

# PhD Thesis Evaluation Portal

VIII Semester Project – B Tech IT – IIIT Allahabad

Date: 09-03-2017



Under the Guidance of:

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# Declaration

We hereby declare that the project work entitled “PhD Thesis Evaluation Portal” is a record of an original work done by us under the guidance of Dr. Pavan Chakraborty and had not been submitted to any other University or Institute or published earlier.

Place: IIIT Allahabad

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# Acknowledgement

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We would also like to thank our batch-mates and friends who were ready with their inputs at all times, whether it was an offhand comment to encourage us or a constructive piece of criticism. Last but not least, we would like to thank the IIIT-Allahabad staff members and the institute, in general, for extending a helping hand at every juncture of need.

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# Table of Contents

Declaration .....	2
Acknowledgement .....	3
1.Overview .....	5
1.1 Abstract .....	5
1.2 Motivation.....	5
1.3 Target Audience .....	5
2. Literature Survey .....	6
2.1 3-Tier Architecture <sup>[1]</sup> .....	6
2.2 Django [2] .....	7
2.3 Prototyping Model [3] .....	8
3. Software Requirements .....	9
4. Proposed Methodologies .....	10
4.1 Workflow .....	10
4.2 Use Case Diagram .....	11
4.3 Database Schema .....	13
5. Time Plan of the Project .....	14
5.1 Work done till Mid Semester .....	14
6. References .....	15

# 1. Overview

## 1.1 Abstract

The project aims to develop a PhD Thesis Examination portal for our campus (IIIT-Allahabad) which is a web application, to be hosted so that it is available to all online. The PhD students are provided with the facility to get their thesis evaluated online through a portal where a mentor guides a student till the thesis gets evaluated. Some authorized referees evaluate the thesis based on the requests of the mentor and director of the institute and provide their remarks.

## 1.2 Motivation

As we know, the evaluation of a PhD thesis takes a lot of time and effort and is quite hectic. The traditional way of getting a thesis evaluated is quite unorganized and as the student keeps his thesis for himself, there is no scope of enthusiastic researchers to acquaint themselves with additional knowledge and plunge deeper into the vast ocean of knowledge. The novice have no scope of knowing the works of those who have already researched in the same topic nor do they know how much more research has actually been done in that particular topic. Our campus doesn't have a PhD portal and hence we decided to work on it and design a portal which will be put to use and will save the effort of many.

## 1.3 Target Audience

This portal is aimed to make the evaluation process of the theses easy for the research scholars of IIIT Allahabad.

## 2. Literature Survey

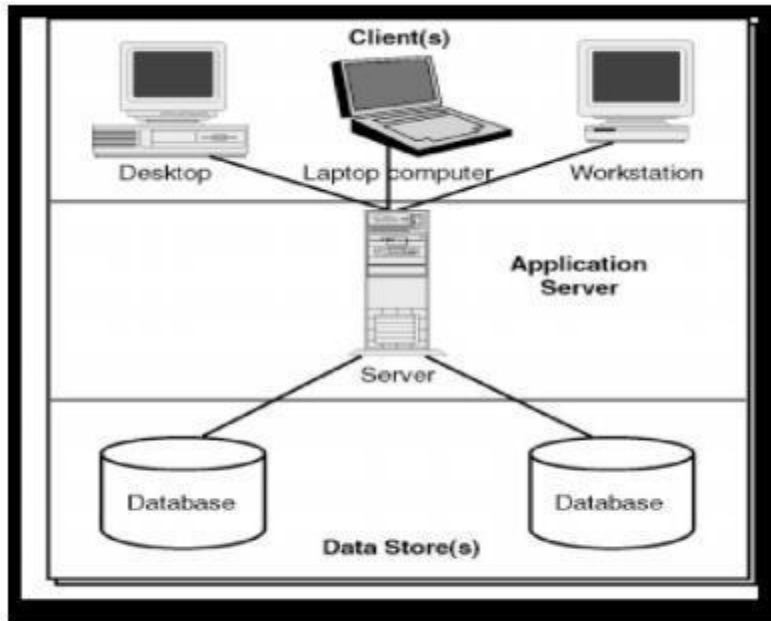
### 2.1 3-Tier Architecture <sup>[1]</sup>

In 3-tier architecture the software is divided into 3 different tiers: Presentation tier, logic tier, and Data tier. Each tier is developed and maintained independently.

- ☐ Presentation tier: the top-most level of the application, it acts as user interface.
- ☐ Logic tier: it moves and processes data between the two surrounding layers.
- ☐ Data layer: here information is stored and retrieved from a database or file system.

In general it is more difficult to build a 3-tier system because of architecture complexity in design and communication beside it needs more setup and maintenance effort, in the other hand it has many advantages such as:

- ☐ Scalability.
- ☐ Improve security.
- ☐ As each tier independent from another tiers, Updates or changes can be carried out without affecting the system as a whole.



**Figure 2.1:3-tier architecture**

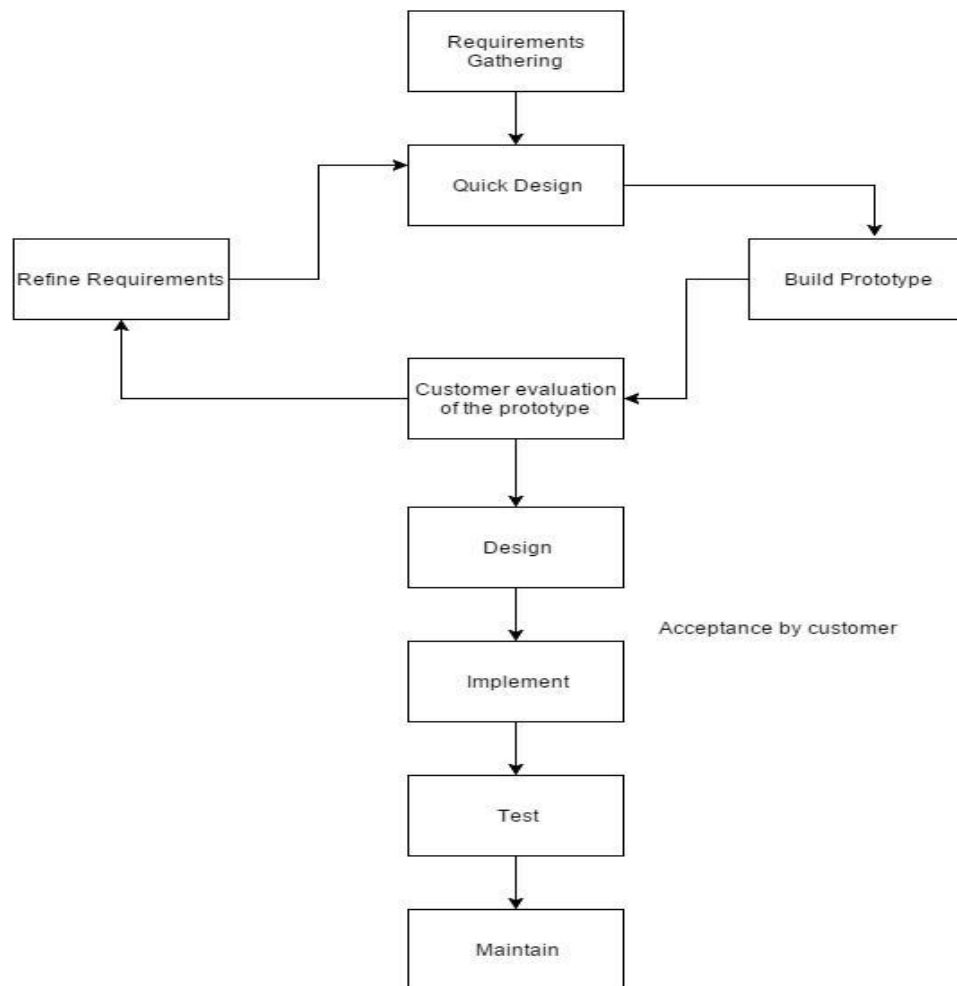
## 2.2 Django (Web-Framework) <sup>[2]</sup>

Django is a free and open source frame work, written in python which follows the model-view-template (MVT) pattern. It is developed by Django Software foundation (DSF).

Django's primary goal is to ease the creation of complex, data-base driven websites. Django emphasizes re-usability of components, Python is used throughout, even for setting files and data models. Some well known sites that includes Django are Pinterest, Instagram, Mozilla, e.t.c.

## 2.3 Prototyping Model <sup>[3]</sup>

The **prototyping model** is applied when detailed information related to input and output requirements of the system is not available. In this model, it is assumed that all the requirements may not be known at the start of the development of the system. This model allows the users to interact and experiment with a working model of the system known as **prototype**. The prototype gives the user an actual feel of the system. At any stage, if the user is not satisfied with the prototype, it can be discarded and an entirely new system can be developed.





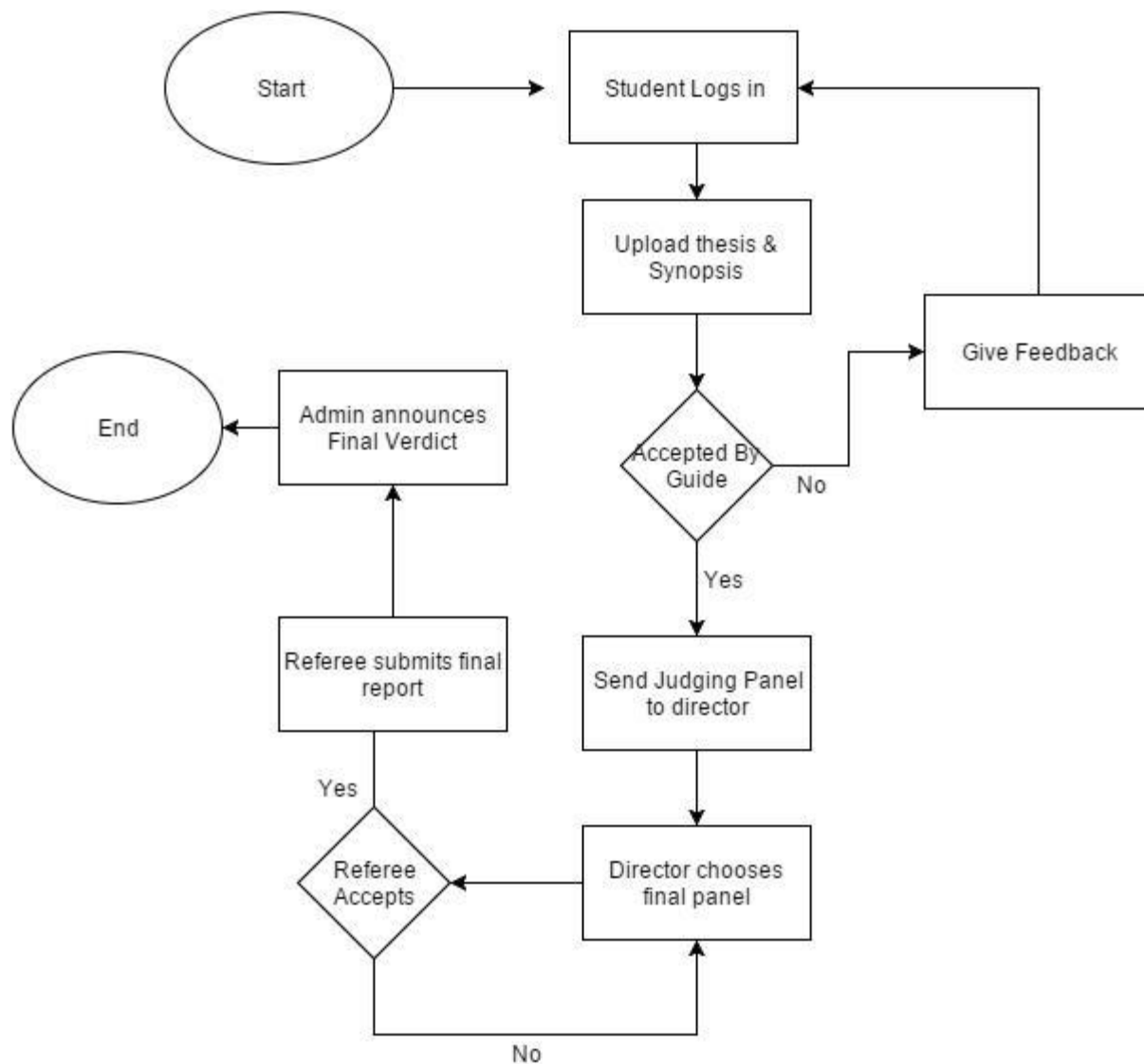
### 3. Software Requirements

- Windows 7/8/8.1/10.
- Komodo Edit<sup>[4]</sup>.
- Django Framework<sup>[2]</sup>.
- MySql.
- Python<sup>[5]</sup>.

## 4. Proposed Methodologies

### 4.1 Workflow

There are several processes that work together in a sequence to yield the output. The flowchart below describes the workflow in the software –



Some of the important modules in the flowchart are explained in the succeeding pages.

## 4.2 Use Case Diagram

### Importance of Use Case Diagrams

As mentioned before use case diagram are used to gather a usage requirement of a system. Depending on your requirement you can use that data in different ways. Below are few ways to use them.

- **To identify functions and how roles interact with them** – The primary purpose of use case diagrams.
- **For a high level view of the system** – Especially useful when presenting to managers or stakeholders. You can highlight the roles that interact with the system and the functionality provided by the system without going deep into inner workings of the system.
- **To identify internal and external factors** – This might sound simple but in large complex projects a system can be identified as an external role in another use case.

### Use Case Diagram objects

Use case diagrams consist of 4 objects.

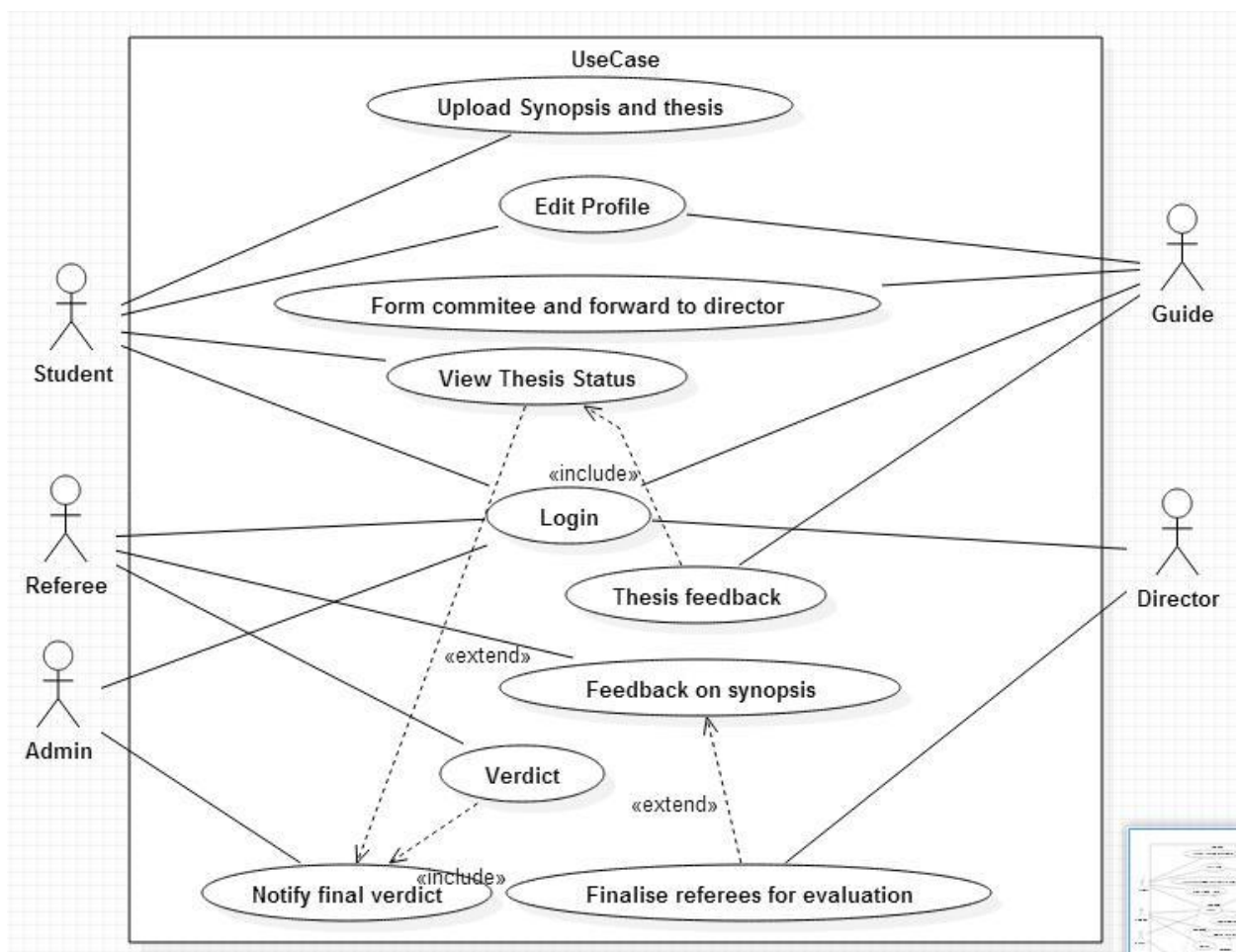
- Actor
- Use case
- System
- Package

**Actor:** Actor in a use case diagram is any entity that performs a role in one given system.

**Use Case:** A use case represents a function or an action within the system.

**System:** System is used to define the scope of the use case and drawn as a rectangle.

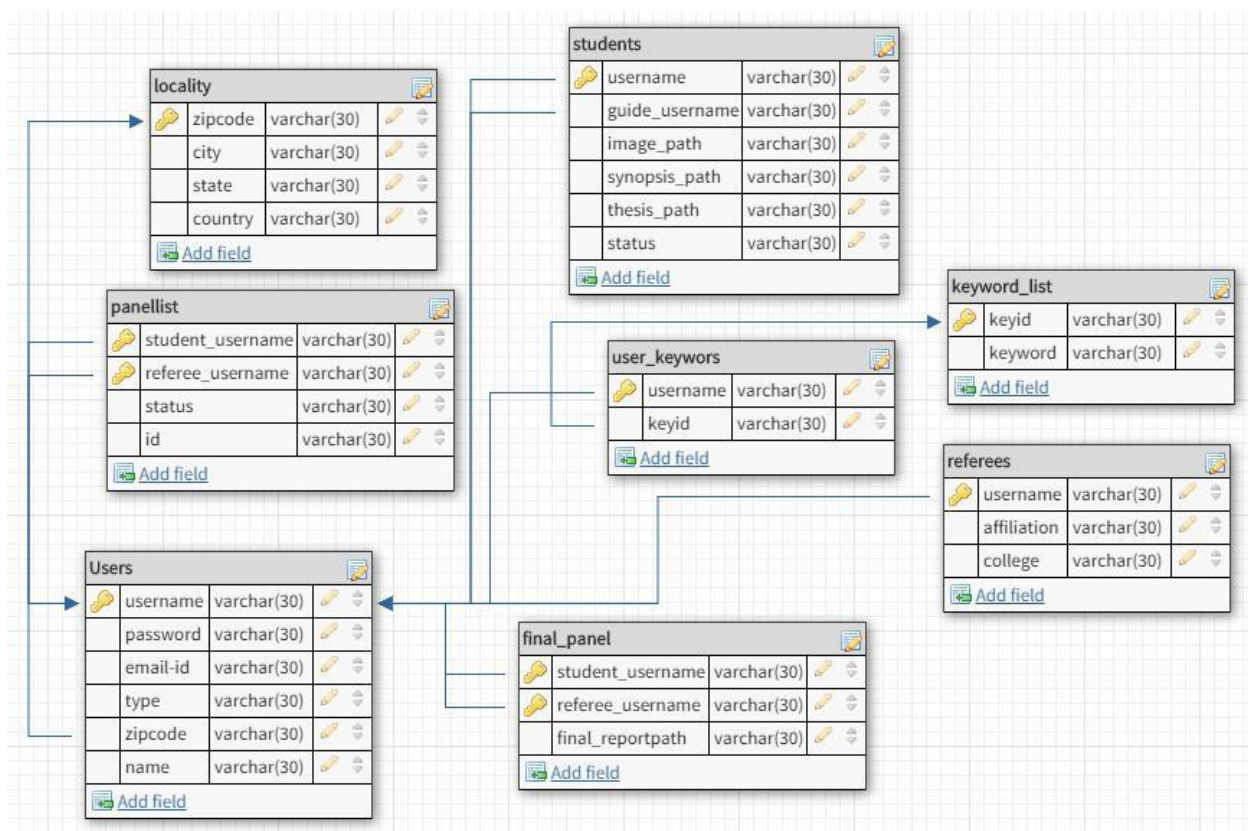
**Package:** Package is another optional element that is extremely useful in complex diagrams. Similar to class diagrams, packages are used to group together use cases.



## 4.3 Database Schema

A database schema is the skeleton structure that represents the logical view of the entire database. It defines how the data is organized and how the relations among them are associated. It formulates all the constraints that are to be applied on the data.

A database schema defines its entities and the relationship among them. It contains a descriptive detail of the database, which can be depicted by means of schema diagrams. It's the database designers who design the schema to help programmers understand the database and make it useful.



## 5. Time Plan of the Project

### 5.1 Work done till Mid Semester

- A well robust front-end design was done which took a lot of time.
- Implemented few functionalities using Python<sup>[5]</sup>, Django<sup>[2]</sup>, HTML<sup>[7]</sup>, CSS<sup>[7]</sup>, Bootstrap<sup>[6]</sup>, Ajax<sup>[8]</sup>, Json<sup>[8]</sup> and few Web Security<sup>[9]</sup> threats.
- Designed a Normalized database schema which is normalized up to 3NF.

## 6. References

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