

Smart Phone Video Editor



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M.TARIQ SHAHZAD

ABSTRACT

The project designs and develops an android-based video editing tool that provides basic and few of the advanced video editing functions (e.g. cutting; compressing; fast; slow; extracting image frames: fading; extracting audio; reversing; etc.). The basic feature includes compressing, trimming, slow video and fast video while advance features include fading, extracting audio and reversing video. In this way, the tool provides an android-based platform to edit video content in multimedia production life cycle.

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CHAPTER 1

1. SOFTWARE PROJECT MANAGEMENT PLAN

1.1 INTRODUCTION

Software Project Management Plan is the controlling document for managing a software project; it describes the software approach, milestones and other necessary details to develop software work products that satisfy the product requirements.

1.2 PROJECT OVERVIEW

Smart Video Editor is an android-based video editing application that helps users to edit videos with some basic and advance features. In addition, this application is ad-free.

1.2.1 PROJECT DELIVERABLES

The project deliverables include the following five deliverables:

- Software Project Management Plan
- Software Requirement Specification
- Software Design Description
- Software Test Documentation
- Implementation

The following table shows document deliverables and their brief description:

Document Deliverables	Description	DELIVERABLE
Software Project Management Plan (SPMP)	Description of the software approach and associated milestones	1 st Deliverable
Software requirements specification (SRS)	Description of expected software features, constraints, interfaces and other attributes	1 st Deliverable
Software Design Description (SDD)	Description of how the software will meet the requirements. Also describes the rationale of design decisions taken.	2 nd Deliverable
Software Test Documentation (STD)	Description of the plan and specifications to verify and validate the software and the results.	2 nd Deliverable
Implementation	Implementation of the project.	3 rd Deliverable

Table No. 1.1 Project Deliverables

1.3 PROJECT ORGANIZATION

Project Organization contains description of software process model used for the project, roles and responsibilities of the people involved in making the project and tools and techniques to be used in this project.

1.3.1 SOFTWARE PROCESS MODEL

For the development of this project, waterfall process model will be used because:

- Requirements are well understood
- Easy to understand
- Easy to manage
- Clear milestone

1.3.2 ROLES AND RESPONSIBILITIES

I am single developer of this project so there is no division of roles and responsibilities and all responsibilities are on me regarding this project.

1.3.3 TOOLS AND TECHNIQUES

The following table shows the tools and techniques to be used in the project:

Sr.	Tools and Techniques	
1	MS Word 2016	Used for documentation purposes.
2	MS Visio 2016	Used for making models and diagram.
3	ProjectLibre 1.6.2	Used to make project plan.
4	Android Studio 173	For developing the application

Table No. 1.2 Tools and Techniques

1.4 PROJECT MANAGEMENT PLAN

Project Management plan describes the task, the deliverables and milestones and resources needed to complete the task.

1.4.1 Tasks

Following is the list of task for the project:

1.4.1.1 Problem Understanding

- **Description:**
First problem definition is must.
- **Deliverables & Milestone**
None
- **Resources Needed:**

The following table shows the resources required to complete the task:

People	M Tariq Shahzad Supervisor
---------------	-------------------------------

Table No.1.3 Problem Understanding Resources

- **Dependencies and Constraints:**
None
- **Risks and Contingencies**
None

1.4.1.2 Software Project Management Plan

- **Description:**
Secondly, software approach and milestones are identified.
- **Resources Needed:**
The following table shows the resources required to complete the task:

People	M Tariq Shahzad Supervisor
Software	MS Word ProjectLibre
Hardware	Computer

Table No. 1.4 Software Project Management Plan

- **Dependencies and Constraints:**
Problem Understanding
- **Risks and Contingencies:**
None

1.4.1.3 Software Requirement Specification

- **Description:**
Thirdly, analysis on how the requirements will meet is included.
- **Deliverables and Milestones**
SPMP and SRS Document.
- **Resources Needed:**
The following table shows the resources required to complete the task:

People	M Tariq Shahzad Supervisor
Software	MS Word MS Visio
Hardware	Computer

Table No. 1.5 Software Requirement Specification

- **Dependencies and Constraints:**

SPMP

- **Risks and Contingencies:**

None

1.4.1.4 Software Design Description

- **Description:**

Fourthly, detailed design and interface design will be included.

- **Resources Needed:**

The following table shows the resources required to complete the task:

People	M Tariq Shahzad Supervisor
Software	MS Word MS Visio
Hardware	Computer

Table No. 1.6 Software Design Description

- **Dependencies and Constraints:**

Analysis and Requirement.

- **Risks and Contingencies:**

None

1.4.1.5 Software Test Documentation

- **Description:**

In this part, test plans and test case to verify and validate the tool and their results will be included

- **Deliverables and Milestones:**

SDD and STD.

- **Resources Needed:**

M Tariq Shahzad

- **Dependencies and Constraints:**

SDD

- **Risks and Contingencies:**

None

1.4.1.6 Software Implementation

- **Description:**

How the system will be implemented.

- **Resources Needed:**
M Tariq Shahzad
- **Dependencies and Constraints:**
STD
- **Risks and Contingencies:**
None

1.4.2 Timetable & Gantt Chart

Following is timetable of the project in Figure 1, which is divided into task and subtask.

	Name	Duration	Start	Finish	
1	Smart Phone Video Editor	192 days?	9/25/17 8:00 AM	4/4/18 5:00 PM	Dr.Umer Rashid (Supervisor);Tariq
2	Understand Problem	1 day?	9/25/17 8:00 AM	9/25/17 5:00 PM	
3	Making of SPMP Document	6 days?	9/26/17 8:00 AM	10/1/17 5:00 PM	
4	Analysis Phase	4 days?	10/3/17 8:00 AM	10/6/17 5:00 PM	Dr.Umer Rashid (Supervisor);Tariq
5	Gathering Requirements	1 day?	10/3/17 8:00 AM	10/3/17 5:00 PM	
6	Refine Requirements	1 day?	10/4/17 8:00 AM	10/4/17 5:00 PM	
7	Making of Document V1	2 days?	10/5/17 8:00 AM	10/6/17 5:00 PM	
8	Identify Specific Requirements	2 days?	10/5/17 8:00 AM	10/6/17 5:00 PM	
9	External Interface Requirement	2 days?	10/5/17 8:00 AM	10/6/17 5:00 PM	
10	User Interface	1 day?	10/5/17 8:00 AM	10/5/17 5:00 PM	
11	Hardware Interface	1 day?	10/5/17 8:00 AM	10/5/17 5:00 PM	
12	Communication Interface	1 day?	10/5/17 8:00 AM	10/5/17 5:00 PM	
13	Making of Document V2	2 days?	10/5/17 8:00 AM	10/6/17 5:00 PM	
14	Software Product Feature	6 days?	10/9/17 8:00 AM	10/14/17 5:00 PM	Dr.Umer Rashid (Supervisor);Tariq
15	Identify Use cases	2 days?	10/9/17 8:00 AM	10/10/17 5:00 PM	
16	Refine Use cases	2 days?	10/12/17 8:00 AM	10/13/17 5:00 PM	
17	Making of Document V3	2 days?	10/13/17 8:00 AM	10/14/17 5:00 PM	
18	Identify Software System Attributes	2 days?	10/17/17 8:00 AM	10/18/17 5:00 PM	Dr.Umer Rashid (Supervisor);Tariq
19	Reliability	1 day?	10/17/17 8:00 AM	10/17/17 5:00 PM	
20	Availability	1 day?	10/17/17 8:00 AM	10/17/17 5:00 PM	
21	Security	1 day?	10/17/17 8:00 AM	10/17/17 5:00 PM	
22	Maintainability	1 day?	10/17/17 8:00 AM	10/17/17 5:00 PM	
23	Portability	1 day?	10/17/17 8:00 AM	10/17/17 5:00 PM	
24	Making of Document V5	1 day?	10/18/17 8:00 AM	10/18/17 5:00 PM	
25	Database Requirements	3 days?	10/18/17 8:00 AM	10/20/17 5:00 PM	Dr.Umer Rashid (Supervisor);Tariq
26	Identify Database Requirements	2 days?	10/18/17 8:00 AM	10/19/17 5:00 PM	
27	Making of Document V6	2 days?	10/19/17 8:00 AM	10/20/17 5:00 PM	
28	Making of Final Document	2 days?	10/26/17 8:00 AM	10/27/17 5:00 PM	Dr.Umer Rashid (Supervisor);Tariq
29	Refining Final Document	2 days?	10/26/17 8:00 AM	10/27/17 5:00 PM	
30	Design Phase	15 days?	10/30/17 8:00 AM	11/13/17 5:00 PM	Dr.Umer Rashid (Supervisor);Tariq
31	Develop Design	15 days?	10/30/17 8:00 AM	11/13/17 5:00 PM	
32	Develop Architectural Design	2 days?	10/30/17 8:00 AM	10/31/17 5:00 PM	
33	Review Architectural Design	2 days?	10/31/17 8:00 AM	11/1/17 5:00 PM	
34	Develop Interface Design	3 days?	11/1/17 8:00 AM	11/3/17 5:00 PM	
35	Review Interface Design	2 days?	11/4/17 8:00 AM	11/5/17 5:00 PM	
36	Create Sequence Diagram	2 days?	11/6/17 8:00 AM	11/7/17 5:00 PM	
37	Create Design Class Diagram	4 days?	11/10/17 8:00 AM	11/13/17 5:00 PM	
38	Develop Algorithm	6 days?	11/14/17 8:00 AM	11/19/17 5:00 PM	Dr.Umer Rashid (Supervisor);Tariq
39	Draw Flow Chart	2 days?	11/14/17 8:00 AM	11/15/17 5:00 PM	
40	Write Pseudo Code	2 days?	11/15/17 8:00 AM	11/16/17 5:00 PM	
41	Review Pseudo Code	2 days?	11/16/17 8:00 AM	11/17/17 5:00 PM	
42	Draw decision table	2 days?	11/17/17 8:00 AM	11/18/17 5:00 PM	
43	Review Decision table	2 days?	11/18/17 8:00 AM	11/19/17 5:00 PM	
44	Evaluate Design	5 days?	11/24/17 8:00 AM	11/28/17 5:00 PM	Dr.Umer Rashid (Supervisor);Tariq
45	Validate Design	3 days?	11/24/17 8:00 AM	11/26/17 5:00 PM	
46	Verify Design	2 days?	11/26/17 8:00 AM	11/27/17 5:00 PM	
47	Review and Refine Design	2 days?	11/27/17 8:00 AM	11/28/17 5:00 PM	
48	Finalize Document	3 days?	11/28/17 8:00 AM	11/30/17 5:00 PM	
49	Implementation Phase	52 days?	2/12/18 8:00 AM	4/4/18 5:00 PM	Dr.Umer Rashid (Supervisor);Tariq
50	Front End	13 days?	2/12/18 8:00 AM	2/24/18 5:00 PM	
51	Coding	8 days?	2/12/18 8:00 AM	2/19/18 5:00 PM	
52	Review Front End	2 days?	2/19/18 8:00 AM	2/20/18 5:00 PM	
53	Refine Front End	5 days?	2/20/18 8:00 AM	2/24/18 5:00 PM	
54	Back End	28 days?	2/26/18 8:00 AM	3/25/18 5:00 PM	
55	Coding	20 days?	2/26/18 8:00 AM	3/17/18 5:00 PM	
56	Review Back End	4 days?	3/17/18 8:00 AM	3/20/18 5:00 PM	
57	Refine Back End	6 days?	3/20/18 8:00 AM	3/25/18 5:00 PM	
58	Testing and refinement	17 days?	3/19/18 8:00 AM	4/4/18 5:00 PM	
59	Testing editor	4 days?	3/19/18 8:00 AM	3/22/18 5:00 PM	
60	Finding Faults	3 days?	3/23/18 8:00 AM	3/25/18 5:00 PM	
61	Correcting Faults	10 days?	3/26/18 8:00 AM	4/4/18 5:00 PM	

Figure 1 Timetable

GANTT CHART:

The whole project schedule is shown in the Gantt chart, which is shown by following Figure 2

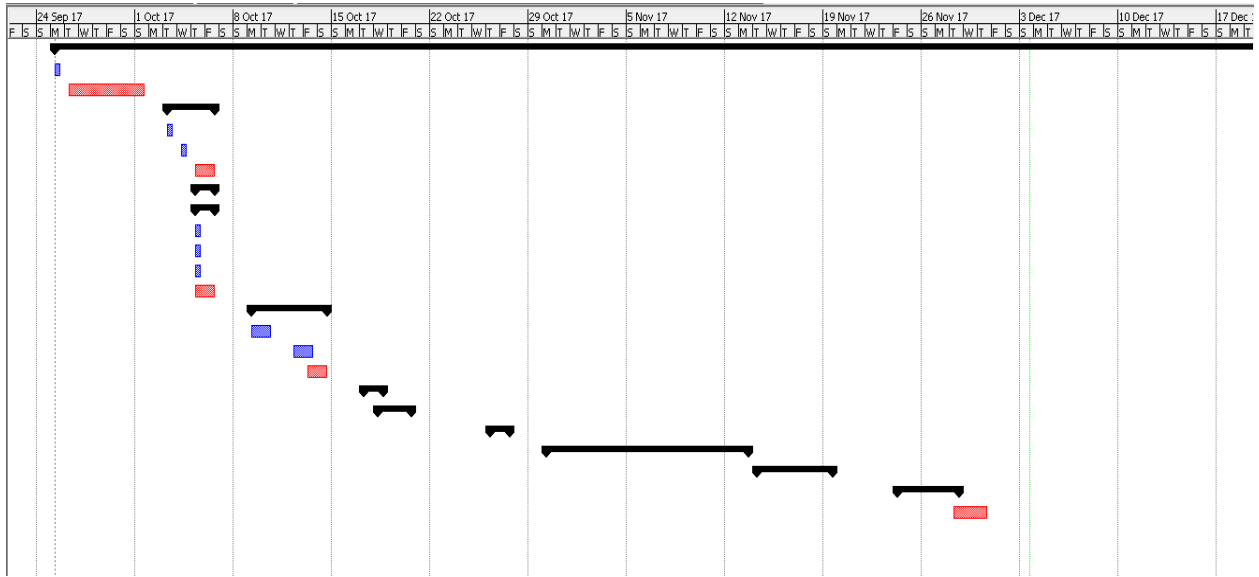


Figure 2 Gantt chart

CHAPTER 2

2. Software Requirements Specification

2.1 INTRODUCTION

A software requirements specification (SRS) is a description of a software system to be developed. It lays out functional and non-functional requirements, and may include a set of use cases that describe user interactions that the software must provide.

2.1.1 Product Overview

Smart phone Video Editor is an android-based video editing application that help users to edit videos with some basic and advance features. Smart phone Video Editor will provide simple and user friendly interface to the users.

2.1.2 Problem Statement

The purpose behind this project is to develop a video editing application. Users of this application can easily edit their videos by trimming, cropping, rotating, adding audio to the video and adding different filters etc. In addition, there should be ad-free services for users. In addition, this application can provide all services for off-line users as well

2.1.3 Purpose of product

Smart Video Editor will facilitate users to edit videos with simple and friendly user interface with ad-free services. Many times user needs to edit videos quickly but ads and complex interface consume a lot of time.

2.2 Background

Now days, everybody have a mobile phone and the number of users are increasing day by day. Many video editors are available in the market but either they are complex to use or with ads. In addition, some editors provide some advance features with some price. Therefore, there was a need of ads free video editor, which provides some advance features along with basic functions of the video editors.

2.2.1 Existing Video Editing Tools

There are many existing video editing tools for android smartphones that help in editing on basis of online and offline but one thing that make these tools incomplete and present them to be modified is that they provide ads support. Some of these also required high-class hardware support which leads us to have to spend charges in order to use specific editing tools. There is no any existing tool that provides compatibility on all platforms and remains as reliable as on other running device, there is no any perfect smartphone (android) video editing tool that provide perfect editing on one specific tool. Some feature that are good in one software are not that good using other platform.

2.2.1.1 AndroVid

Android is more of a toolbox than a formal video editor -- but it is simple to use and does several things well. Android has options for rotating videos and converting them to a different size, format or quality.

It also presents an option for converting a video into an MP3 as well as one for adding a single music track into a clip.

Capabilities:

- Trim
- Rotate
- Adding text to image

Limitations:

- No advanced editing feature
- Audio options are limited

2.2.1.2 KineMaster Pro

For professionals who need a full-featured video editing solution, KineMaster Pro is a good video editing tool. It is the most robust of the Android-based video editing tools

Capabilities:

- Robust video editing options
- Professional-looking transitions
- Native voice-over recording tool

Limitations:

- Supports a limited range of devices

2.2.1.3 Video Maker Pro Free

Video Maker Pro Free is essentially a continuation of the editing software Google abandoned -- with little new added into the equation other than some scattered ads. It is not the most powerful or advanced video editing utility in the world, but if basic editing is all we need, the tried-and-true interface makes it one of the simplest and most usable products on the platform today.

Capabilities:

- Simple and intuitive user interface
- easy to perform basic editing functions
- separate audio track

Limitations:

- Lacks multiple audio tracks
- limited number of transitions

2.3 SCOPE

This application is purely developed for android phones; the major functions are:

2.3.1 Major Functions

The major functions that a user can perform are:

1. Fast motion video
2. Trim video
3. Slow motion video
4. Fading to the video
5. Reversing the video
6. Extracting audio from video files
7. Extracting image frames from video files
8. Additionally, this tool will make user able to share it on social websites or they can store it back on their phone storage.

2.4 External Interface Requirements

Following are the external interface requirements:

2.4.1 User Interfaces

As described earlier, it is a smart phone application so all the android phones are compatible with this application. Display of this application is same on all phones; size of screen does not matter. It has a friendly user interface, user guide (user documentation) must be sufficient to educate the users on how to use this product without any problems or difficulties. The background will be light in color with dark colored font to enhance the contrast and visibility.

2.4.2 Hardware Interfaces

An android phone having 512MB RAM and 1.3 GHZ processor will be compatible with this application.

Note: these are the minimum requirements for this application

2.4.3 Software Interfaces

Android platform will be used for the development of this application. Android phone users from **Jellybean** (4.1) to **Nougat** (7.0) can easily install and use this application.

2.4.4 Communication Protocols

As the system is internet based, therefore it will require some standard networking protocols for communication. These protocols are usually installed automatically by the operating system running on server.

- HTTP: It is a protocol used by the WWW service to make communication possible.
- TCP/IP: it is a protocol used to communicate data all around the internet.

2.5 Software Product Features

Software product features include the following:

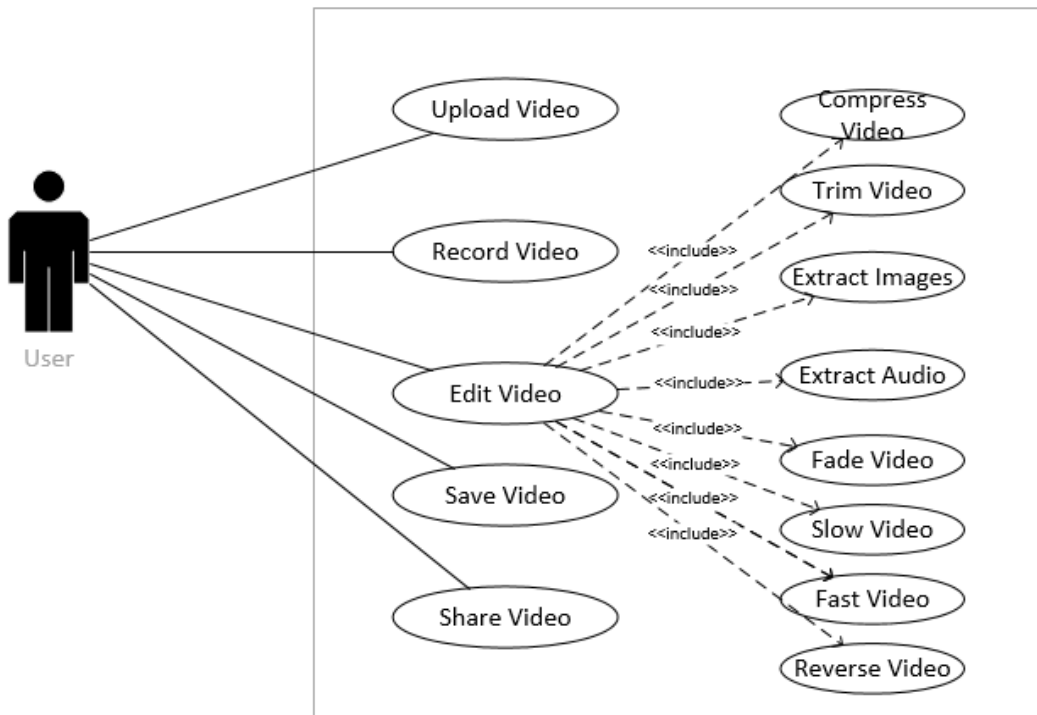
2.5.1 List of Use Cases

1. Upload video
2. Record video
3. Edit video
 - 3.1 Compress video
 - 3.2 Trim video
 - 3.3 Extract images
 - 3.4 Slow video

- 3.5 Fast video
- 3.6 Fade video
- 3.7 Extracting audio
- 3.8 Reversing video
- 4. Save video
- 5. Share video

2.5.2 Use Case Model

This is use case model in figure 3.



Fi

Figure 3 Use Case Diagram

2.6 Use Cases Detail

It is very clear in all the use cases that whenever user wants to perform any function, installation of this application is a pre-condition and user have to open this application.

2.6.1 Upload video

Use Case ID	UC-01
Use Case Description	Select video from internal storage
Primary Actor	User
Stakeholders & Interests	User: wants to select a video already stored in internal memory or in memory card for further processing
Precondition	There should be at least one video in phone's memory
Post Condition	Video has been selected.
Main Scenario	<ol style="list-style-type: none"> 1. User click on the upload video button 2. Phone displays videos already stored in phone internal memory and in memory card. 3. User selects video 4. Selected video is displayed for further processing
Alternate Scenario	3a. As phones displays videos and user does not select any video then system goes back to the main page in order to perform those steps again.

Table No 2.1 UC-01 UPLOAD VIDEO

2.6.2 Record video

Use Case Id	UC-02
Use Case Description	Record video using built in camera of phone
Primary Actor	User
Stakeholders & Interests	User: wants to record video from built in camera of mobile phone and wants to use the video for further processing
Precondition	
Post Condition	Video has been recorded
Main Scenario	<ol style="list-style-type: none"> 1. User click on the Record video button 2. Built in android phone camera is opened for the user 3. User records video of any object by focusing it 4. Two options appear for user 'Retry' and 'Ok' in case of selecting ok video is proceeding for processing directly. 5. Multiple tools appear for user for editing purpose.
Alternate Scenario	<p>3a. if user does not record any video and presses the back button then the user will be taken back to home page.</p> <p>4a. if user selects Retry then user is taken back to the main menu page.</p>

Table No 2.2 UC-02 RECORD VIDEO

2.6.3 Edit video

This use case is performed by user to perform processing on the video. This use case has further multiple sub use cases that can be done by user to edit selected or recorded video. Following is the list of sub use cases of main edit video use case.

1. Compress video
2. Trim video
3. Extract images
4. Fade video
5. Slow video
6. Fast video
7. Extract audio
8. Reverse video

Use Case Id	UC-03
Use Case Description	Perform processing in order to edit a video.
Primary Actor	User
Stakeholders & Interests	User: wants to edit videos from internal storage or editing performed on recorded video
Precondition	Video must be selected or recorded
Post Condition	Select/Taken video edited successfully.
Main Scenario	<ol style="list-style-type: none"> 1. Video is selected/taken by the user for editing purpose. 2. Edit option is selected for that video. 3. Multiple editing option appears for user. 4. Video is proceeding for processing
Alternate Scenario	2a. in case when video is selected and edit button is pressed then it can be shared directly without performing any such editing on it.

Table No 2.3 UC-03 EDIT VIDEO

2.6.4 Save Video

Use Case Id	UC-04
Use Case Description	Video will be saved after editing
Primary Actor	User
Stakeholders & Interests	User: wants to save the video
Precondition	User must have enough memory in order to save it in phone
Post Condition	Video is stored in phone successfully
Main Scenario	<ol style="list-style-type: none"> 1. In order to save a video, the top right, drop down menu is selected 2. User selects save option 3. Video is saved successfully
Alternate Scenario	2a. if there is no enough memory for user then video will not be saved successfully.

Table No 2.4 UC-04 SAVE VIDEO

2.6.5 Share Video

This use case is performed by user to share video on social media or privately with friends in order to know their response on editing.

Use Case Id	UC-05
Use Case Description	Share Video
Primary Actor	User
Stakeholders & Interests	User: wants to share video
Precondition	User must have account on that app on which he wants to share the video.
Post Condition	Video is shared successfully.
Main Scenario	<ol style="list-style-type: none"> 1. User selects share option 2. User selects app on which he/she wants share the video 3. User is entering his account info (User Name and password) 4. Video is shared successfully
Alternate Scenario	2a. if user wants to share it as text MMS message he/she does not need to enter account info.

Table No 2.5 UC-05 SHARE VIDEO

2.7 Software System Attributes

Within system engineering, software attributes are realized non-functional requirements used to evaluate the performance of a system

2.7.1 Availability

After installation, users of this application can use it round the clock. No such constraints can affect the availability service of this application. User must be connected to internet for sharing their edited videos to the social media platforms

2.7.2 Security

As described earlier, this application will edit all kind of videos without having any ads. Now a days there are many ads containing spam links and having security threats. Therefore, this application can secure user.

2.7.3 Maintainability

During the development period, all the code will be properly documented so that we can easily make changes and upgrade our application.

2.8 Database Requirements

Application saves videos in memory storage of cell phone

CHAPTER 3

3. Software Design Description

3.1 Introduction

A software design description is a written description of a software product, that a software designer writes in order to give a software development team overall guidance to the architecture of the software project.

3.2 System Architecture Design

A system architecture is a conceptual model that defines the structure, behavior, and more views of a system. An architecture description is a formal description and representation of a system, organized in a way that supports reasoning about the structures and behaviors of the system.

3.2.1 Chosen System Architecture

Three-tier architecture is a client-server software architecture pattern in which the user interface (presentation), functional process logic ("business rules"), computer data storage and data access are developed and maintained as independent modules, most often on separate platforms.

3.2.2 Architecture Diagram

The architecture diagram of the system is as follows in figure 4:

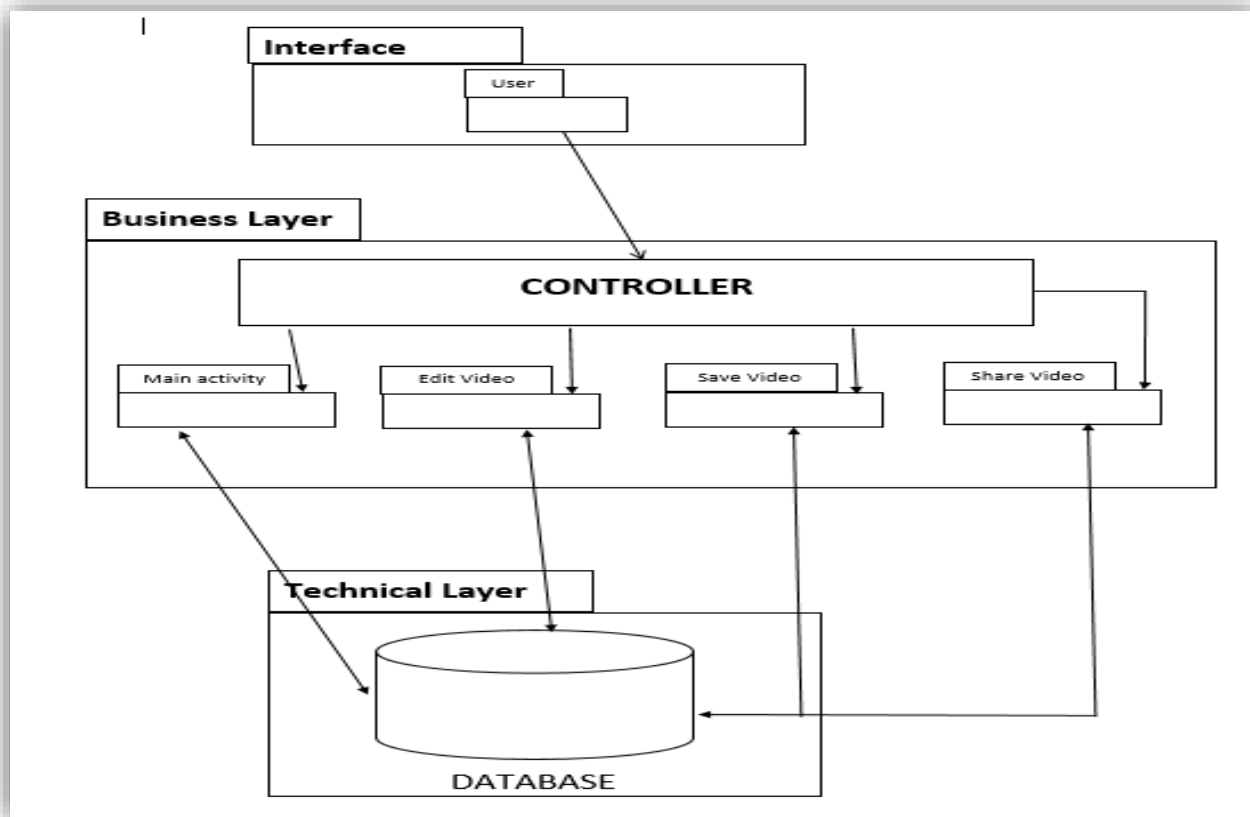


Figure 4 Architecture Diagram

3.3 Domain Model

The domain model of the system is as follows in figure 5:

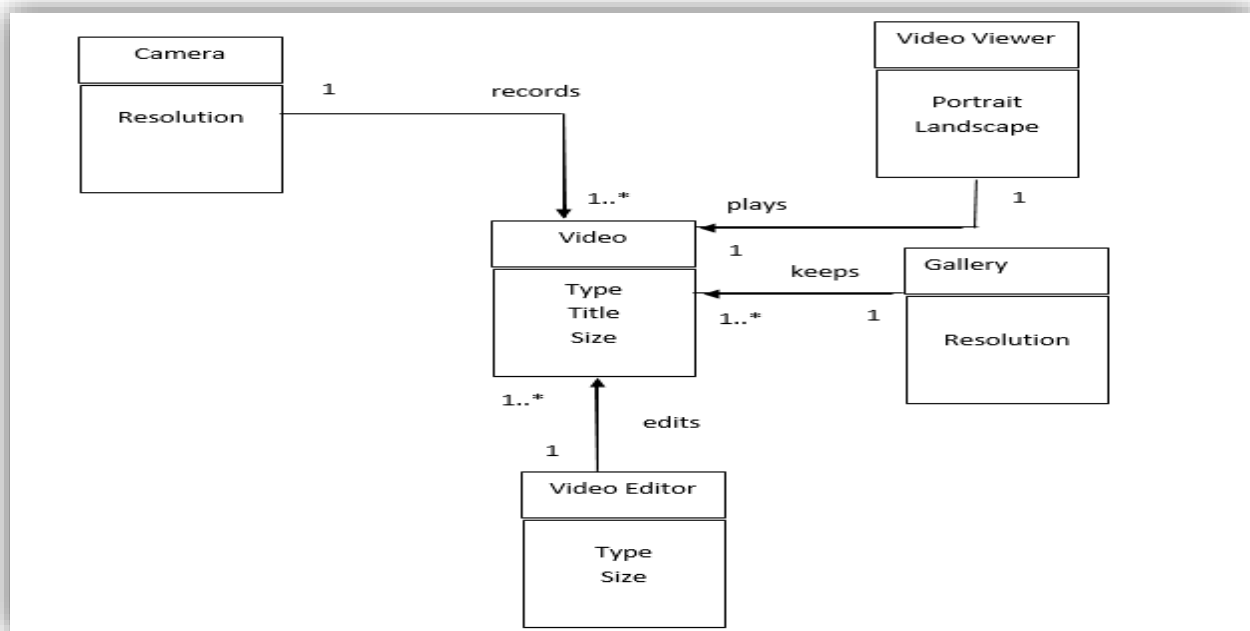


Figure 5 Domain Model

3.4 Sequence Diagrams

Following are the sequence diagrams of the system:

3.4.1 SSD: Upload video

Sequence diagram for “upload video”:

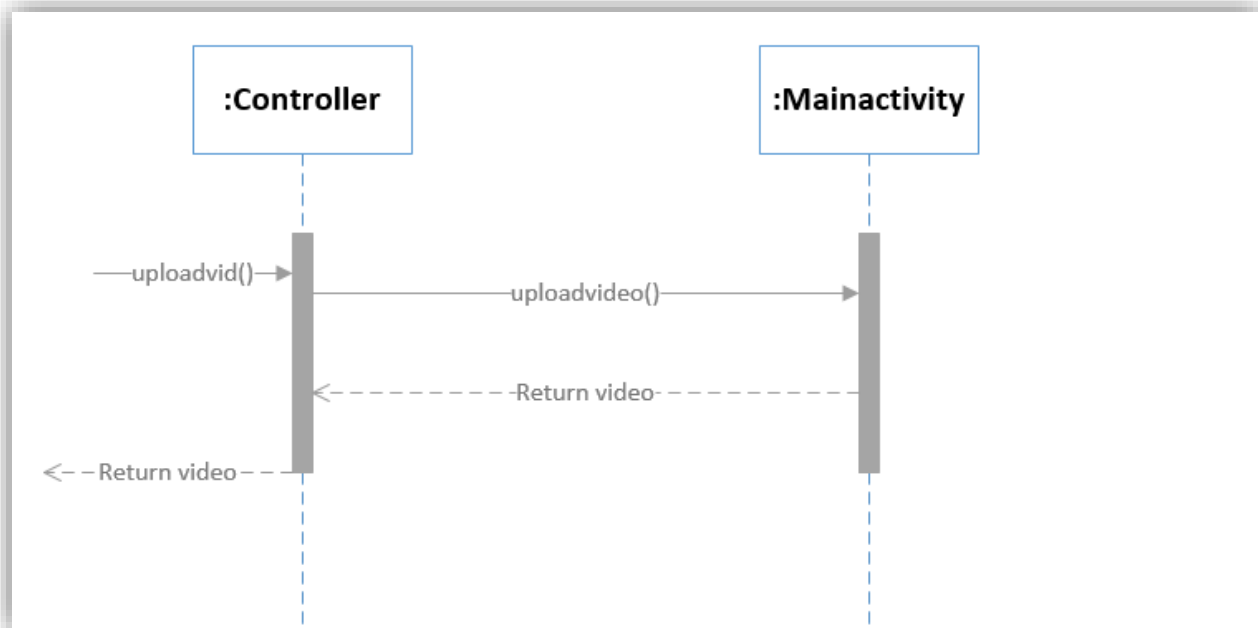


Figure 6 SSD Upload Video

3.4.2 SSD: Record video

Sequence diagram for “record video”:



Figure 7 SSD Record Video

3.4.3 SSD: Edit video

Sequence diagram for “edit video”:

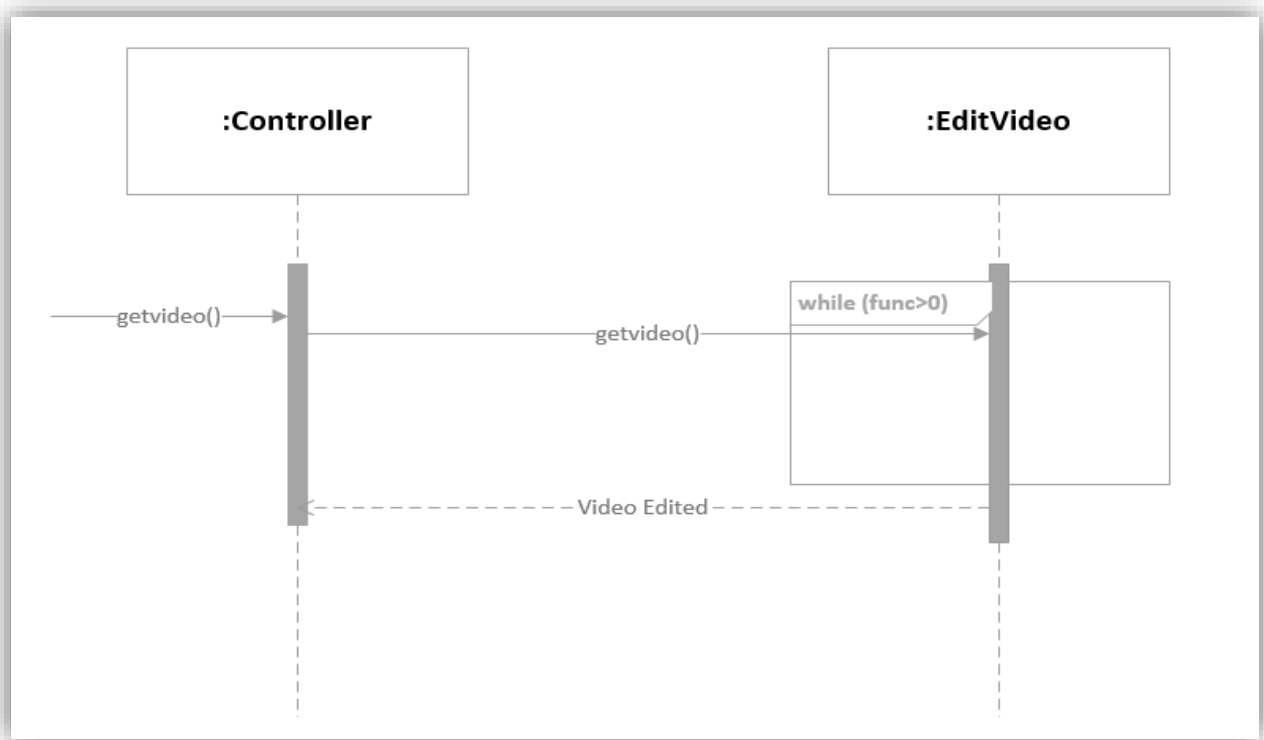


Figure 8 SSD Edit Video

3.4.4 Save video

Sequence diagram for “save video”:

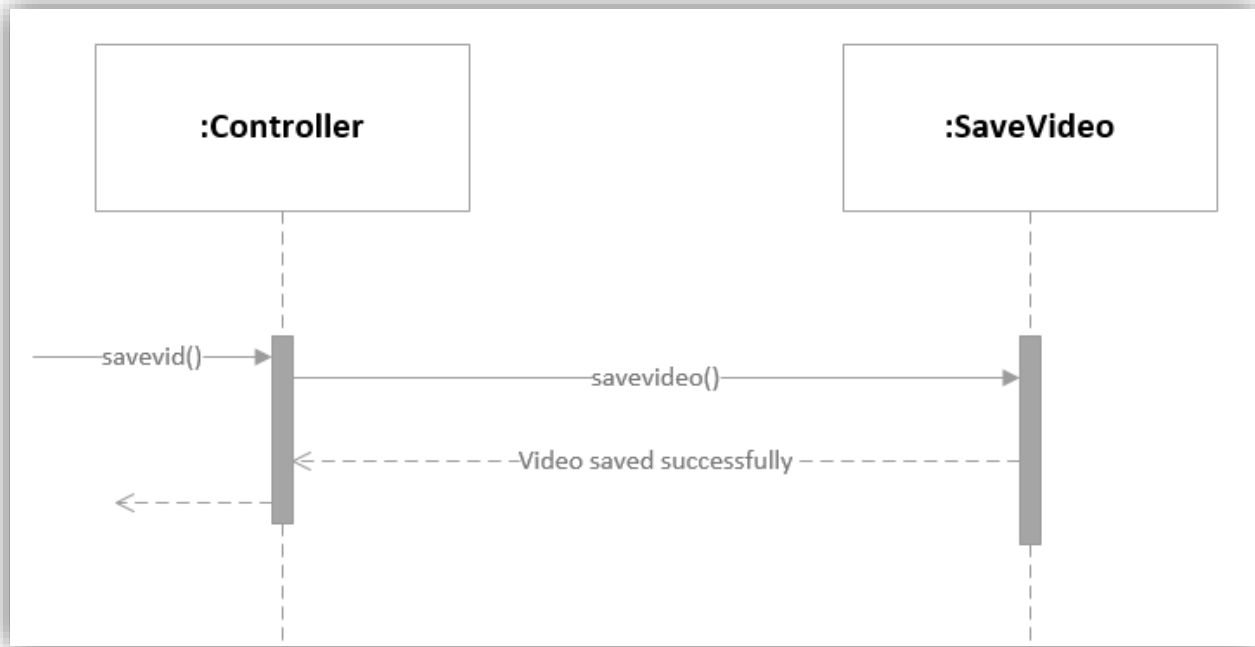


Figure 9 SSD Save Video

3.4.5 Share video

Sequence diagram for “share video”:

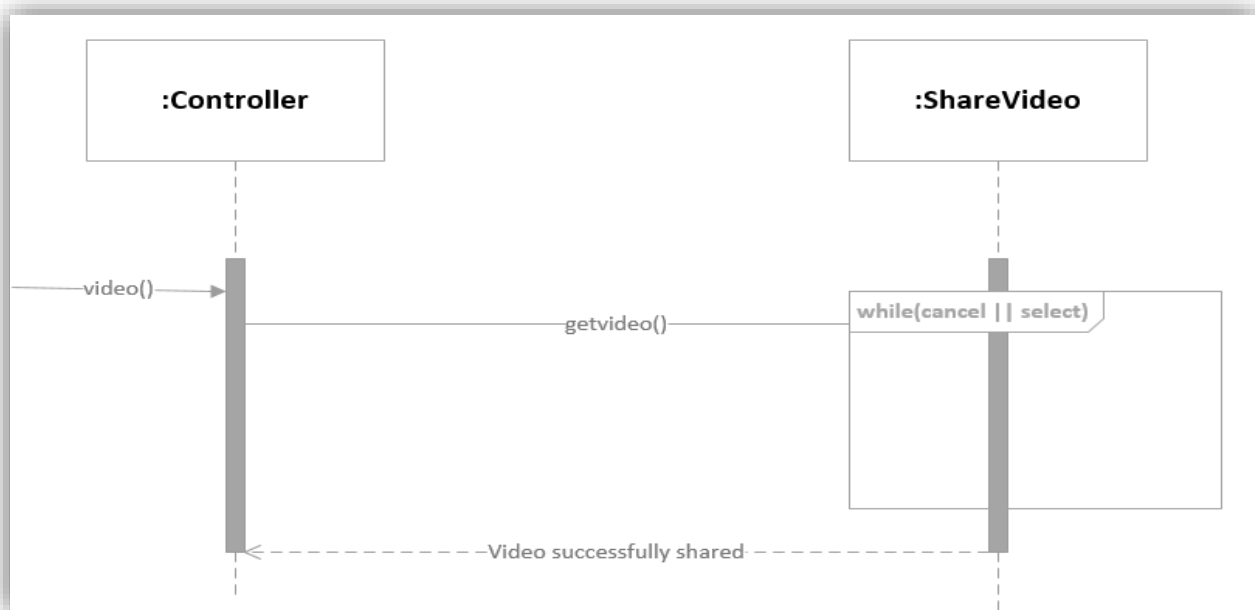


Figure 10 SSD Share Video

3.5 Design Class Diagram

The design class diagram for “Smart Phone Video Editor” is as follows in figure 11 Design Class Diagram:

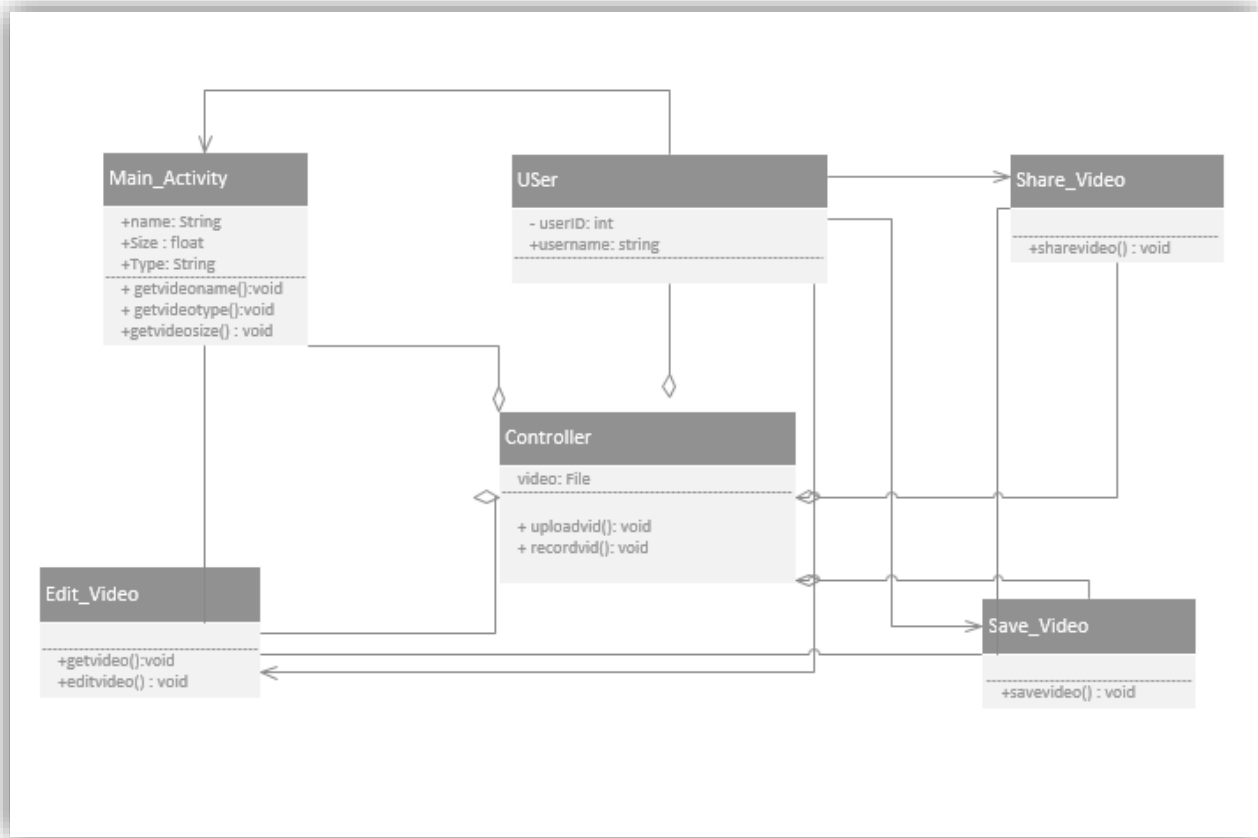


Figure 11 Design Class Diagram

3.6 User Interface Design

User interface (UI) design is the design of user interfaces for software or machines, such as the look of a mobile app, with a focus on ease of use and learnability for the user. [1]

3.6.1 Description of the User Interface

As described earlier it is a mobile application so will show responsiveness on every android phone having variable screen sizes.

3.6.2 INTERFACE FOR APPLICATION:

Following are the interfaces for Smart Phone Video editor application:

3.6.2.1 MAIN SCREEN

Interface for “MAIN SCREEN” in figure 12 interface for the main screen:

When we open the application this main screen will appear before the user giving the options to upload and record



Figure 12 Interface for Main Screen

3.6.2.2 RECORD VIDEO

Interface for “RECORD VIDEO” in figure 13 interface for record video:

When user selects record video, then recording will begin and user can pause, stop or discard video without proceeding video for further actions.

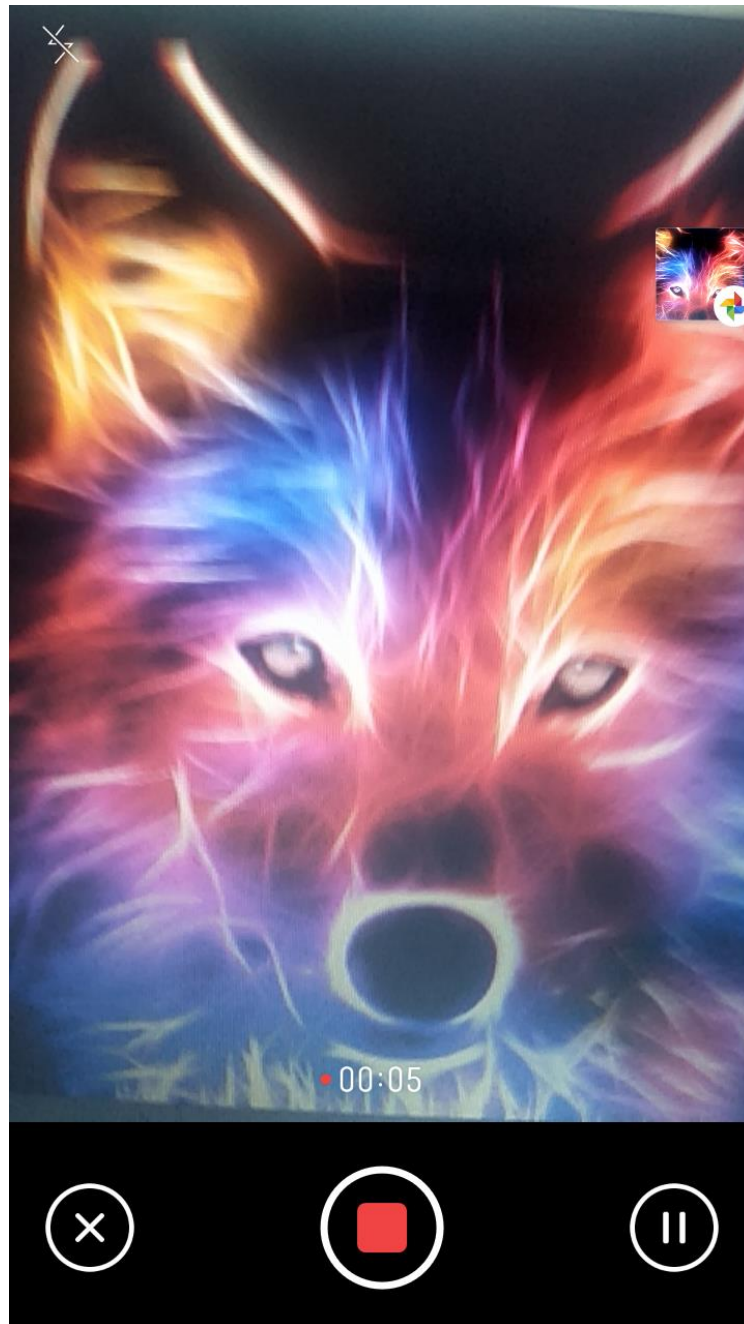


Figure 13 Interface for Record Video

3.6.2.3 UPLOAD VIDEO

Interface for “UPLOAD VIDEO” in figure 14 interface for upload video:

When user selects upload option from main screen, then user can browse video from storage and can select video of his own choice.

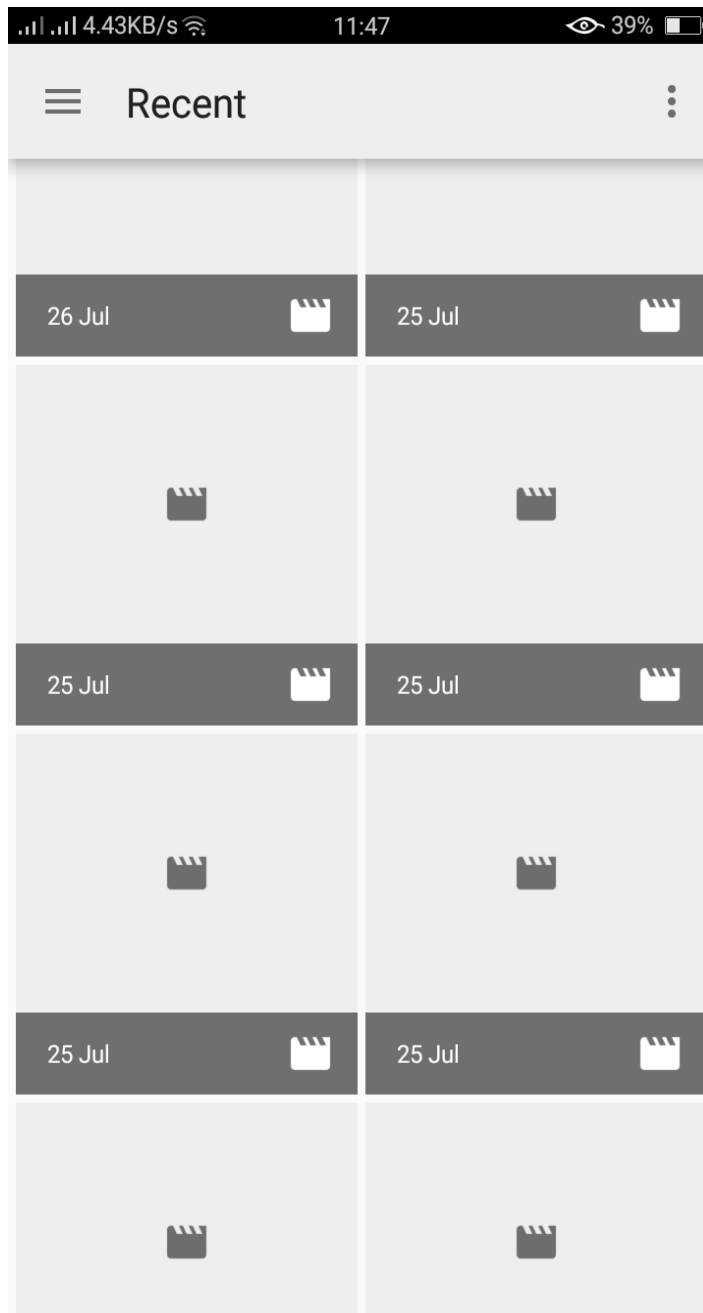


Figure 14 Interface for upload video

3.6.2.4 EDIT VIDEO

Interfaces for “edit video” in figure 15:

When user proceed video after uploading/recording video, then he is given with many video editing features and can perform editing on video

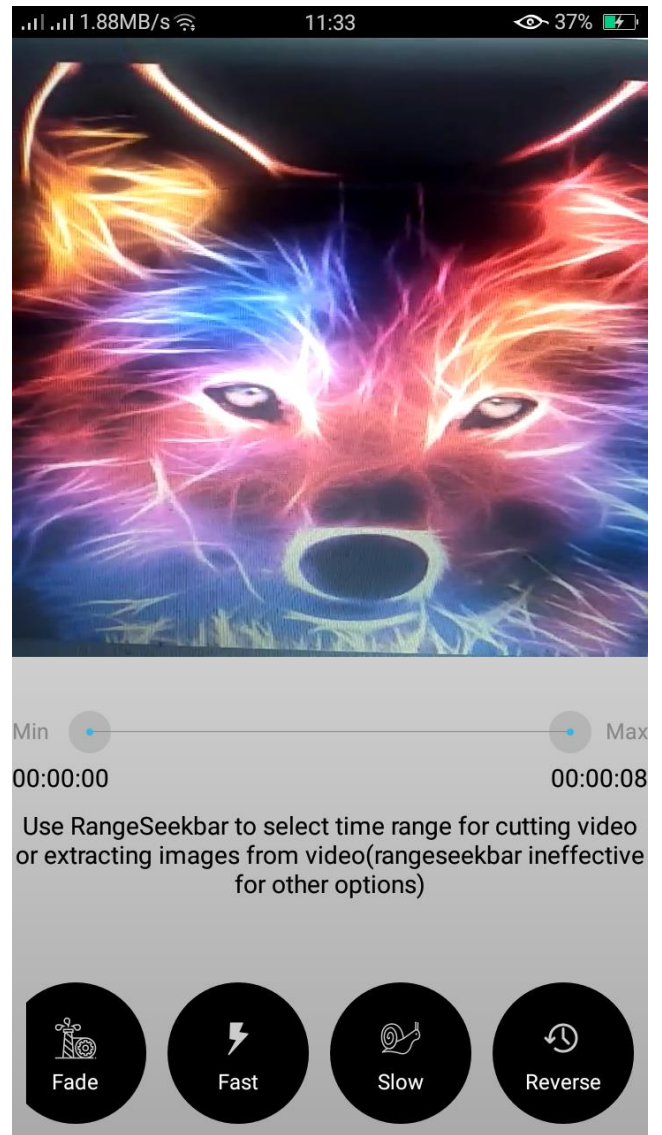
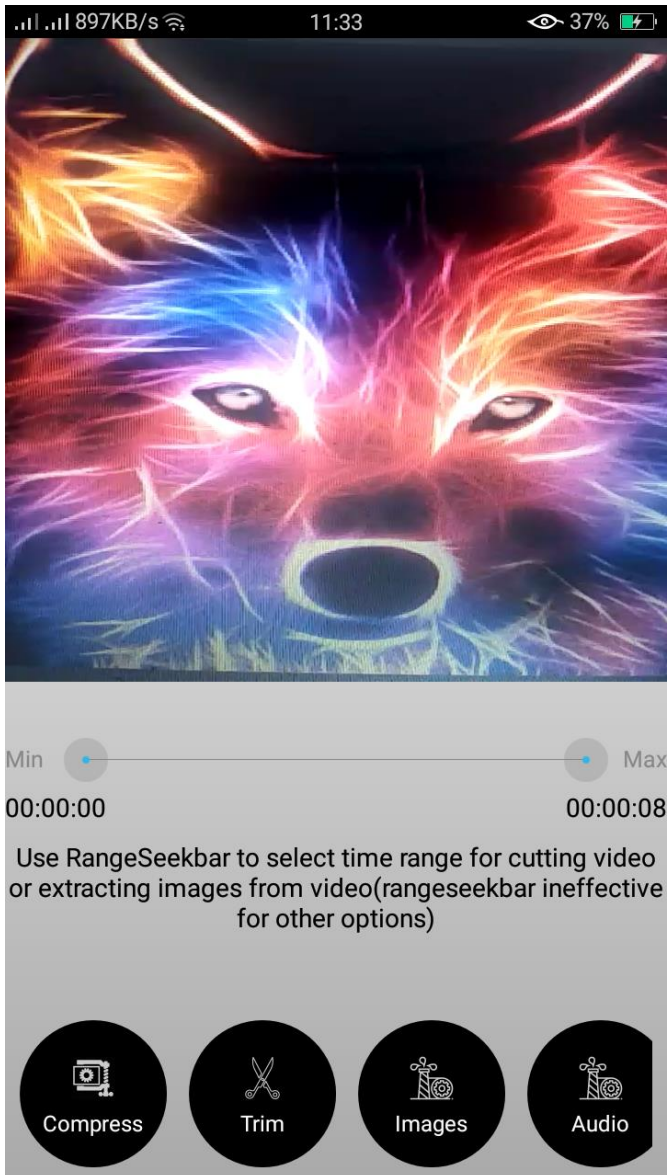


Figure 15 Interfaces for edit video

3.6.2.5 SAVE VIDEO

Interfaces for “SAVE VIDEO”:

After performing editing on the video, user can give name to the edited video of his choice.

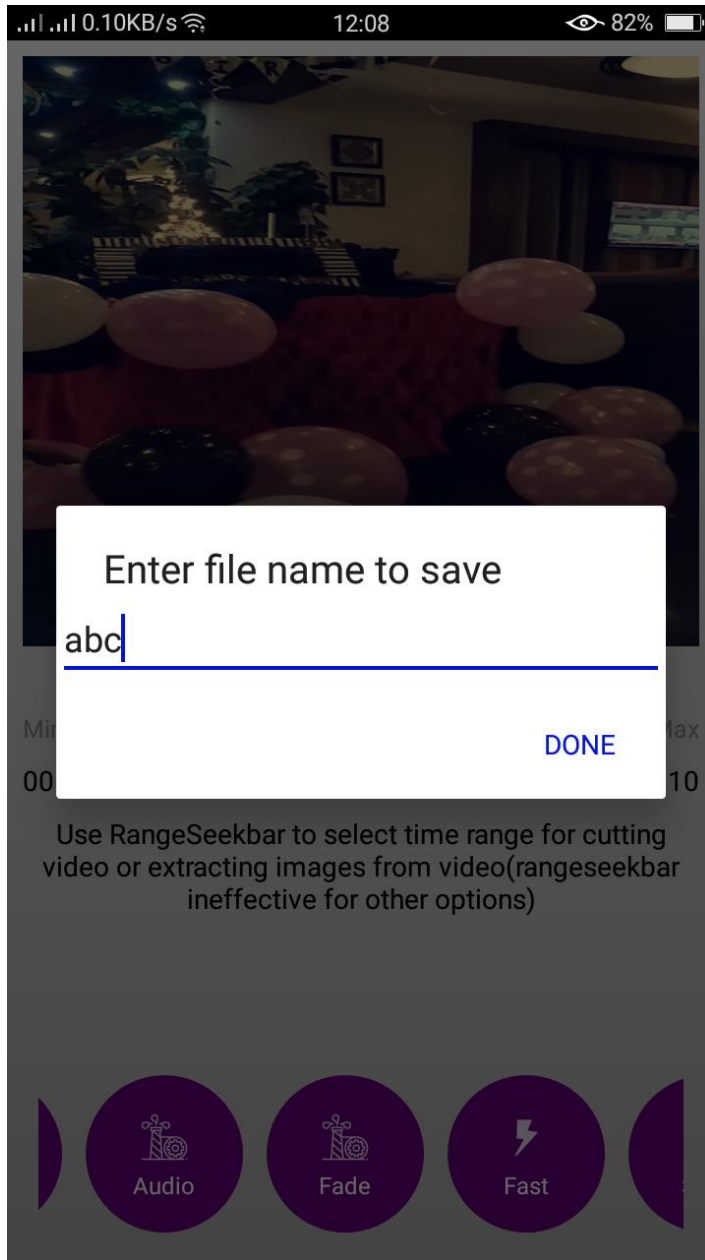


Figure 16 Interface for Save Video

3.6.2.6 SHARE VIDEO

Interfaces for “SHARE VIDEO” in figure 17:

After saving video, user can share video on multiple social media platforms like facebook, twitter, whatsapp and many other.

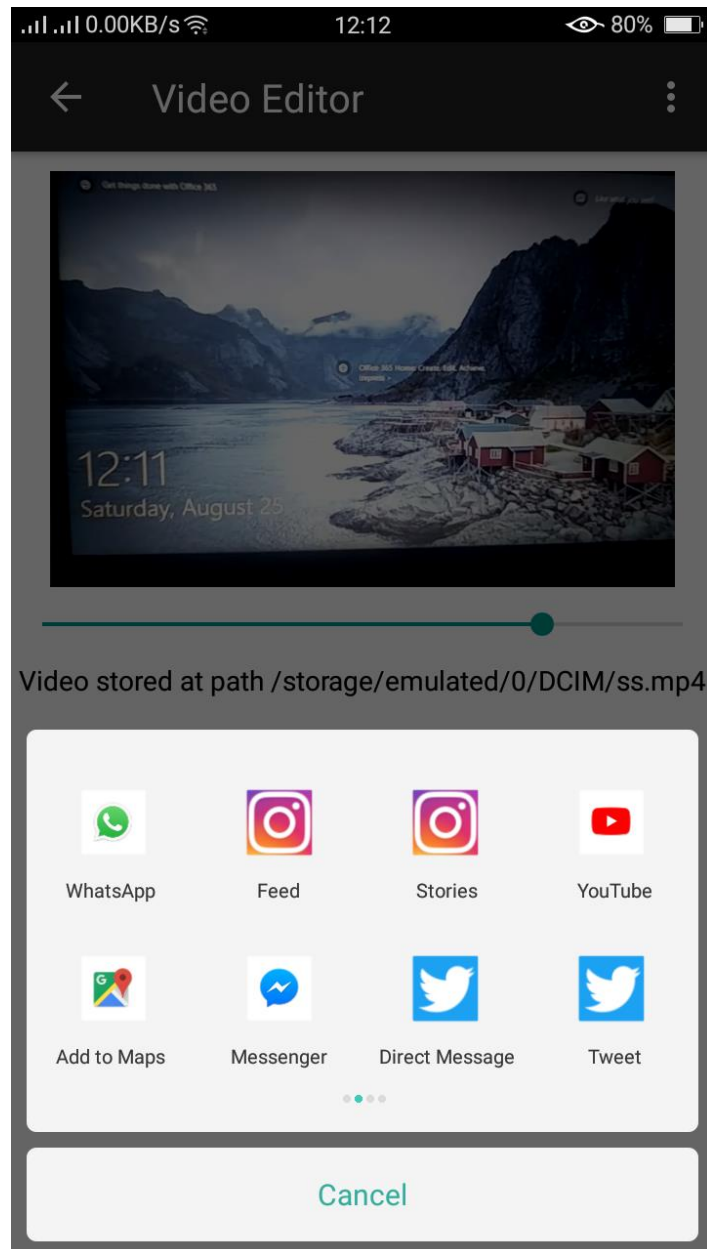


Figure 17 Interface for Share Video

CHAPTER 4

4 Software Test Documentation

4.1 Introduction

A test case, in software engineering, is a set of conditions under which a tester will determine whether an application, software system or one of its features is working as it was originally established for it to do.

4.1.1 Test Strategy

A Test Strategy document is a high- level document and normally developed by a project manager. This document defines “Software Testing Approach” to achieve testing objectives. Some companies include the “Test Approach” or “Strategy” inside the Test Plan, which is fine and it is usually the case for small projects. [2]

4.2 Test Plan

A test plan is a document detailing the objectives, target market, internal beta team, and processes for a specific beta test for a software or hardware product. The plan typically contains a detailed understanding of the eventual workflow. [3]

4.2.1 FEATURES TO BE TESTED

The following are the features to be tested:

1. Upload video
2. Record video
3. Edit video
 - 3.1. Compress video
 - 3.2. Trim video
 - 3.3. Extract images
 - 3.4. Fade video
 - 3.5. Extract audio
 - 3.6. Reverse video
4. Save image
5. Share image

4.2.2 FEATURES NOT TO BE TESTED

Features not to be tested are from the developer’s point of view. For example

- How much memory does the editor consume?
- Software risk factor
- Maintainability of the application.

4.2.3 Testing Tools & Environment

A testing environment is a setup of software and hardware for the testing teams to execute test cases. In other words, it supports test execution with hardware, software and network configured. Test bed or test environment is configured as per the need of the Application under Test.

Here black box testing environment is used. Black box testing is a method of software testing that examines the functionality of an application without peering into its internal structures or workings. This method of test can be applied virtually to every level of software testing: unit, integration, system and acceptance.

4.3 Test Cases

Test cases for the application are:

4.3.1 TC-01 UPLOAD VIDEO

Following describes test case of “Upload Video”: -

ID	TC 01
Description	User uploads video
Tester	User
Setup	User has opened application.
Instructions:	<ol style="list-style-type: none"> 1. User click on the upload video button 2. Phone displays videos already stored in phone internal memory and in memory card. 3. User selects video 4. Selected video is displayed for further processing
Expected Results	The video is uploaded.

Table No 4.3.1 TC-01 UPLOAD VIDEO

4.3.2 TC-02 UPLOAD VIDEO (ALTERNATIVE SCENARIO)

Following describes alternative scenario of “Upload Video”: -

ID	TC 02
Description	User cannot upload video
Tester	User
Setup	User has opened application.
Instructions:	<ol style="list-style-type: none">1. User click on the upload video button2. Phone displays videos already stored in phone internal memory and in memory card.3. User selects video
Expected Results	<ol style="list-style-type: none">1. Video is not uploaded2. User does not select video from gallery

Table No 4.3.2 TC-02 UPLOAD VIDEO (ALTERNATIVE SCENARIO)

4.3.3 TC- 03 RECORD VIDEO

Following describes test case of “Record Video”: -

ID	TC 03
Description	User records video
Tester	User
Setup	User has opened application.
Instructions:	<ol style="list-style-type: none">1. User click on the Record video button2. Built in android phone camera is opened for the user3. User records video of any object by focusing it4. Two options appear for user ‘Retry’ and ‘Ok’ in case of selecting ok video is proceeding for processing directly.5. Multiple tools appear for user for editing purpose.
Expected Results	The video is recorded.

Table No 4.3.3 TC-03 RECORD VIDEO

4.3.4 TC-04 RECORD VIDEO (ALTERNATIVE SCENARIO)

Following describes test case of “Record Video”: -

ID	TC 04
Description	User does not record video
Tester	User
Setup	User has opened application.
Instructions:	<ol style="list-style-type: none"> 1. User click on the Record video button 2. Built in android phone camera is opened for the user 3. User records video of any object by focusing it 4. Two options appear for user ‘Retry’ and ‘Ok’ in case of selecting ok video is proceeding for processing directly.
Expected Results	<ol style="list-style-type: none"> 1. Video is not recorded 2. User does not press the record button

Table No 4.3.4 TC-04 RECORD VIDEO (ALTERNATE SCENARIO)

4.3.5 TC-05 EDIT VIDEO

Following describes alternative scenario of “Edit Video”: -

ID	TC 05
Description	User edits video
Tester	User
Setup	User has opened application.
Instructions:	<ol style="list-style-type: none"> 1. Video is selected/taken by the user for editing purpose. 2. Edit option is selected for that video. 3. Multiple editing option appears for user. 4. Video is proceeding for processing.
Expected Results	The video is edited.

Table No 4.3.5 TC-05 EDIT VIDEO

4.3.6 TC-06 EDIT VIDEO (ALTERNATIVE SCENARIO)

Following describes alternative scenario of “Edit Video”: -

ID	TC 06
Description	User does not edit video
Tester	User
Setup	User has opened application.
Instructions:	<ol style="list-style-type: none"> 1. User click on the Record video button 2. Built in android phone camera is opened for the user 3. User records video of any object by focusing it 4. Two options appear for user 'Retry' and 'Ok' in case of selecting ok video is proceeding for processing directly. 5. Multiple tools appear for user for editing purpose.
Expected Results	1. Video is not edited

Table No 4.3.6 TC-06 EDIT VIDEO (ALTERNATE SCENARIO)

4.3.7 TC-07 SAVE VIDEO

Following describes test case of "Save Video": -

ID	TC 07
Description	User saves video
Tester	User
Setup	User has opened application.
Instructions:	<ol style="list-style-type: none"> 1. In order to save a video, the top right, drop down menu is selected 2. User selects save option 3. Video is saved successfully
Expected Results	The video is saved.

Table No 4.3.7 TC-07 SAVE VIDEO

4.3.8 TC-08 SAVE VIDEO (ALTERNATIVE SCENARIO)

Following describes alternative scenario of “Save Video”:-

ID	TC 08
Description	User does not save video
Tester	User
Setup	User has opened application.
Instructions:	<ol style="list-style-type: none"> 1. In order to save a video, the top right, drop down menu is selected 2. User selects save option 3. Video is saved successfully
Expected Results	<ol style="list-style-type: none"> 1.Video is not sent 2. User does not have enough memory space

Table No 4.3.8 TC-08 SAVE VIDEO (ALTERNATE SCENARIO)

4.3.9 TC-09 SHARE VIDEO

Following describes test case of “Share Video”: -

ID	TC 09
Description	User shares video
Tester	User
Setup	User has opened application.
Instructions:	<ol style="list-style-type: none"> 1. In order to save a video, the top right, drop down menu is selected 2. User selects save option- 3. Video is saved successfully
Expected Results	The video is shared.

Table No 4.3.9 TC-09 SAVE VIDEO

4.3.10 TC-10 SHARE VIDEO (ALTERNATIVE SCENARIO)

Following describes alternative scenario of “Save Video”: -

ID	TC 10
Description	User does not share video
Tester	User
Setup	User has opened application.
Instructions:	<ol style="list-style-type: none"> 1. In order to save a video, the top right, drop down menu is selected 2. User selects save option 3. Video is saved successfully
Expected Results	<ol style="list-style-type: none"> 1.Video is not shared. 2. User does not enter valid account details 3.If user wants to share it as text MMS message he/she does not need to enter account info

Table No 4.3.10 TC-10 SAVE VIDEO (ALTERNATE SCENARIO)

CHAPTER 5

5 Software Implementation Document

5.1 Introduction

This document describes the project implementation for developing the project planner and scheduler.

5.1.1 Language Selection

The project implements in the following languages:

- **XML**
 - Used for interface design
- **JAVA**
 - Used for backend coding

5.1.2 Tools Selection

- Android Studio

5.1.3 Resources

- **Google Gantt Chart**
 - API used to generate Gantt chart
- **Ffmpeg**
 - Library used to handle processing of audio and video
- **Android.support**
 - Used to support different versions of android operating system

CHAPTER 6

6 Conclusions and Future Enhancements

6.1 Introduction

This document describes the project conclusions and future enhancements, i.e. what time of features can be added in future

6.2 Summary

This application allows user to edit different videos with ease as well as it includes some advanced features to facilitate users with many options.

6.3 Conclusions

- Users can edit videos without bearing boring ads
- Users can edit videos with more advance features like reversing and fading
- Users can share videos on any social platform
- Users can use the video editing application on even older operating system versions of android

6.4 Future Enhancements

In future, application can be enhanced by:

- Smartphone video editor is an android based application and in future it can be built for ios operating system
- Some more advance features like zooming, panning, adding multiple audios can be added in future

REFERENCE

References:

- [1] User interface design <https://www.interaction-design.org/literature/topics/ui-design>
- [2] User acceptance test <https://www.techopedia.com/definition/3887/user-acceptance-testing-uat>
- [3] Test plan <http://softwaretestingfundamentals.com/test-plan/>