database.
- Uploads.service.js — Module for providing REST services to perform CRUD operation on video database as well as handling video uploads.
- Convert.service.js — Module for providing REST service to perform CRUD operation on conversion database as well as handling video conversion process.

Project Modules

Client's Side

- App.vue — Container module for all other modules.
- Account.vue — Module for user account summary.
- Login.vue — Module for user login.
- SignUp.vue — Module for user sign Up.
- Videos.vue — Module for video upload, conversion, deletion, and fetching additional information about the video.
- ConversionHistory.vue — Module for managing video conversion history.

Software Requirements

Server

Software Type	Requirements
Operating System	Windows 7 Service Pack 1 Or Higher
Database	Mongo DB v4.0.4+
Server	Node.js (feathers.js + Express.js) along with ffmpeg

Client

Software Type	Requirements
Operating System	Windows 7+, Android, Any GUI Linux Distro etc.
Web Browser	Google Chrome 60+, Edge, Mozilla Firefox, Safari or any modern web browser supporting HTML 5 and JavaScript ES5
Display	800x600 or higher

Software Requirements

Developer

Software Type	Requirements
Operating System	Windows 7 Service Pack 1 Or Higher
Database	Mongo DB v4.0.4+
Server	Node.js (feathers.js + Express.js) along with ffmpeg
Display	1024 x 768 32-Bit Color Depth or higher
IDE	Microsoft Visual Studio Code
Version Control	Git

Hardware Requirements

Server

Component	Requirements
Processor	Quad Core Multi-threaded CPU or better
RAM	4 GB+
Hard Disk Space	At least 80GB for OS and server application and additional storage for cloud

Client

Component	Requirements
Processor	Any Processor Capable Of Handling Modern Website. (Performance >= Intel Pentium 4)
RAM	1 GB+
Display	800x600 or higher
Hard Disk Space	Storage for OS And Videos For X86 Based OS >= 40 GB (Windows And Linux) For ARM Based OS >= 8 GB (Android)

Hardware Requirements

Developer

Component	Requirements
Processor	Quad Core Multi-threaded CPU or better
RAM	8 GB+
Hard Disk Space	At least 500GB for OS and server application, IDEs and additional storage for testing cloud storage
Display	1080p Display. More than one display preferred

Technologies Used

Front End

- HTML, CSS, JavaScript
- Vue.js
- Vuetify
- Feathers-Vuex

Back End

- Node.js
- Express.js
- Feathers.js
- ffmpeg
- Mongo DB

Cost Estimation Of The Project

- Since, this is an organic project, we'll take the respective values for the coefficients.
  Lines of code(LOC) = 2700
  Thus, **KLOC** = 2700/1000 = **2.7**
- Taking the values of the coefficients as

a_b	b_b	c_b	d_b
2.4	1.05	2.5	0.38

Effort Applied (E)

$= a_b (KLOC)^{b_b}$ [man-months]

$= 2.4(2.7)^{1.05}$

= 6.81 [man-months]

Development Time (D)

$= c_b (\text{Effort Applied})^{d_b}$ [months]

$= 2.5(6.81)^{0.38}$

= 5.812 [months]

People Required (P):

= Effort Applied / Development Time

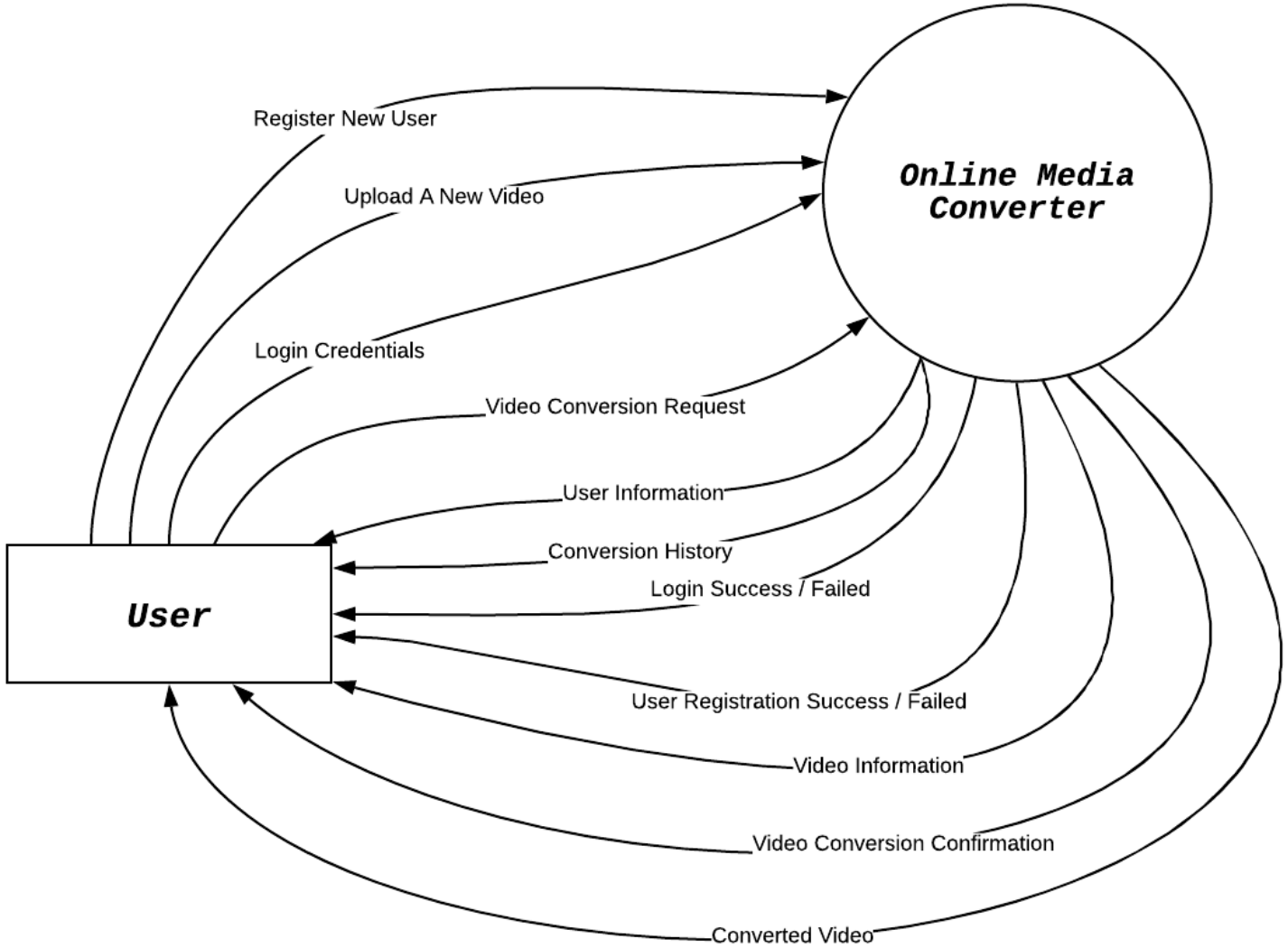
= 6.81 / 5.812

≈ 1

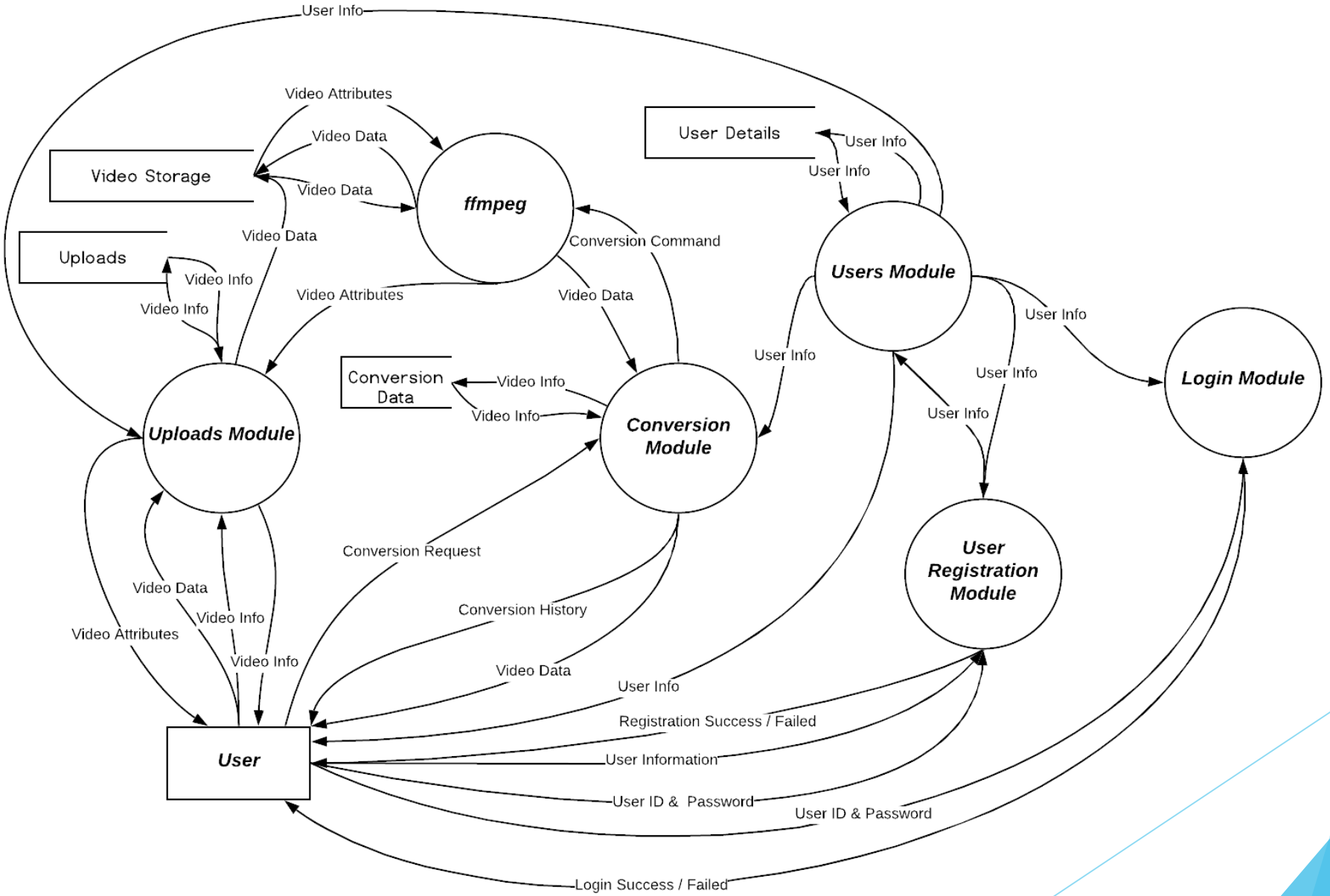
Gantt Chart

	December 19	January 20	February 20	March 20	April 20	May 20	June 20
Requirement Specification And Analysis	***20 Dec - 31 Dec***						
Designing The System		***1 Jan - 31 Jan***					
Coding			***1 February - 31 March***				
Implementation				***1 Mar - 31 Mar***			
Unit Testing					***1 Apr - 30 Apr***		
Integration Testing					***1 Apr - 30 Apr***		
System Testing					***1 Apr - 30 Apr***		
Documentation						***1 May - 31 May***	
Maintainance							***1 June - Now***

Context Diagram



Level 1 DFD


User Info
Video Attributes
Video Data
Video Storage
Video Data
ffmpeg
User Details
User Info
User Info
Video Data
Uploads
Conversion Command
Users Module
Video Info
Video Info
Video Attributes
Video Data
User Info
Login Module
Conversion Data
Video Info
Video Info
User Info
User Info
Uploads Module
Conversion Module
Conversion Request
User Registration Module
Video Data
Video Info
Conversion History
Video Attributes
Video Info
Video Data
User Info
Registration Success / Failed
User
User Information
User ID & Password
User ID & Password
Login Success / Failed

Entity Relationship Diagram