Project Design Phase

# Problem – Solution Fit Template

Date: 27-05-2025

Project Name: Video Conferencing App

Maximum Marks: 2 Marks

## Problem – Solution Fit Overview:

The Problem–Solution Fit ensures that the Video Conferencing App addresses core issues in online communication, especially for distributed teams, educators, and remote users. It focuses on real-time, peer-to-peer video calls with minimal infrastructure dependency.

## Purpose:

- Enable quick, browser-based video calls without external plugins  
- Support direct peer-to-peer (P2P) communication with WebRTC  
- Provide a user-friendly and secure platform for virtual rooms and real-time meetings  
- Deliver real-time audio, video, screen sharing, and chat features in a single web app

## Problem Statement:

Many individuals and teams face challenges like:  
- Difficulty setting up secure, fast video calls without third-party tools  
- Lack of lightweight and open-source video meeting platforms  
- Fragmented communication tools for audio, video, and chat  
- Dependence on paid commercial services for basic conferencing needs

## Solution:

The proposed solution is a full-stack, browser-based video conferencing app using WebRTC. It offers:  
- Secure room creation and joining functionality  
- Peer-to-peer video and audio streaming using WebRTC and PeerJS  
- Real-time messaging using Socket.IO  
- Screen sharing and session recording capabilities  
- Simple interface with no installation required  
- Lightweight backend for signaling with Express.js and Node.js