BOOK REVIEW APPLICATION

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Summer-2019

Team VAD

JULY 20, 2019

GSU

ATLANTA

Basic layout for reaching this week's goals:

Assignee Name	Email	Task	Note
Vijay kalavakolanu	Vkalavakolanu1@student.gsu.edu	• Planning and scheduling. • Revising and Refining the system • Design Measures and Patterns • System modeling • Implementation. • Report	Participated 100%
Dong Jun Kim	Dkim114@student.gsu.edu	• Revising and Refining system. • Implementation. • Coding • Testing. • Report. • Video editing	Participated 100%

Planning and Scheduling:

Team VAD					
Assignee Name	Task	Duration (Hours)	Dependency	Due date	Note
Vijay	Task 1 **Planning and Scheduling**	½ hour	none	07/21/2019	Get Dong's availability and set up meetings to work on the project.

Vijay and Dong Jun	Task 3 **Revise and Refine your System**	2 hours	Previous team coordinator must let the rest of the team know the review given by the professor.	07/21/2019	Make sure to fix what needs to be fixed and add any new ideas/improvements to the project.
Vijay	Task 4 **Design Measures and Patterns**	1 hour	Class diagram must be accurate.	07/21/2019	Use what we learned in class to connect the classes together and determine the cohesion.
Dong Jun	Task 5 **Implementation**	6 hours	A database management system must be selected. We used MySQL	07/21/2019	Install the software needed in order to complete this step and share with team member so the whole team stays up to date.
Dong Jun	Task 6 **Testing**	1 hours	Implementation must be completed.	07/21/2019	none
Dong Jun	Task 7 **Report & Coding**	40 hours	All the above tasks must be completed.	07/21/2019	Acquire all the necessary information from teammate.
Dong Jun and Vijay	Task 8 **Video**	2 hours	Vijay and dong must meet up in order to film the video	07/21/2019	Dong Jun edited the video.

Work norms:

Work norms are fundamental in ensuring the overall success of any project involving multiple team members. More specifically, working as one in the spirit of teamwork is essential and necessitates that each member is equally an active participant in assigning individual team member tasks in conjunction with the weekly assignment coordinator. Likewise, promoting respectful dialog among team members is vital to the team's success. In the event of a dispute, each team member supports the weekly team coordinator decisions to resolve conflicts, utilizing individual judgment, based on factors which ensure overall success for the project.

To guarantee team success, the weekly team coordinator will carefully set and manage each team member's weekly tasks by facilitating team meetings, providing task milestones and deadlines, and balancing workloads as needed. Furthermore, each week the project team members will actively participate in determining intermediate steps required to complete the weekly assignments.

Additionally, team members are expected to communicate and meet project deadlines established by the weekly team leader. In the event a team member foresees a potential to miss a deadline, the team member will notify the weekly team coordinator privately for assistance to resolve any obstacles preventing task delivery. Similarly, the weekly team leader will report any team member that habitually misses deadlines to the instructor and make a recommendation, along with the team, to assign a grade of zero for the week assignment and request remove of the member from the team

Moreover, each team member's work will be reviewed and evaluated for adherence to the weekly assignment requirements set by the instructor. The weekly team coordinator and team members will provide positive feedback to aid in proficiency development and foster successful task completion for the overall health of the project. Also, it is very common when working in groups for team members to have varying degrees of work habits ranging from the "do it right away" type to the last-minute procrastinator type. To reduce conflicts, team members should communicate assignment preferences and preferred deadlines to the weekly team coordinator and the entire team. Lastly, the team and the weekly coordinator will make every effort when possible to accommodate preferences providing the preference does not cause a conflict in meeting the project goal.

Facilitator Norms:

To establish and maintain order and promote positive teamwork, a team coordinator will be selected each week by the members of the team. Similarly, the rotation of the weekly team coordinator plays an important role in the development of each team member's project management leadership proficiency. A few of the team coordinator duties include, facilitating team meetings, project task assignment and management, coaching and development, dispute resolution, and project assignment preparation and submission. Additionally, the team coordinator will serve as the primary liaison between the project team and instructor.

Communication Norms:

Each team member plays an essential role in the success of the overall project. Team members must always communicate with others professionally and respectfully and avoid dismissive, hostile, and combative behavior. Furthermore, at the core of any successful project is positive and open communication; to foster team collaboration, the project team will utilize the Slack application as the official source for team communications. Although Slack is the official source of team communication and essential messages, team members are also encouraged to select the best method of communication as necessary. These alternative methods of communication include official school email, mobile text messaging, and phone calls. Moreover, imperatively if other methods of communication are utilized, each team members will ensure the team coordinator and fellow team members are apprised as well. Similarly, GitHub will be utilized for communicating and storing project documentation and version control for source code.

Meeting Norms:

Another aspect of teamwork involves conducting and participating in various types of meetings to foster collaboration, addressing team concerns, and to resolve critical and urgent matters which may impact the health of project tasks. Therefore, the project team agrees to meet weekly on Wednesdays after class at 2:00PM in a group room on the north tower 5thfloor of the library. The weekly project coordinator will be responsible for notifying team members of any meeting changes. While the coordinator may take initiative for suggesting meetings, details are to be agreed upon by all project members except under extenuating circumstances. Equally important, at any time required a team member may request to have a face to face meeting, conference call, or virtual meeting via Skype. Also, project team members are expected to attend, arrive on time, and actively engage in meetings. Project team members must notify the weekly team coordinator, in advance when possible, in event of being tardy or absence to a meeting. On the first violation, the weekly team coordinator will have a private conversation to reinforce attendance adherence. Likewise, if a project team member habitually misses a meeting without an excuse, the weekly team coordinator will report the incidents to the instructor for further disciplinary action. Finally, all meeting organizers will make considerable efforts to avoid scheduling conflicts for project meetings.

Handling Difficult Behavior:

Working in a group can be frustrating at times and similarly it can also be fun and exciting; however, not all project team members have the same thought process approaching tasks. Having different thought processes and approaches while working in a team sometimes cause difficult behavior. A few examples of difficult behavior are being over talkative, too quiet, not participating, argumentative, and constant complaining and making excuses. Two project team members experiences are below:

"Many of us experienced all the above behaviors in our past at some point. I was the quiet one for most of my life until I got to college where I realized that communication is key to getting things done. One of the things that helped me overcome the shyness was actually one of my past teammates who kept asking me for my opinion throughout assignments and I actually applying my ideas into the project which made me realize that my opinion also matters so I know how important sharing ideas is because it contributes towards team building and efficiency."-Vijay.

"A couple of years ago I encountered a very talkative, emotionally animated, and opinionated team member on a product development team at my previous employer. The team member's behavior became extremely disruptive and started to affect progress of the project. I asked the team member to join me for lunch and we engaged in a direct conversation regarding his behavior during meetings. The team member expressed he was unaware of his behavior and that others were annoyed. He thanked me for speaking with him in a professional manner regarding his conduct. Sometimes team members are not aware of their behavior and itis important to address team members with respect."-Dong.

Handling Group Problems:

Working in groups can make it much easier to finish tasks at hand, but at the same time, when the group goes off topic too often, it becomes much harder to attain success at completing the assignment. Also, working in a new group can be exciting but when the project members spend too much time getting to know each other or spend too much time discussing things that are off topic it destroys the efficiency of that group. To avoid this, before meetings assign a list of tasks for each project member equally, to ensure proper engagement. Assigning tasks improves the efficacy and keeps project members focused. In addition, it also helps to say things like "can we go back to what we were talking about a minute ago and see what we can do?" or "hey, I have an idea on that thing we were discussing about earlier."

Decisions can be one of the most critical aspects of teamwork. Likewise, disagreements and conflicting approaches can equally play key roles in a project team's demise. Two examples of how to handle group problems are listed below

"Working in a group project in my 3210 class, I've had this problem when I was the team coordinator where two members had different ideas on a subject, so I scheduled a meeting with the two members and listed out a pros and cons according to each team member, and we came to a collective decision on which idea was more effective. Therefore, as long as communication is open disagreements can be resolved quite easily" -Vijay

"When dealing with group problems it is important to ensure each project team member is able to express their concerns Infront of a mediator. I experienced this working on a MATLAB project involving image processing. Once the facilitator gave each team member an opportunity to express their approach and ideas freely, the team was able to come together and make

compromises to resolve the conflict. I think this was a very effective approach and I utilize the same approach when conflicts arise in groups"-Adrian

Problem Statement:

Our product is a book review app that lets you acquire the reviews of any book instantly by simply taking a picture of it. We use an image reading system to identify the book before searching platforms like Amazon, Goodreads, and many other helpful sources. This makes the reviews precise due to the accuracy of the content we are searching for. Many books have different versions; some even have the same names with different authors; in this case, our app will help identify the correct book by eliminating any possible human errors in searching for the book. This product is for all the book readers but specifically for high schools because they do a lot of summer reading assignments, and it's helpful for them to choose the more interesting books. It saves time and is more effective because it shows the reviews for the exact book you are looking for and nothing else. A few alternatives would be searching for the book manually on the internet or libraries, which take more time and is less accurate. This project is worth the time and effort to develop because not only does it help the customer but in cases like high schools or even college, the students who must read the books that the institution chose wouldn't have to worry about reading monotonous books. To build this system, we'll be using the Amazon Rekognition API which lets us search using just an image and its API allows us to implement a graphical user interface which lets the customers use their own images to search for reviews for the book they are looking for. This project is interesting because we will be combining two different platforms into making something unique. We are using a reverse image search engine and linking it to sources like Amazon, Goodreads, LibraryThing, and a few others. This saves the user from the need to search for the book manually; the only thing they'll need to do is take a picture and let our software do the rest.

Requirements:

System Requirements:

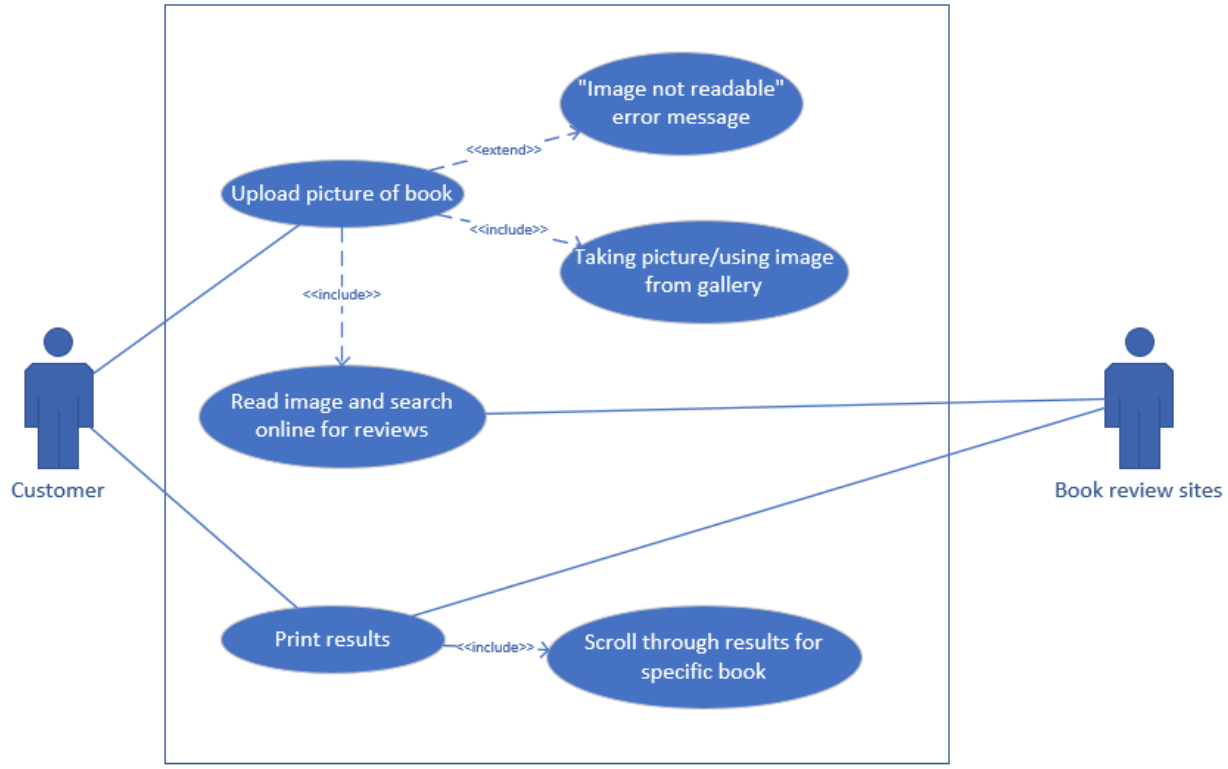
- The system should take less than 10 seconds to load up all the results.
- the system should keep all the searches private.
- the system should be free to use.
- the app should contain an "upload image" button and a search button.
- the system should be able to run on smartphones.
- the system should have a high level of RAM in order to process the request at a high pace

User Requirements:

- the user shall be able to upload a picture from camera roll or by taking a picture.
- the system shall be able to read the image and identify the book that the user is looking for.
- Once the system identifies which book the user is looking for, the system shall surf through the websites linked to the app to find all the book reviews related to that specific book.
- the system must contain libraries of all the sources used like Goodreads, LibraryThing, etc.
- the system shall offer different ways of listing out the results for the user (low-high ratings, latest-oldest ratings, most popular ratings, etc.)

  .

System Requirements diagram:



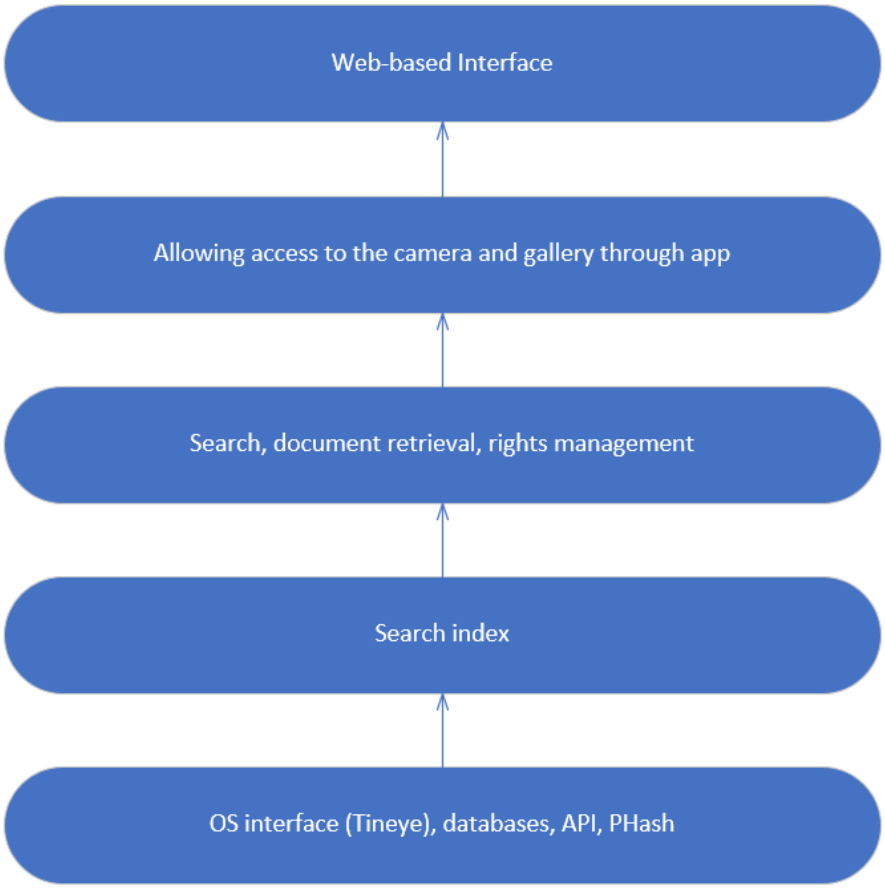
System Requirements Diagram for Customer Interaction with Program

Behavioral Modeling:

Architectural Design:

We decided that the layered model would be most efficient for this project due to its simplicity. The layered model not only keep things straight forward and simple, but it also allows us to change individual components and also test them individually without affecting the other variables. This is one of the most important and helpful features for this project because there aren't many functions used in our project and we need the application to run smoothly without tripping over itself. The layered model keeps things neat and allows us to be responsible for each step of the process individually rather than affecting other components when a change is made in a certain area but it's all brought together because they are still dependent in the sense that one step must be accomplished in order to move on to the next, which keeps us in check throughout the whole project.

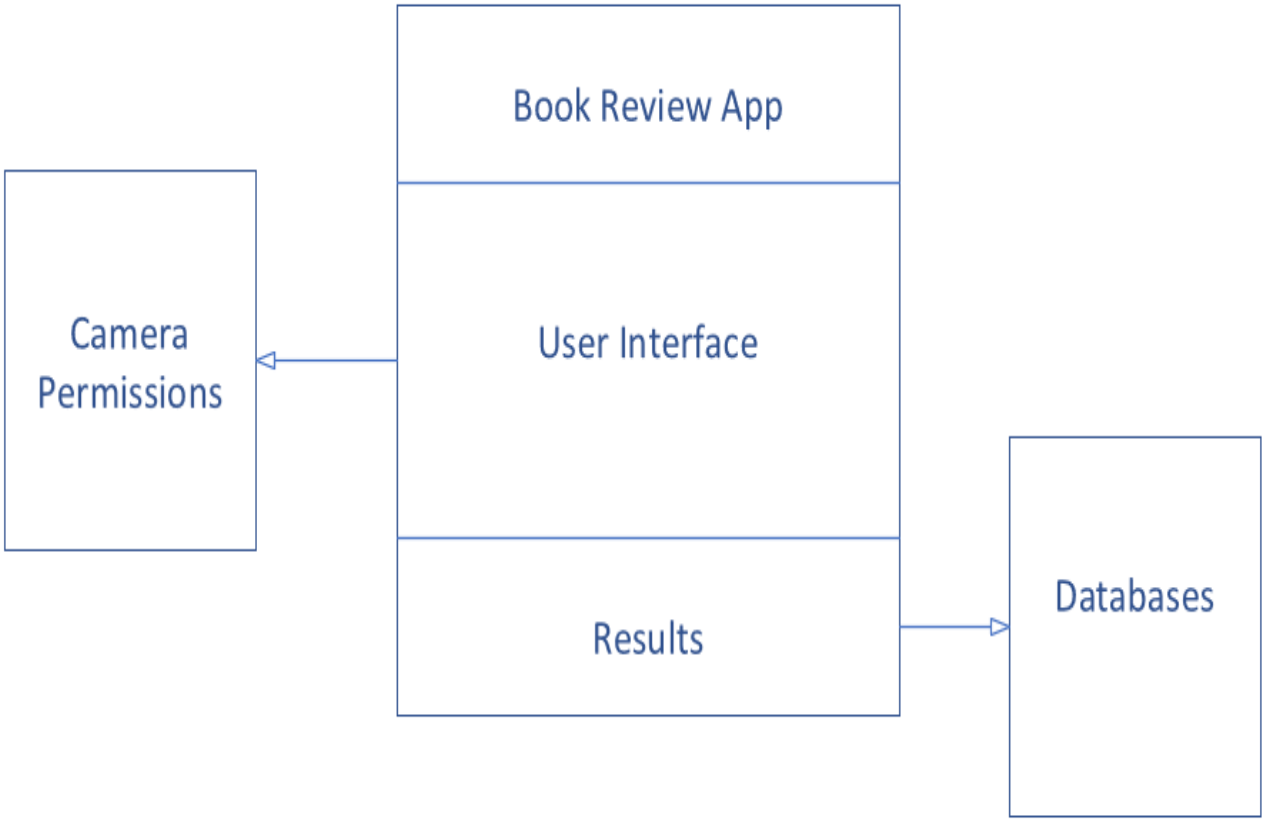
Layered Model:



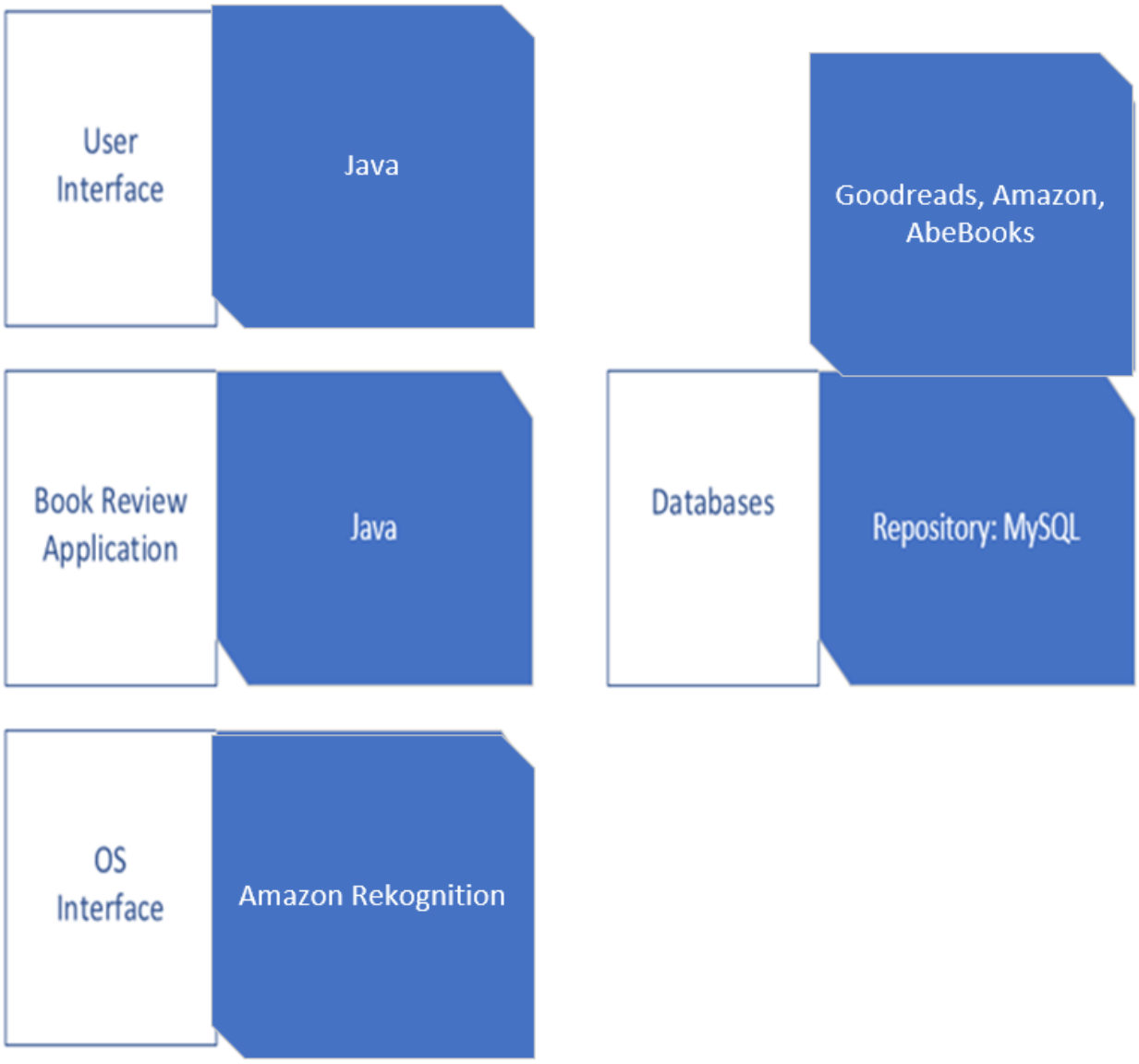
4+1 model:

Logical view:

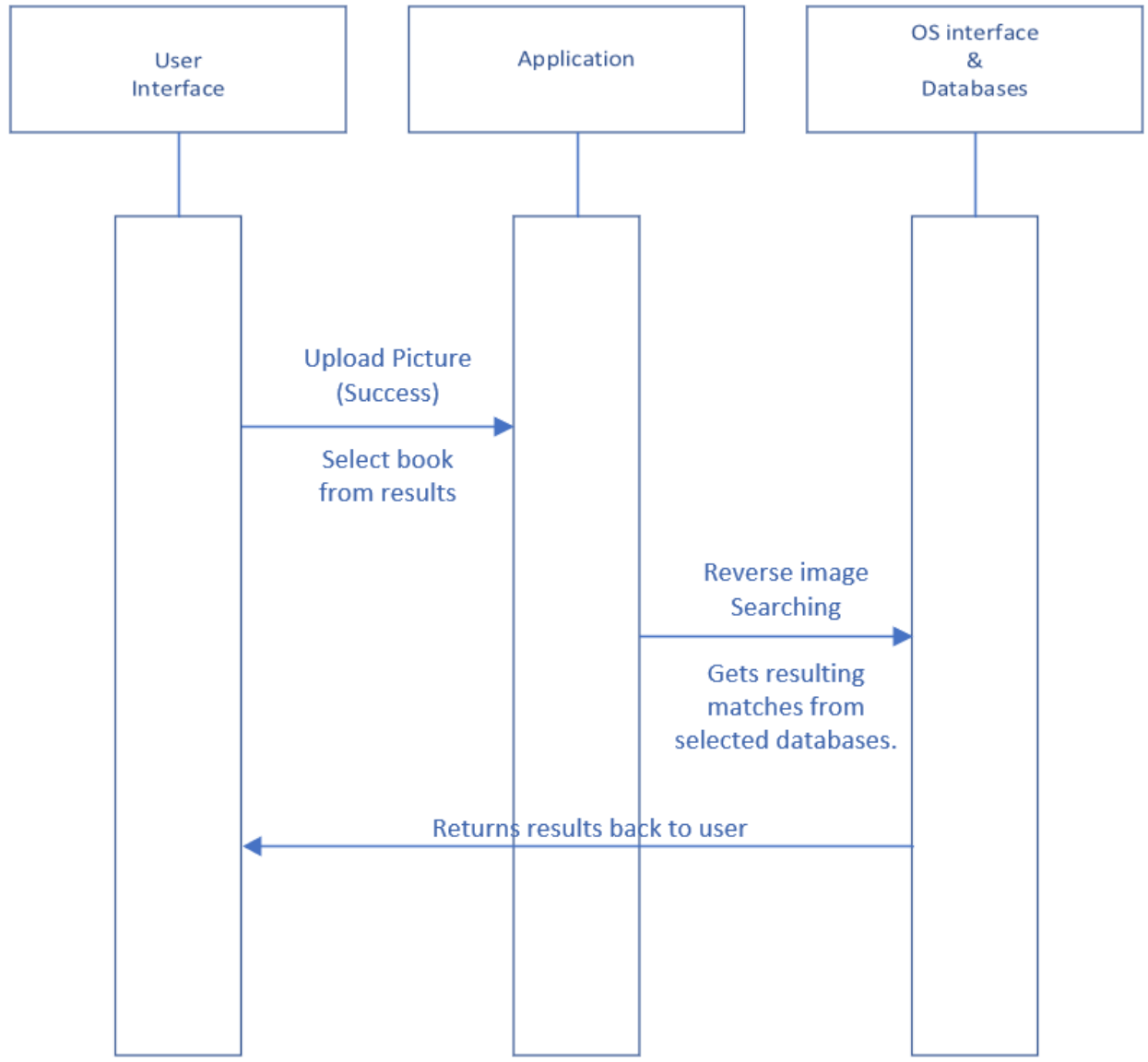
Physical view:



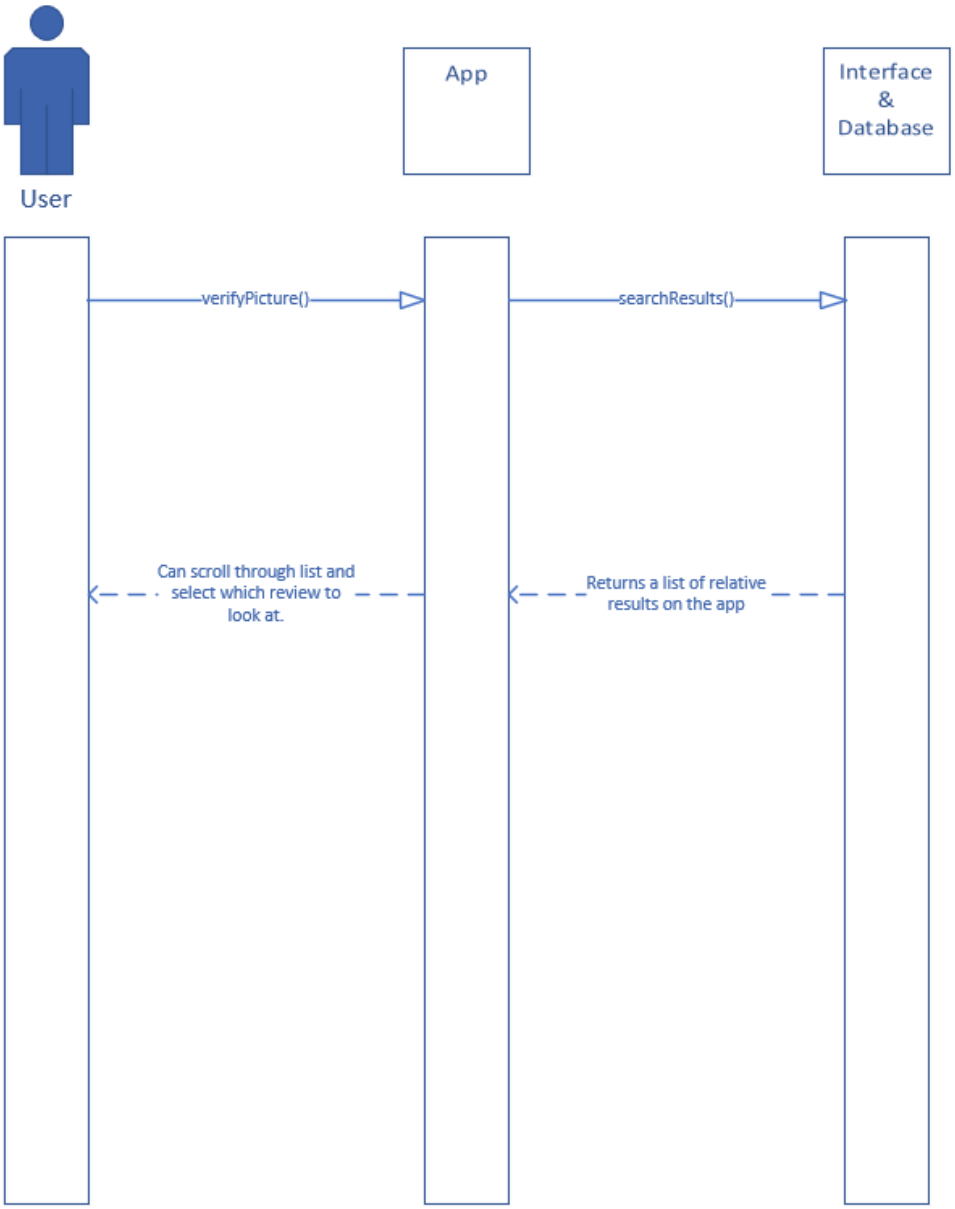
Development view:



Process view:

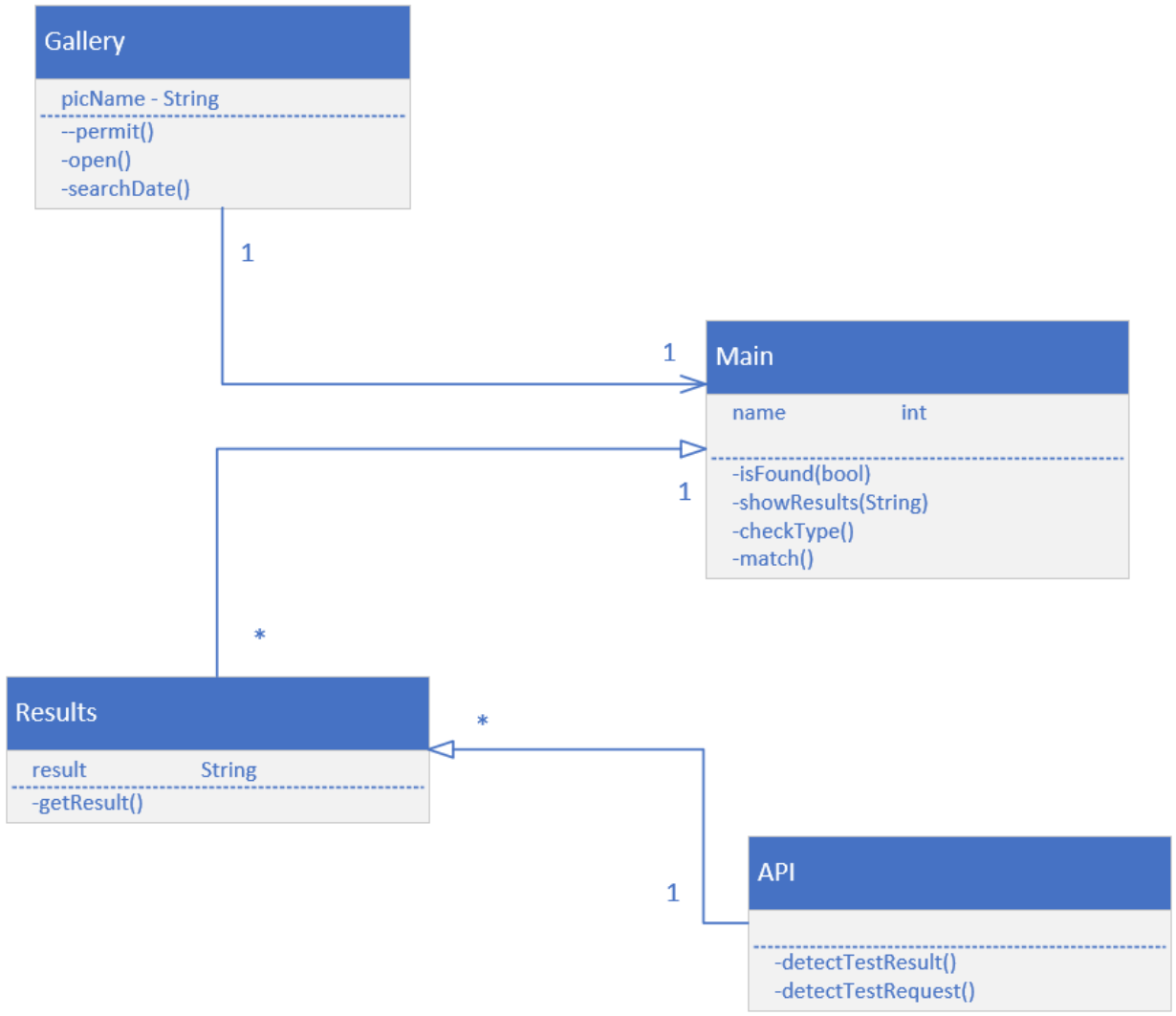


Sequence Diagram:



This application is relatively simple so there won't be a lot of cases going on during the execution. The objective of the application is to make the job as easy for the user as possible. The main feature of this application will be acquiring reviews for a book by simply uploading a picture of the book the user is looking for the reviews on. To do this successfully, our system must be able to read the image clearly and to do that we will be using the Amazon Rekognition API, an existing system which will help us with the reverse image searching. We use an existing system because there is no point in wasting our time creating a new system when there is one already available to us that gets the job done more efficiency.

Updated class diagram:



We made a few updates to the class diagram after revising our previous assignment and in here you will find a more in-depth analysis of what types of classes we'll be using and how we will link one software with another. Thee API from Amazon Rekognition will be very helpful because it already contains the software we need for the user to control it rather than working with a given index of information. The library is infinitely large and what the user wants to find from it is now entirely in their hands. We will be however linking the API to our Database class which has all the book sources implemented in it, such as Amazon, GoodReads, LibraryThing, and more. This helps us collect the reviews of the books from credible websites rather than random google searches.

Implementation:

Originally, we were planning to use Python for coding, however, we ultimately decided to use Java instead. By observing the code on Figure A, we were able to create a filter in the gallery where only files in the “image” directory on the phone searches for either .jpeg, .jpg, or .png files.

```
public void getGallery() {
    Intent intent = new Intent(Intent.ACTION_PICK);

    intent.setType("image/*");
    // Looks for images only in these format
    String[] mimeTypes = {"image/jpeg", "image/jpg", "image/png"};
    intent.putExtra(Intent.EXTRA_MIME_TYPES, mimeTypes);

    // Launching Intent
    startActivityForResult(intent, GET_FROM_GALLERY);


}
```

Figure A

Since we’re developing an Android application we’re going to need to a separate IDE to set the environment. So therefore, we will be using Android Studio to create the app.

Testing:

The concept of this piece of code is to make sure the image uploaded by the user is in either ".png", ".jpg", or ".jpeg" format. This gives our system a set of instructions to give the user an error if otherwise.

Identity Feature:

1. Identify Picture

Feature One, Identify Picture:

Partition Input: verifyPic(file_object = open("filename","r"))

- The user takes a picture from the file
    - Possible partitions are files ending with either .png, .jpg, .jpeg file signatures.

Test Specification:

- Filename: must be in a .png, .jpg, .jpeg format that is under 5 MB.

Test Case:

#1:

- Inputs:
    - pictureofbook.png
- Outputs:
    - Retrieves review information of book

#2:

- Inputs:
    - filethatdoesntbelong.pdf
- Outputs:
    - File denied: file not recognized, try again with another file.

#3:

- Inputs:
    - averylargefile.png
- Outputs:
    - File denied: file exceeds 5 MB, try again with another file.

The test case code was built using the Python language and can be ran by:

```
python test.py
```

. It uses the package called "unittest", which is another name for a package from PyUnit. In this case, the code tries to verify the file signature for the inputted file to be a .png file.

To communicate with the database, we can communicate both connect to the same localhost using LAN by using Django and test by using:

```
python manage.py runserver
```

and connect to http://127.0.0.1:8000.

Implementing Test Cases:

Test ID	SearchInput()
Purpose of Test	To test the environmental working variables and the stability of the MySQL security so that the identity and the information of the user's application cannot be altered/access by the attackers nor have root access as the administrator.
Test Environment	The search text field will exist on the history page to conduct searches among previous book search results.
Test Steps	Tester must download the app from either the project GitHub or from the Google Play app store and get to the history page in the app.
Test Input	1. "The Great Gatsby" 2. "Brainfuck: the Book" 3. ' OR 1=1-- 4. True or 1=1'
Expected Results	1. Search result for "The Great Gatsby" found! 2. Search result for "Brainfuck: the Book" found! 3. Search result for "'OR 1=1--" not found! 4. Search result for "True of 1=1'" not found!

Problems/Bugs	Vulnerability to SQL injections in SQL language may cause an unauthorized user to have access to the main database and may manipulate sensitive data..

Test Documentation:

Bug	Bug location	Description of Bug	Possible actions to take
SQL injection on the history query	History	SQL injections on the history database may grant user unauthorized root access to the whole database system, possibly altering data for many users.	Take every input as a plaintext, so that even if special characters are used, they count as a part of the book's name.

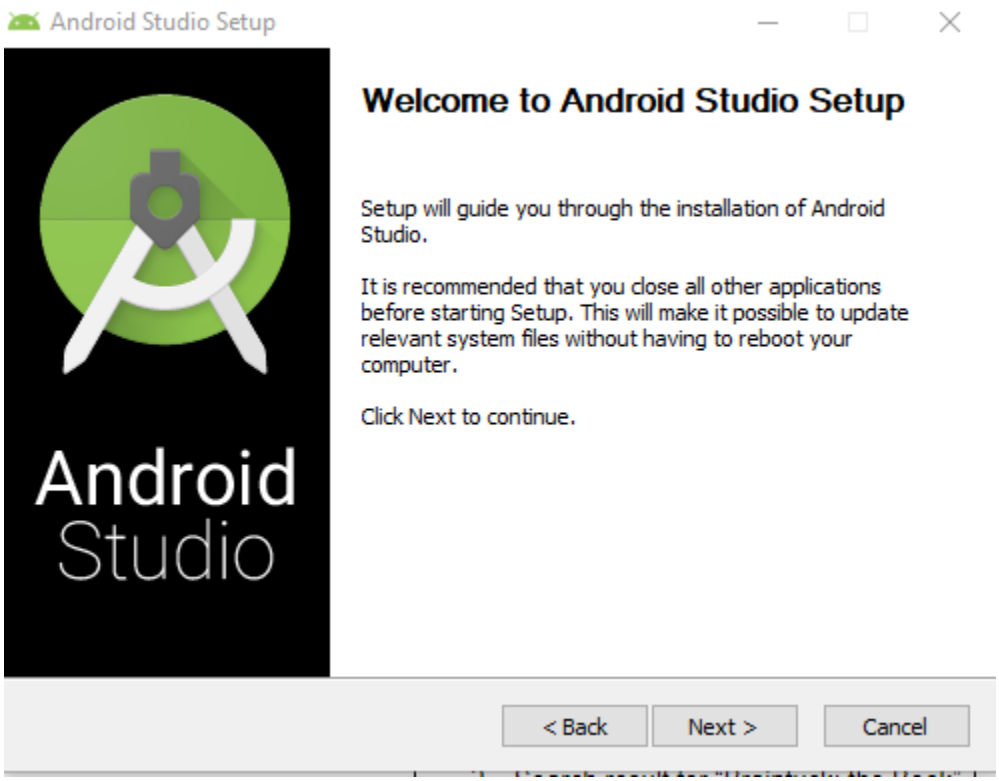


Fig. 1 Downloading Android Studio

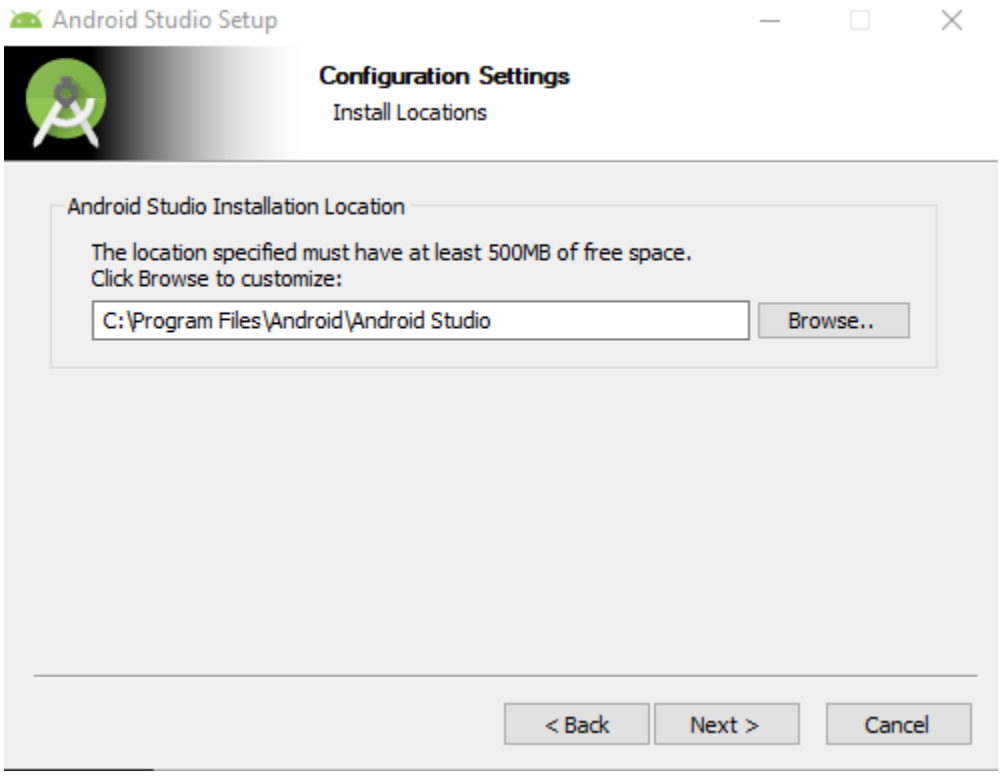


Fig. 2 Installing directory location

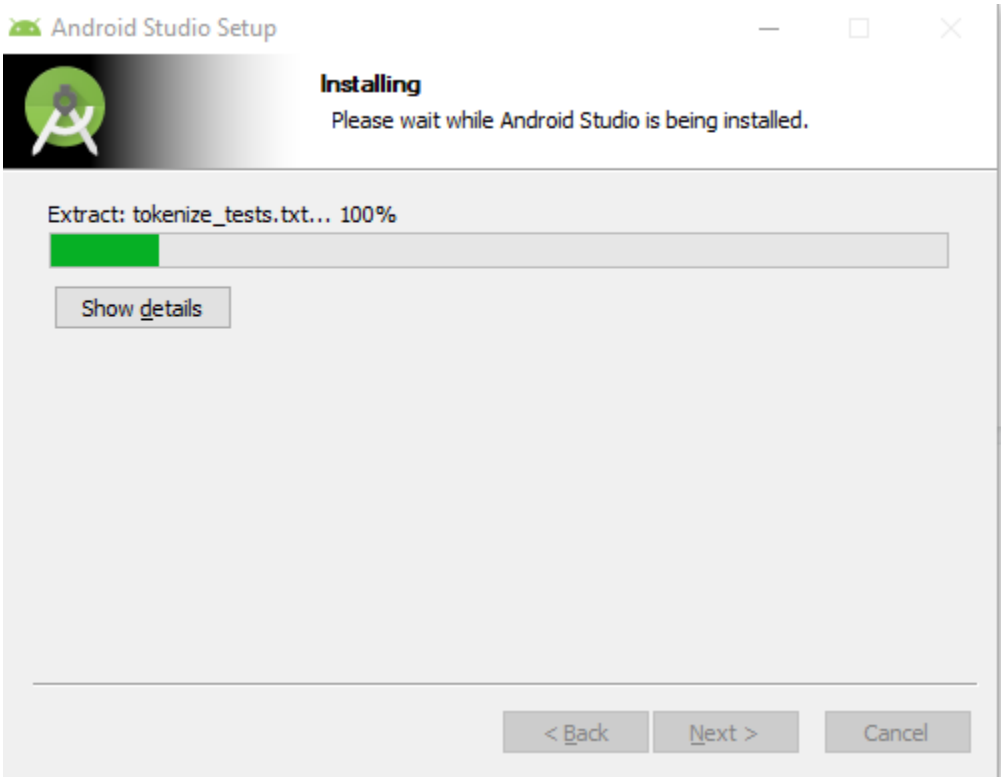


Fig. 3 Install

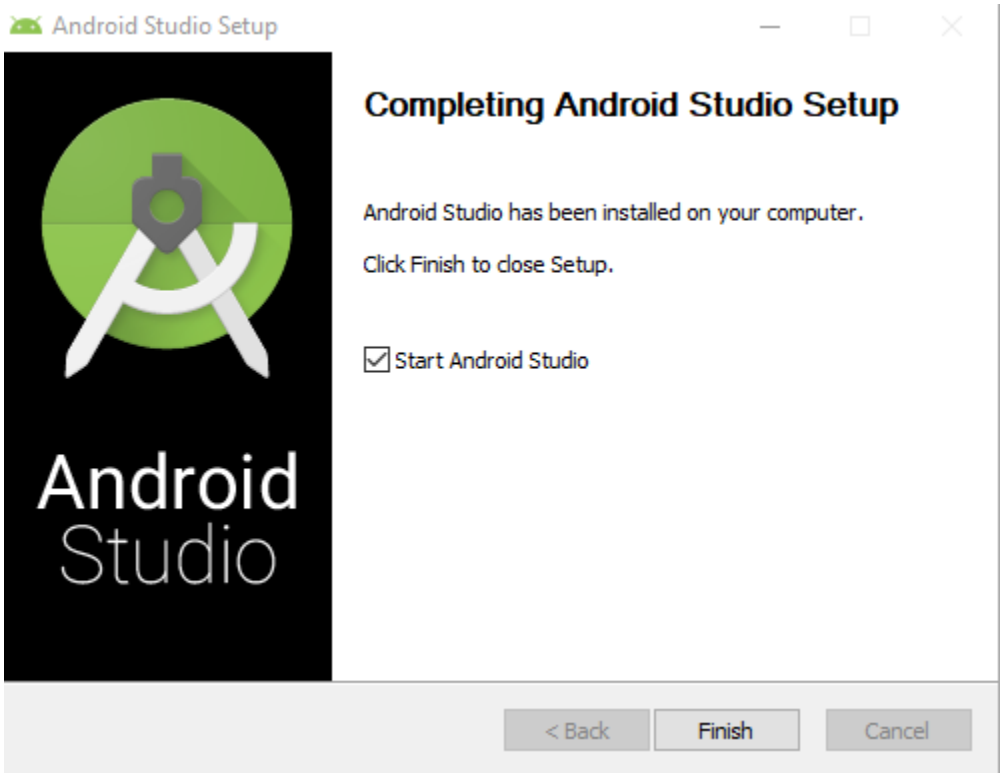


Fig. 4 Complete download by starting Android Studio

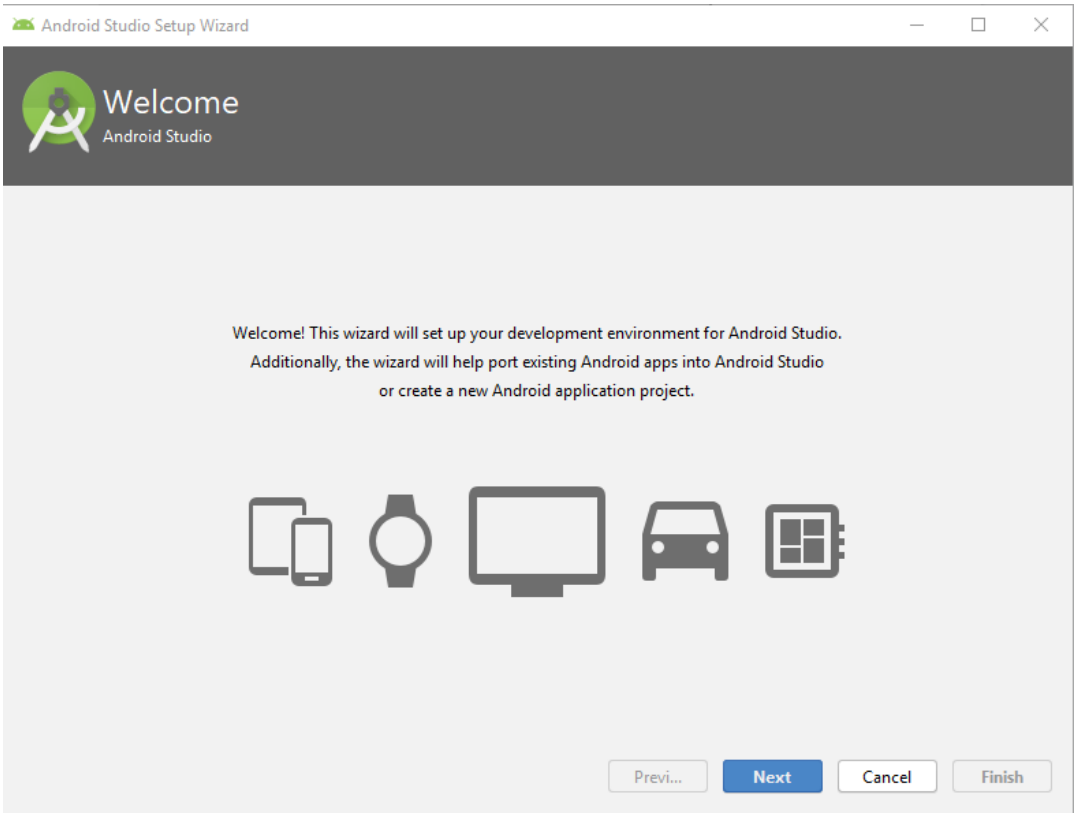


Fig. 5 Start Android Setup Wizard

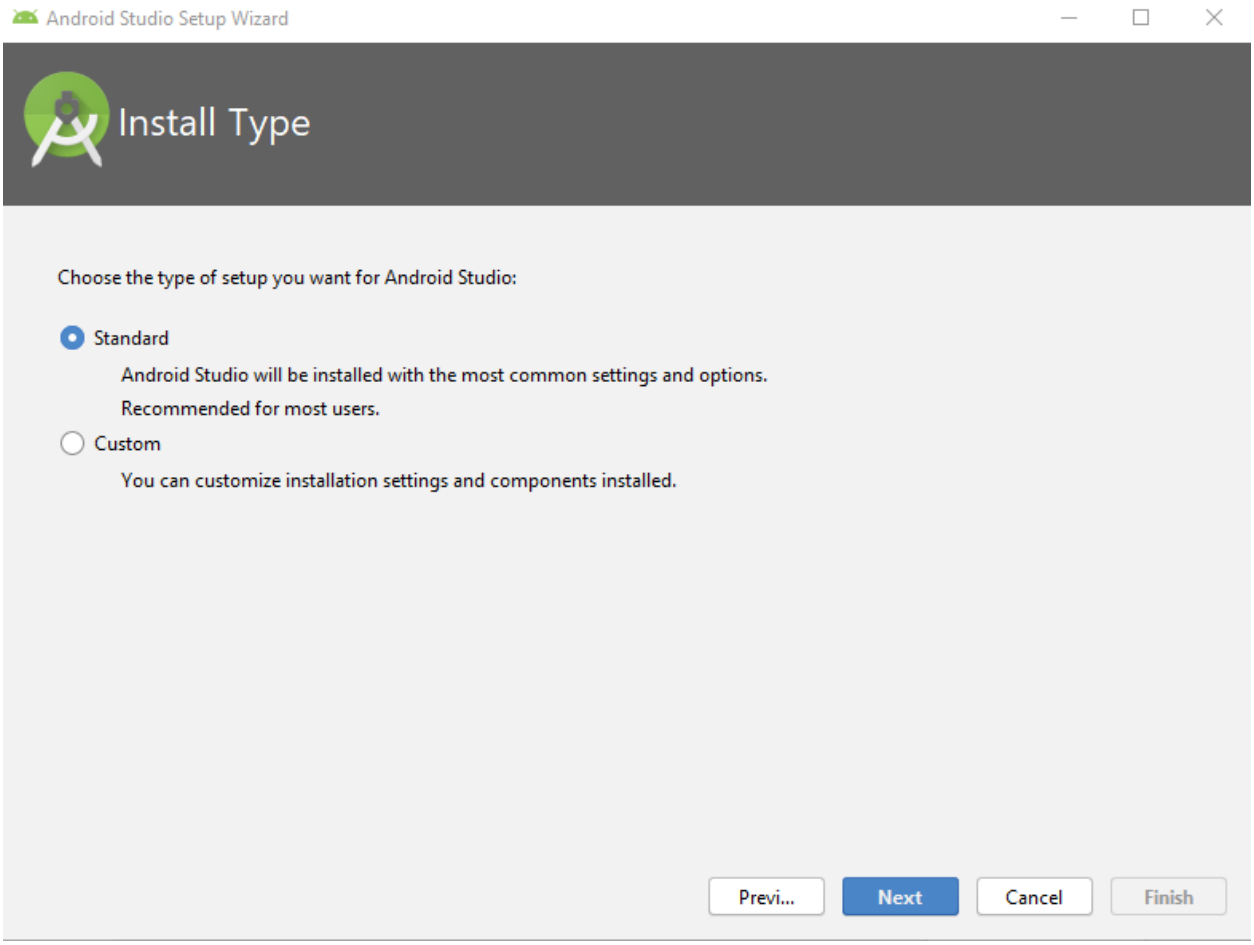


Fig. 6 Install Standard/Custom

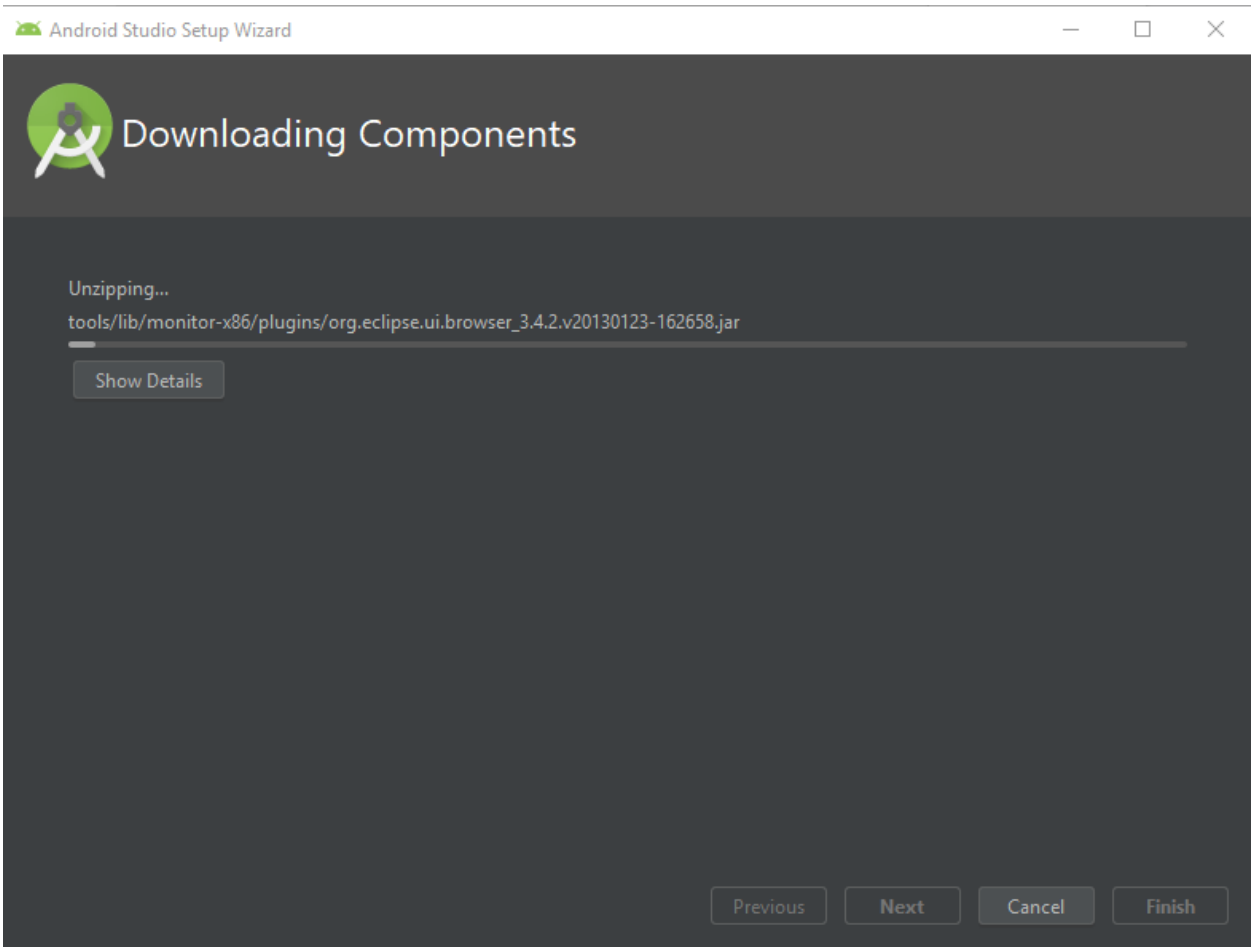


Fig. 7 Download Components and wait until finish

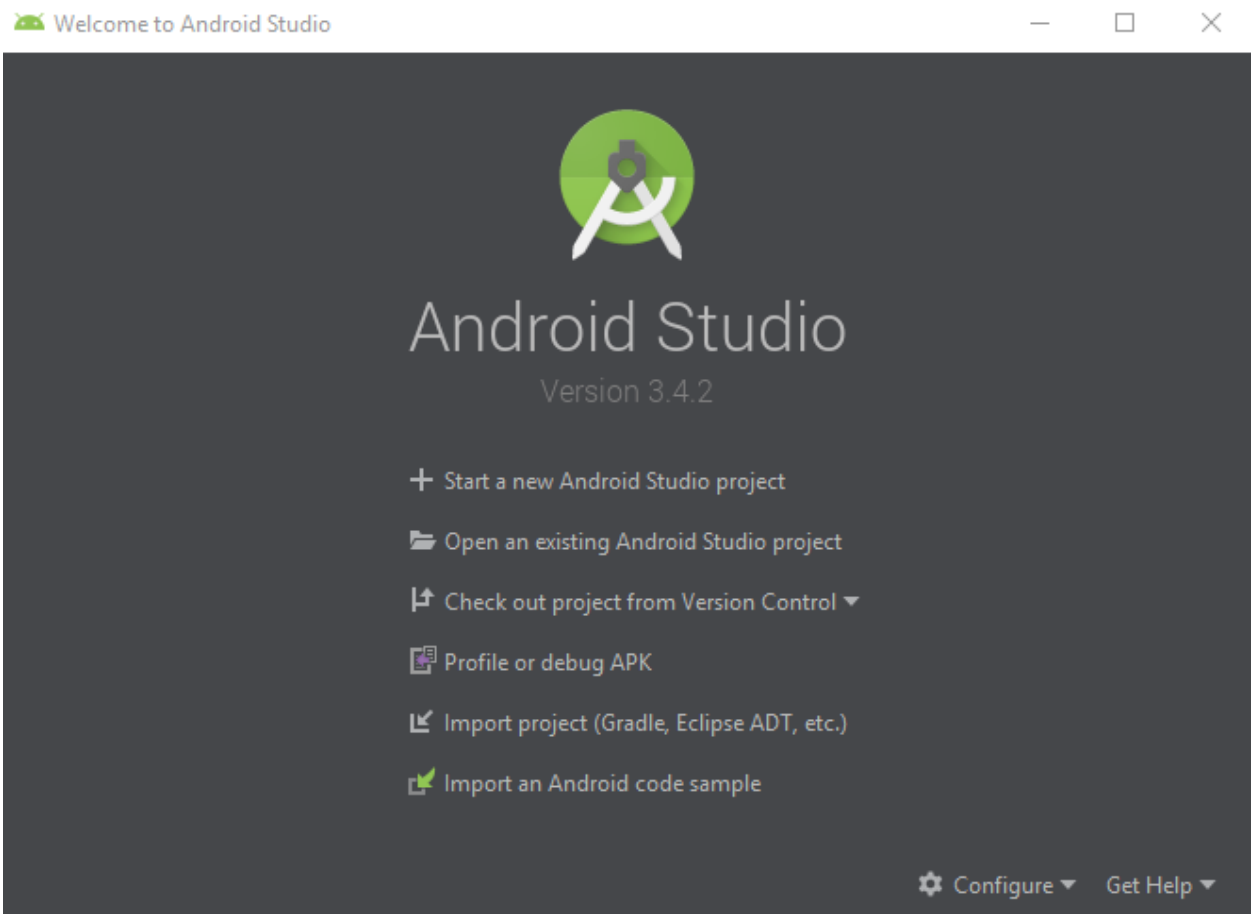
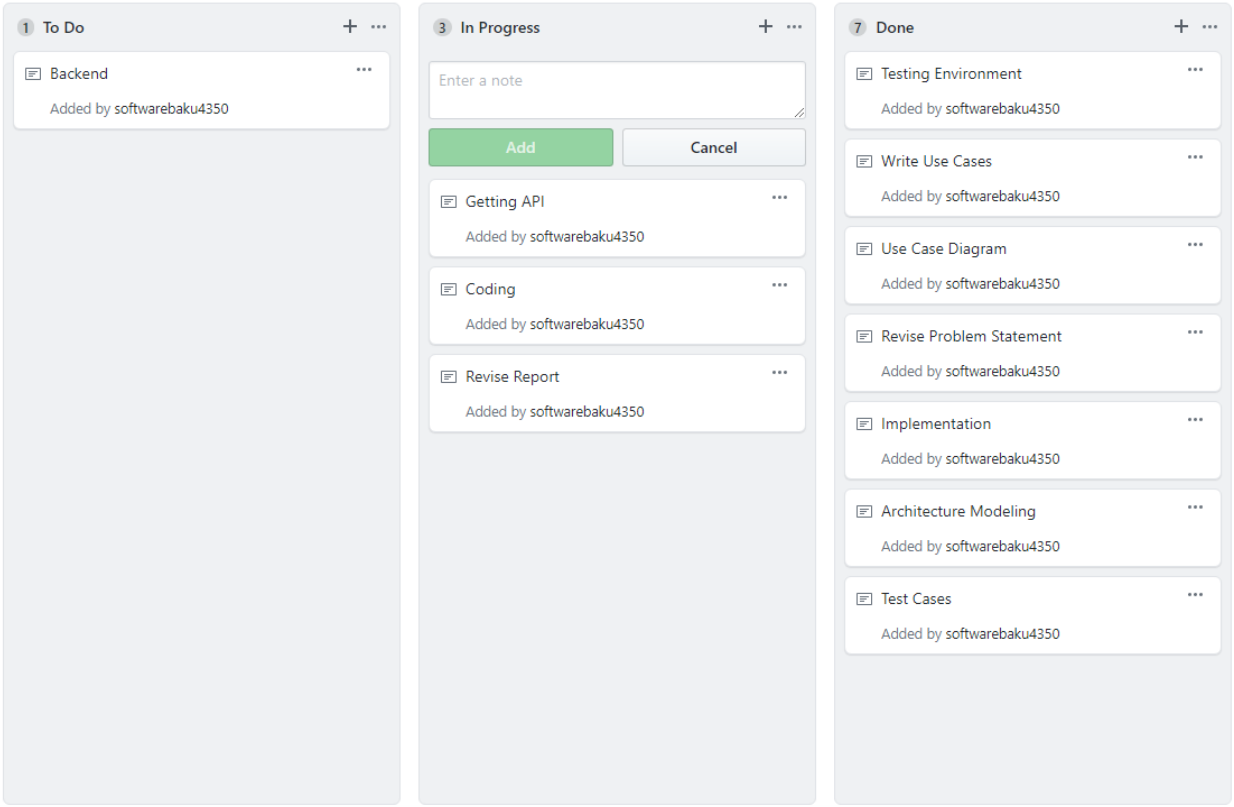


Fig. 8 Start Android Studio


1 import unittest$
2 $
3 class TestStringMethods(unittest.TestCase):$
4 $
5 ^Iimage = 'pictureofbook.png'$
6 $
7 ^Idef verifyPic(self):$
8 ^I^Iself.assertEqual(image[-4:],'.png')$
9 $
10 if __name__ == '__main__':$
11 ^Iunittest.main()$

Appendix

GitHub: https://github.com/softwarebaku4350/CSC4350/tree/master/Assignment-5



Slack: https://softwareengin-yfd3984.slack.com/messages/CKXJG16TD

YouTube: https://youtu.be/Ws4-CGfBojo