

StudyBuddy !

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Approach

Students often times lack communication with those outside of their friend circle. When it comes to classes and absences, some people would rather be without the day's information than to find someone willing to share their notes.

This application aims to aide in that process by eliminating the face to face interaction, while making it easier to find those who were in class and are willing to share notes.

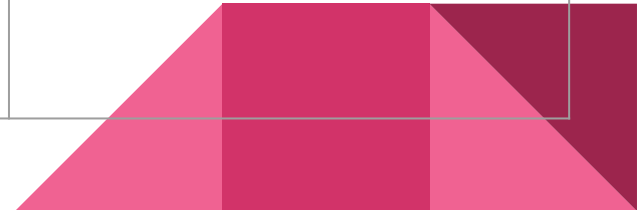


Requirement Specifications

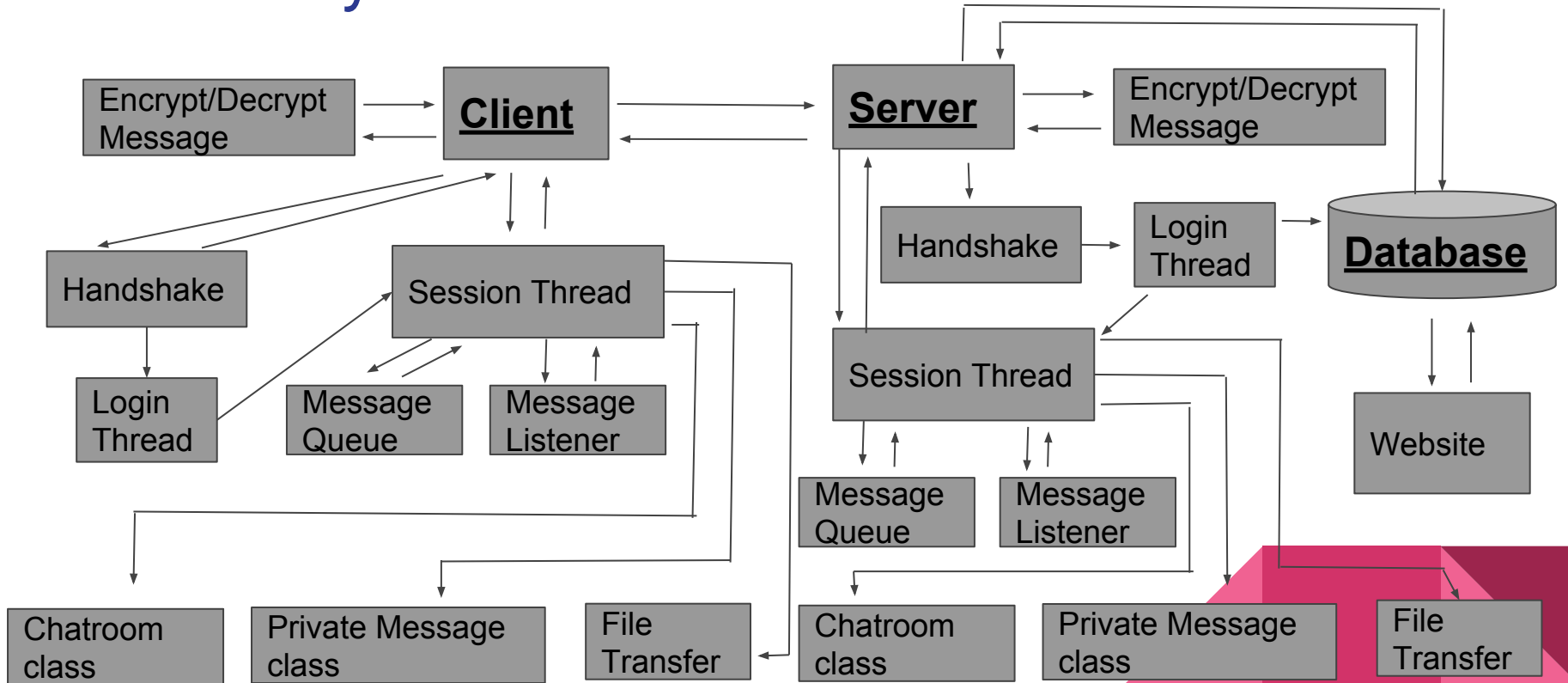
<u>Physical Requirements</u>	<u>Design Requirements</u>	<u>Design Requirements</u>
<ul style="list-style-type: none">• Server - a hub used to communicate with multiple clients.• Database - for storing user information as well as login credentials.• Client - Android device running Android OS 4.4 Kit Kat or higher.	<ul style="list-style-type: none">• GUI- graphical user interface for interacting with the server and other users.• Handshake Protocol - used to identify the client software to the server.• Login - used to correctly identify a specific user to the server.• Message Listener/Queue - a thread running in the background which listens for incoming and outgoing messages from the server.	<ul style="list-style-type: none">• Chatroom Object - a class which provides a means of communicating with others both privately and publicly.• Timing Mechanism - used to reset chat rooms at various intervals.• Distribution Page - website to display information about the product and allow users to download the software.• File Transfer - a protocol used for sending and receiving files to and from other users.• Encryption Algorithm - used to encrypt and decrypt server and client messages.

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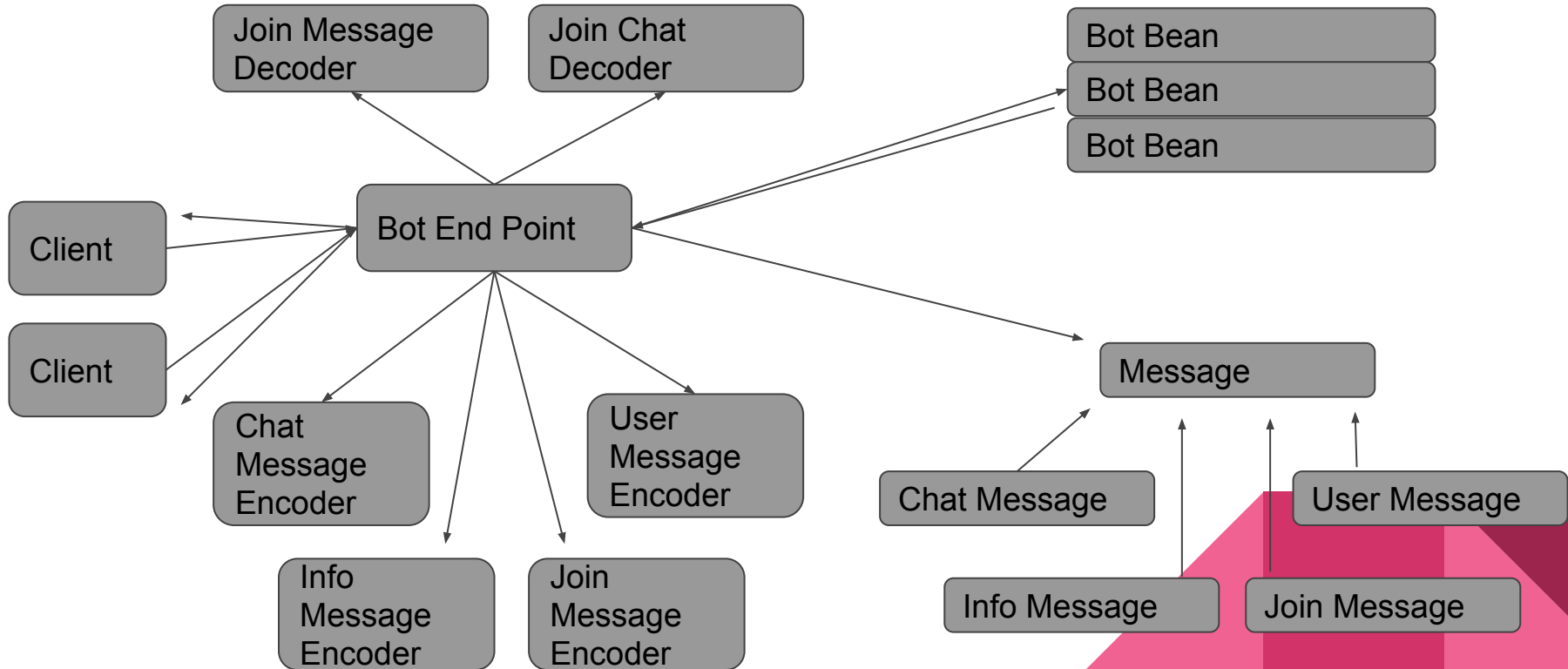
<u>Functional Requirements</u>	<u>Performance Requirements</u>	<u>Security Requirements</u>
<ul style="list-style-type: none">• Allow for the creation of user accounts.• Be able to assign users to the correct classroom groups.• Provide user with easy to use interface for communication.• Allow users to communicate with one another both publicly and privately.• Allow users to upload photos of notes taken during class or scratch work which aids in the explanation of concepts.• Allow professors to mark students absent or present.	<ul style="list-style-type: none">• The server should have sufficient enough hardware to support a load no greater than the total number of students in the school.• Network should be fast enough to support this same load.• Latest, up-to-date dependencies should be installed at both server and client level.	<ul style="list-style-type: none">• Make sure the person someone is chatting with is actually the person they think they are chatting with.• Ensure the messages are not being tampered with during transmission.• Ensure conversations are not being eavesdropped upon.



Java SE System Model



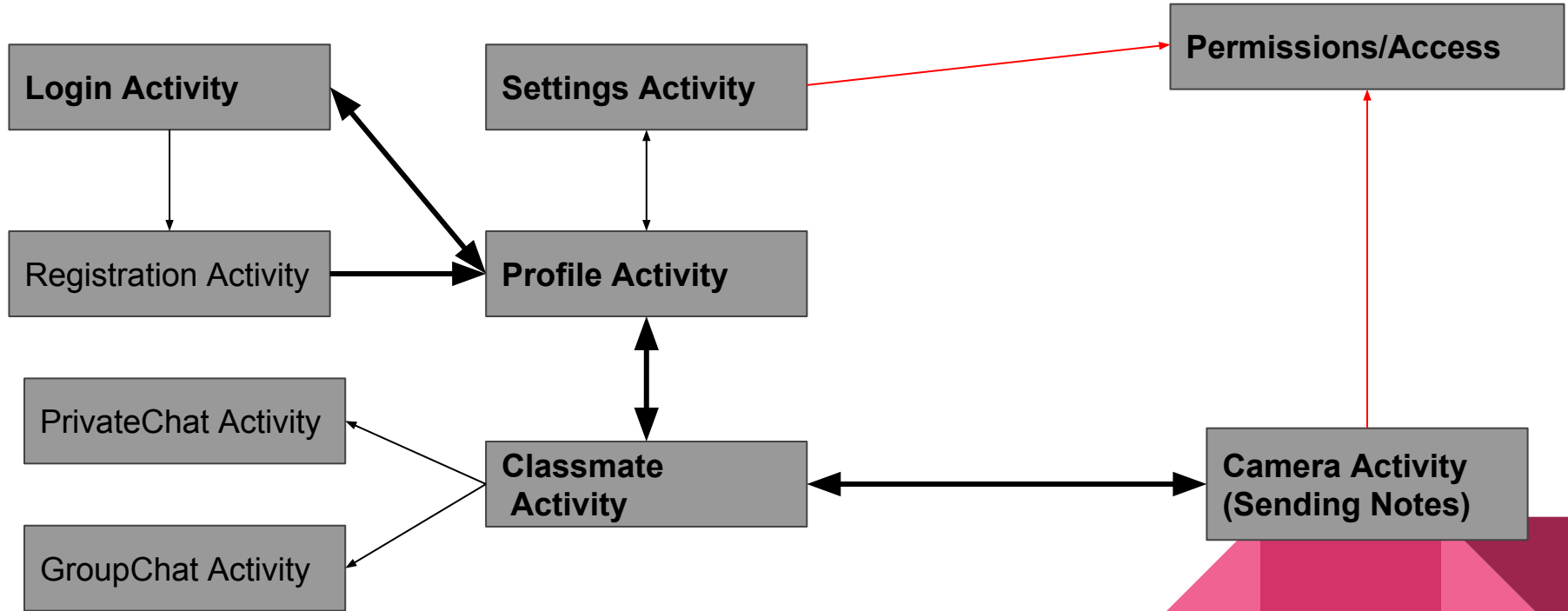
Alternative Java EE System Model



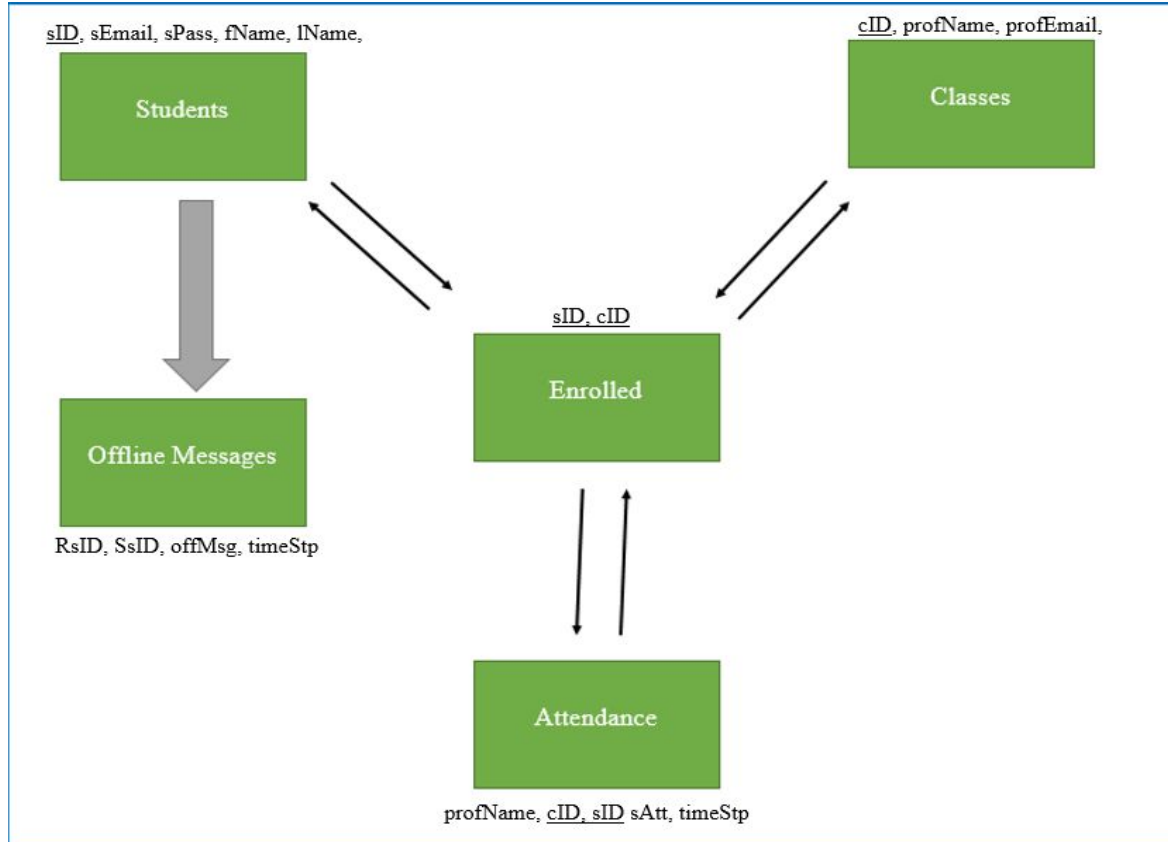
Alternative models Pros/Cons

Java SE	Java EE
<p>Pros</p> <ul style="list-style-type: none">• Familiarity• Low overhead• Used in mobile apps• Doesn't require additional dependencies	<p>Pros</p> <ul style="list-style-type: none">• A lot of classes already written• Built in chat, security, and server API• JSON integrations
<p>Cons</p> <ul style="list-style-type: none">• Lack of security• Requires our own implementations of things that are needed (chat, databases, etc)	<p>Cons</p> <ul style="list-style-type: none">• Built for larger runtime environment for developing• Built in methods require revamping/learning

Application/Client Flow



Database Model



TimeLine

February	Planning	Determine Requirements	
		Design Models & Project Flow	Tentative
		Implement Website Communication	
March	Coding and Testing	Begin Coding	Adjust Models/Processes
		Server, Client, Database Functional	Establish Communication
		Manual Testing and Debug	
April	Implementation and Distribution	Finalize Documentations	User Manuals, Distribution Site
		Prepare Final Reports	
		Final Presentation	

Feasibility

Some features were more feasible than others due to time constraints and the scale of the project

Feasible	NOT Feasible
<ul style="list-style-type: none">• Public Chat• Private Chat• Image Transfer	<ul style="list-style-type: none">• GPS Location• Reward System



Member Roles

Jaee - Database Systems

Server Side Implementation

Tony - Client/Server Communication

Server Side Implementation

Client Side Implementation

Trayvon - GUIs

Client Side Implementation

