

**Software Systems Lab**  
**CS251 Project Report**  
**Course Networking**

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# Contents

- 1 Title
- 2 Abstract
- 3 Problem Statement
- 4 Login Signup
- 5 Homepage
- 6 Student timetable
- 7 Course homepage
- 8 Course resources
- 9 Discussion forum
- 10 My Drive
- 11 User Profile
- 12 Events
- 13 Calendar
- 14 Feedback
- 15 Site setup and maintenance by admin
- 16 Features

# 1 Title

Course Networking

## 2 Abstract

- Social networking website for courses, with emphasis on notifications, discussion forums and student feedback. Separate interfaces for instructors and students, profiles for all users.
- Students
  - maintain profile
  - have a calender containing events highlighted
  - receive notifications for upcoming events such as exams, assignment deadlines and feedback deadlines based on the events created by instructors.
  - can view his weekly timetable for all courses.
  - can post a question in the discussion forum, search the forum for a question, give answer to one, comment , upvote or downvote an answer.
- An instructor
  - can upload course material, make announcements.
  - can put up a feedback form, view the responses(anonymous),
  - answer a question in discussion forum.
  - has the feature to signup using social media account

## 3 Problem Statement

Creating a **social networking site** for courses with a **user friendly interface** for instructors, students with a platform for **Discussions**, **Timely notifications** for important events, **Feedback forms** and Display of **timetables**.

## 4 Login Signup

We extended django's default user model (one-one) to make Student and Instructor models. Login url : 'http://127.0.0.1:8000/'. The Login (Figure 1) and Signup (Figure 2) pages are shown below.

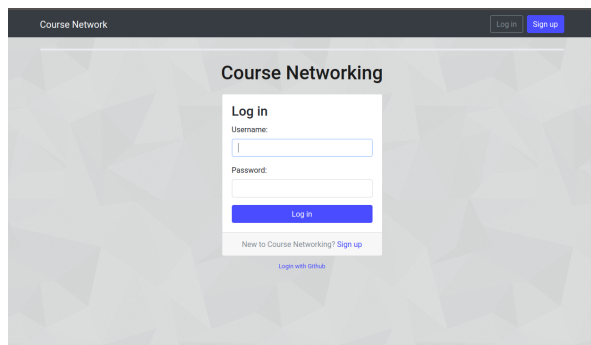


Figure 1: Login

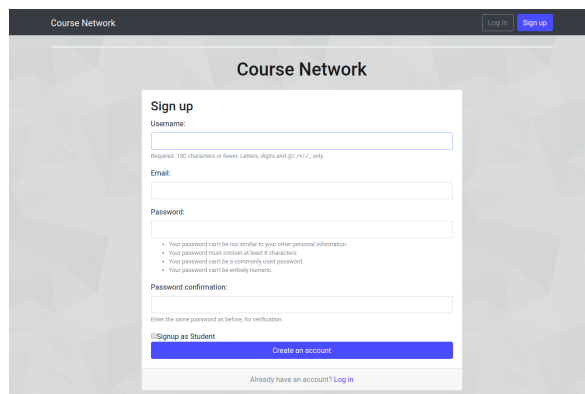


Figure 2: Signup

During signup after the above filling form user is shown a student or an instructor signup form after filling it he is redirected to homepage.

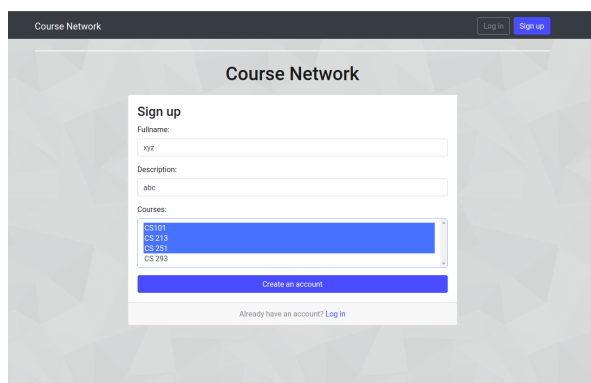


Figure 3: Student signup

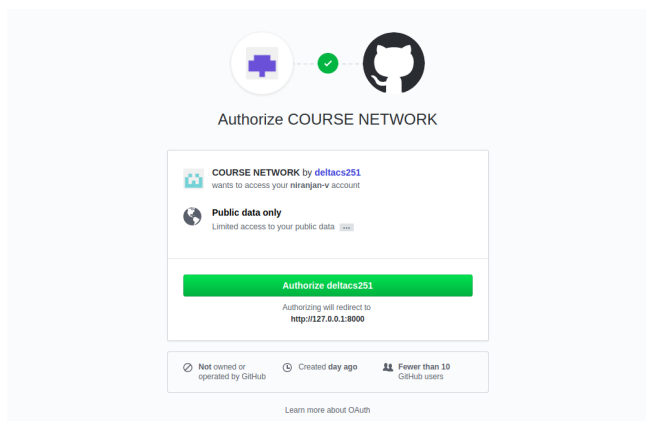


Figure 4: Git Signup

There is also an option for Git-Signup/Login (Figure 4)

## 5 Homepage

The homepages are different for student (Figure 5) and instructor(Figure 6). After login user is redirected to his corresponding home page. The courses taken (given) by student (instructor) are displayed.

In student home page, links to view his timetable, event calendar are displayed. Also notifications and links to feedback forms to be filled are displayed. When clicked on a notification, its detailed description is showed.

Course Network

niranjan-v

---

Courses

Course

CS 213  
DSA

CS 251  
SSL

CS 293  
DSA LAB

EE 101  
Intro to EE

Notifications

Event	Course	Deadline Date	Deadline Time
end sem	CS 251	Oct. 30, 2017	11:59 p.m.
Midsem	CS 251	Nov. 13, 2017	11:59 p.m.

Feedback

Feedback	Course	Time/Deadline
Midsem feedback	CS 293	Oct. 28, 2017

QUICK LINKS

- View timetable
- Calendar-Monthly View

[Fill out Feedback Form](#)

Figure 5: Student home

Course Network

suyash

---

Courses

Course

CS 213  
DSA

CS 293  
DSA LAB

CS 251  
SSL

CS101  
CS101

Figure 6: Instructor home

## 6 Student timetable

Student's timetable (Figure 7) is generated from Slot field the Courses he has taken up.

Course Network

niranjan-v

[Home](#) / [My timetable](#)

Day\Time	8:30-9:30	9:30-10:30	10:30-11:00	11:00-11:30	11:30-12:30	12:30-14:00	14:00-15:30	15:30-17:00
Monday	CS 293		CS 251			Lunch Break	CS 251	
Tuesday	CS 293	CS 251	CS 293			Lunch Break		CS 293
Wednesday		EE 101		EE 101		Lunch Break	EE 101	
Thursday	EE 101		CS 293			Lunch Break	CS 293	
Friday		EE 101		CS 251		Lunch Break	CS 293	EE 101

Figure 7: Timetable

## 7 Course homepage

The course homepages for Instructor (Figure 9) and Student (Figure 8) are shown below.

Course Network

niranjan-v

[Home](#) / [CS 293](#)

# CS 293

## DSA LAB

Instructor(s) for this course

Instructor

[suraj](#)

[ajit dhewan](#)

Notifications of CS 293

Event	Course	Deadline Date	Deadline Time
<a href="#">quiz 1</a>	CS 293	Oct. 28, 2017	noon
<a href="#">quiz 2</a>	CS 293	Oct. 28, 2017	11:59 p.m.
<a href="#">Assignment 2</a>	CS 293	Oct. 28, 2017	11:59 p.m.

### QUICK LINKS

- [View discussion forum](#)
- [View course resources](#)

### Participants of CS 293

[ajay](#)

[Jeevithiesh D](#)

[Team delta](#)

[V\\_niranjan](#)

[Niranjan Vaddi](#)

[kalyan](#)

Figure 8: Student course home

Course Network suyash

Home / CS 251

# CS 251

## SSL

Instructor(s) for this course

Instructor

[suraj](#)

[Suyash P Awate](#)

[Ajit Diwan](#)

Notifications of CS 251

Event	Course	Deadline Date	Deadline Time		
<a href="#">quiz 4</a>	CS 251	Oct. 26, 2017	11:59 p.m.	<a href="#">Edit</a>	<a href="#">Delete</a>
<a href="#">end sem</a>	CS 251	Oct. 30, 2017	11:59 p.m.	<a href="#">Edit</a>	<a href="#">Delete</a>
<a href="#">Midsem</a>	CS 251	Nov. 13, 2017	11:59 p.m.	<a href="#">Edit</a>	<a href="#">Delete</a>

**QUICK LINKS**

- [View discussion forum](#)
- [View course resources](#)
- [Add a New Event](#)
- [Add Feedback Form](#)
- [View Feedback](#)

**Students of CS 251**

[ajay](#)

[Jeevithiesh D](#)

[Team delta](#)

[V\\_nirnanjan](#)

[Niranjan Vaddi](#)

[kalyan](#)

Figure 9: Instructor course home

In course home page, the instructors for the course, the students who have taken up the course are showed (these are also links to their profiles). The events related to that course are displayed in this page. There are links to discussion forum and course resources page. Similarly in instructor page there are also options to add/edit/delete an event. Add feedback form, view responses.

## 8 Course resources

Instructor's course resources page is shown below. The download link for the resource is given

Course Network suyash

Courses / CS 251 / Resources

Resources

File description	Download link	Uploaded at
tutorial1	<a href="#">tutorial1_Oc8hXvJ.pdf</a>	Oct. 26, 2017, 4:30 p.m.
tutorial 2	<a href="#">tutorial2_ynH89jr.pdf</a>	Oct. 26, 2017, 4:30 p.m.
tut 3	<a href="#">l8.pdf</a>	Oct. 26, 2017, 4:40 p.m.

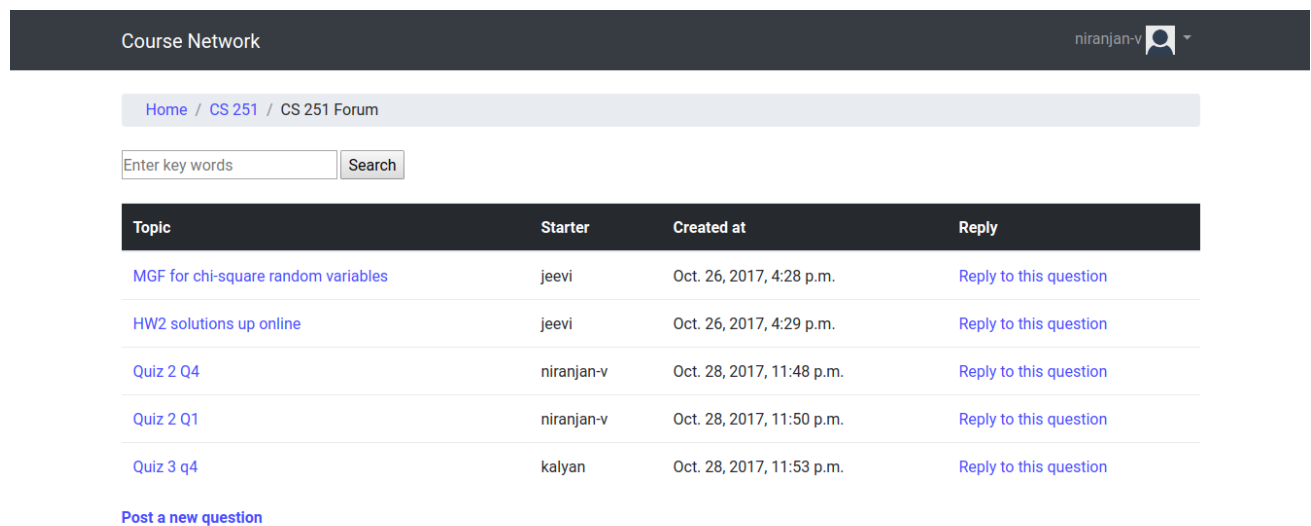
[Upload a new resource](#)

Figure 10: Course resources page

in the table. Student's page looks the same except that there is no upload a new resource link.

## 9 Discussion forum

In discussion forum page(Figure 26), the topics are displayed in a tabular format. There is a search feature (implemented using django filter). The search results page (Figure 12) is shown below.

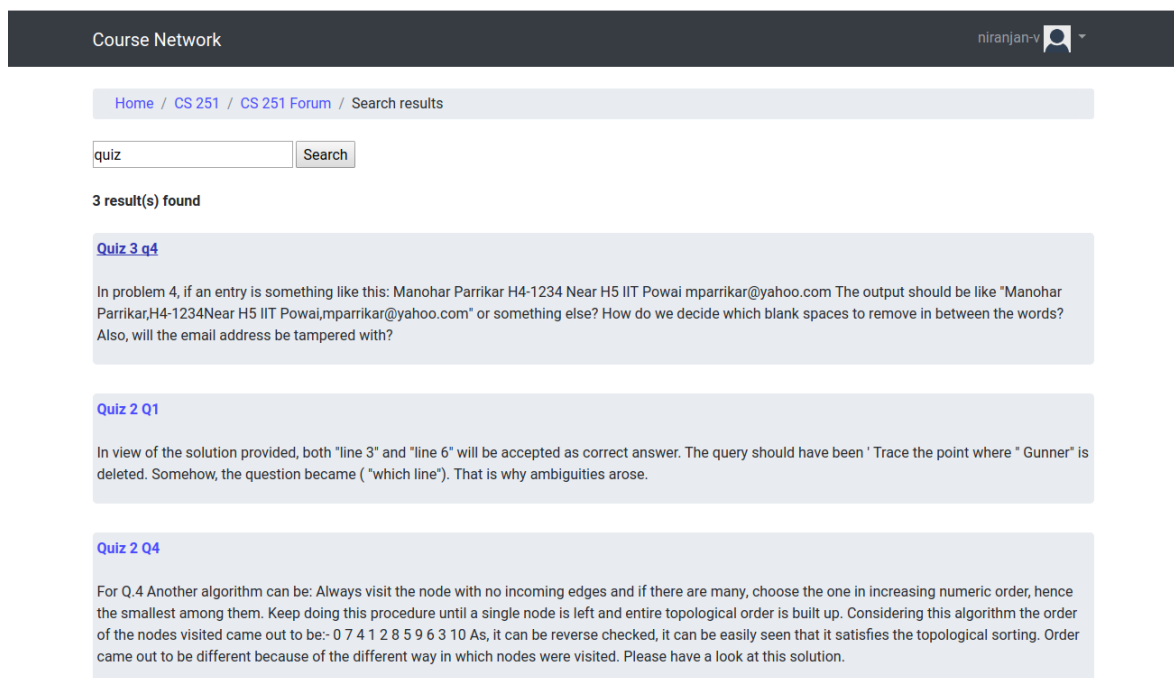


The screenshot shows the 'Course Network' header with a user profile 'niranjan-v'. The breadcrumb trail is 'Home / CS 251 / CS 251 Forum'. Below this is a search bar with the text 'Enter key words' and a 'Search' button. The main content is a table with four columns: 'Topic', 'Starter', 'Created at', and 'Reply'. The table lists five topics: 'MGF for chi-square random variables', 'HW2 solutions up online', 'Quiz 2 Q4', 'Quiz 2 Q1', and 'Quiz 3 q4'. Each row has a 'Reply to this question' link. At the bottom, there is a link 'Post a new question'.

Topic	Starter	Created at	Reply
<a href="#">MGF for chi-square random variables</a>	jeevi	Oct. 26, 2017, 4:28 p.m.	<a href="#">Reply to this question</a>
<a href="#">HW2 solutions up online</a>	jeevi	Oct. 26, 2017, 4:29 p.m.	<a href="#">Reply to this question</a>
<a href="#">Quiz 2 Q4</a>	niranjan-v	Oct. 28, 2017, 11:48 p.m.	<a href="#">Reply to this question</a>
<a href="#">Quiz 2 Q1</a>	niranjan-v	Oct. 28, 2017, 11:50 p.m.	<a href="#">Reply to this question</a>
<a href="#">Quiz 3 q4</a>	kalyan	Oct. 28, 2017, 11:53 p.m.	<a href="#">Reply to this question</a>

[Post a new question](#)

Figure 11: Forum page



The screenshot shows the 'Course Network' header with a user profile 'niranjan-v'. The breadcrumb trail is 'Home / CS 251 / CS 251 Forum / Search results'. Below this is a search bar with the text 'quiz' and a 'Search' button. The main content shows '3 result(s) found'. There are three search results, each with a title and a description. The first result is 'Quiz 3 q4' with a description about a problem involving a string and a query. The second result is 'Quiz 2 Q1' with a description about a solution involving a point where a gunner is deleted. The third result is 'Quiz 2 Q4' with a description about an algorithm for finding a node with no incoming edges.

Topic	Starter	Created at	Reply
<a href="#">Quiz 3 q4</a>			
<a href="#">Quiz 2 Q1</a>			
<a href="#">Quiz 2 Q4</a>			

Figure 12: Search results

When clicked on a topic, it takes to the page of that topic. In that page the question and the replies for that question are displayed (sorted by the number of upvotes for the reply) are displayed. And the instructor's reply is shown first mentioning it as an instructor's reply. For this page we have used Javascript to update the number of votes when user clicks on either of the buttons. Also we dynamically update this page every 30 seconds(this interval can be changed in the JS function).



Course Network

niranjan-v

[Home](#) / [CS 251](#) / [CS 251 Forum](#)

### MGF for chi-square random variables

Please note that the MGF for a chi-square random variable with  $n$  degrees of freedom, is defined only for  $t < 1/2$ . I have now added this statement in the slides for Families of Random Variables (download the slides from the class website again).

by : jeevi    Oct. 26, 2017, 4:28 p.m.

[Reply to this question](#)

License checkout error is being displayed currently due to a multitude of active users. We're unable to complete the first two questions.

Replied by : kalyan    Oct. 26, 2017, 4:31 p.m.

Upvote

4

Downvote

0

Then you have 2 options (and perhaps more): 1) Compute the information that the boxplot needs yourself and display that information using standard curve plots. For this you'd need to find percentiles (25, 50, 75) of the data within each "box" of the box plot. 2) Use some other software just to display the boxplot (python, SciLab, etc).

Replied by : kalyan    Oct. 26, 2017, 4:31 p.m.

Upvote

2

Downvote

2

Use octave it is very similar to MATLAB

Replied by : niranjan-v    Oct. 28, 2017, 11:55 p.m.

Upvote

0

Downvote

0

[Post a new question](#)

Figure 13: Topic page

Course Network

suraj

[Home](#) / [CS 251](#) / [CS 251 Forum](#) / [CS 251 Forum](#)

### MGF for chi-square random variables

Please note that the MGF for a chi-square random variable with  $n$  degrees of freedom, is defined only for  $t < 1/2$ . I have now added this statement in the slides for Families of Random Variables (download the slides from the class website again).

by : jeevi    Oct. 26, 2017, 4:28 p.m.

[Reply to this question](#)

**INSTRUCTOR REPLY**

Try Python or R or octave. There will be a class on: Thu 5:30 pm - 7 pm, Oct 5 (this week) LH-101. Also, the assignment has been posted on moodle. Best Suraj

Replied by : suraj    Oct. 29, 2017, 1:13 p.m.

License checkout error is being displayed currently due to a multitude of active users. We're unable to complete the first two questions.

Replied by : kalyan    Oct. 26, 2017, 4:31 p.m.

Upvote

4

Downvote

0

Then you have 2 options (and perhaps more): 1) Compute the information that the boxplot needs yourself and display that information using standard curve plots. For this you'd need to find percentiles (25, 50, 75) of the data within each "box" of the box plot. 2) Use some other software just to display the boxplot (python, SciLab, etc).

Replied by : kalyan    Oct. 26, 2017, 4:31 p.m.

Upvote

3


Downvote

1

Figure 14: Instructor's reply shown first

There are options to post a new topic(for student only) and reply for a question in the forum page and the topic page.

Course Network

kalyan 

[Courses](#) / [CS 251](#) / [CS 251 Forum](#) / New topic

### Start a New Topic


Brief

Subject

Post

Figure 15: New Topic

Course Network

kalyan 

[Courses](#) / [CS 251](#) / [CS 251 Forum](#) / New topic

### New reply

Answer


Post

Figure 16: New reply

## 10 My Drive

User's My Drive page (Figure 17) and upload page (Figure 18) are shown below.

Course Network

kalyan 

[Home](#) / [My drive](#)

My Drive

File description	Download link	Uploaded at
full syllabus	<a href="#">Project_Proposal_Report.aux</a>	Oct. 29, 2017, 8:22 a.m.

[Upload a new resource](#)

Figure 17: My drive

The screenshot shows the 'Upload Resource' form in the Course Network interface. The form is centered on a light gray background with a subtle geometric pattern. At the top, there is a dark header bar with 'Course Network' on the left and a user profile 'kalyan' with a small avatar on the right. Below the header, a breadcrumb trail reads 'Home / My drive / Upload'. The form itself is a white box with a title 'Upload Resource'. It contains a 'Description:' label followed by a text input field. Below that is a 'Document:' label followed by a file selection area that includes a 'Choose file' button and the text 'No file chosen'. At the bottom of the form is a large blue 'Submit' button.

Figure 18: Upload

Every User has their own personal drive where he can upload files

## 11 User Profile

User's Profile page (Figure 23) and Edit Profile page (Figure 24) are shown below.

The screenshot shows the 'My Profile' page in the Course Network interface. The page has a dark header bar with 'Course Network' on the left and a user profile 'kalyan' with a small avatar on the right. Below the header, there is a large profile picture of a man with glasses and a blue shirt. Under the picture is a section titled 'My Profile' which contains a list of user details in a two-column format. The details are: Username: kalyan, Full name: kalyan, Email: niranjan@niranjan.com, Description: kalyan, Phone: 0, City: , Website: http://127.0.0.1:8000/student/profile/edit, and Courses Undertaken: CS101 CS 213. At the bottom left of the profile section is an 'Edit Profile' button.

Username:	kalyan
Full name:	kalyan
Email:	niranjan@niranjan.com
Description:	kalyan
Phone:	0
City:	
Website:	http://127.0.0.1:8000/student/profile/edit
Courses Undertaken:	CS101 CS 213

Figure 19: My Profile

The screenshot shows the 'Edit Profile' form in the Course Network application. The form is centered on a page with a 'Home' header. The form fields include: Fullname (text input with 'kalyan'), Description (text input with 'kalyan'), Website (text input with 'http://127.0.0.1:8000/student/profile/edit'), Phone (text input with '0'), City (text input), Image (currently 'documents/kalyan2.jpg' with a 'Clear' button), and a 'Change' section with a 'Choose file' button and 'No file chosen' text. A blue 'Submit' button is at the bottom of the form.

Figure 20: Edit Profile

My Profile contains Fields of Username ,Full name, Email, Description,Phone,City,Website and Courses Undertaken.

Edit Profile contains edit Fields of Fullname,website,description,phone,city and profile image

The screenshot shows the 'Course Info' page for 'CS 213 DSA'. The page has a dark header with 'Course Network' and a user profile 'kalyan'. The main content area shows the course title 'CS 213' and 'DSA'. Below this, there is a section for 'Instructor(s) for this course' with a dark bar labeled 'Instructor'. The instructors listed are 'suraj' and 'suyash awle'.

Figure 21: Course Info page

On clicking a course in Courses Undertaken we get info in this way as above.

The screenshot shows a user profile page titled 'Course Network' in the top header. The user's name 'kalyan' is in the top right corner. The profile section includes a default silhouette icon and a 'My Profile' tab. Below the tab, the following details are listed:

Username:	ajit
Full name:	ajit dhewan
Email:	niranjan@niranjan.com
Description:	prof at stats
Phone:	None
City:	
Website:	
Courses Undertaken:	<a href="#">CS 293</a> <a href="#">CS 251</a> <a href="#">CS101</a>

Figure 22: Profile page

Other Profiles can be viewed through their id's and we have used default profile image as shown.

## 12 Events

Events of a Course are Created by it's Instructor with name,description,deadline time and date, and they appear in the notifications of students and also in instructor's homepage

The screenshot shows the 'Add Event' form within the 'Course Network' interface. The top header shows 'Course Network' and the user 'suraj'. A breadcrumb trail indicates 'Home / CS101'. The form itself is titled 'Add Event' and contains the following fields:

- Name:
- Deadline date:
- Deadline time:
- Description:

A blue 'Add Event' button is located at the bottom of the form.

Figure 23: Add Event

Course Network

suraj

Home

### Edit Event

Name:

Deadline date:

Deadline time:

Description:

Submit

Figure 24: Editing Event

Course Network

suraj

Home / CS101

# CS101

## CS101

Instructor(s) for this course

Instructor

suraj

ajit dhewan

Notifications of CS101

Event	Course	Deadline Date	Deadline Time		
test	CS101	Oct. 30, 2017	11:59 p.m.	<a href="#">Edit</a>	<a href="#">Delete</a>
test2	CS101	Oct. 26, 2017	11:59 p.m.	<a href="#">Edit</a>	<a href="#">Delete</a>

**QUICK LINKS**

- [View discussion forum](#)
- [View course resources](#)
- [Add a New Event](#)
- [Add Feedback Form](#)
- [View Feedback](#)

**Students of CS101**

kalyan

ajay

Jeevithiesh D

Team delta

V\_niranjan

Figure 25: Display of event in instructor's page

Instructor can edit/delete the event in the course's homepage and in same way events are displayed in student's home page with no edit,delete option sorted in deadlinetime order  
Cicking on an event it redirects to event info containing information about event

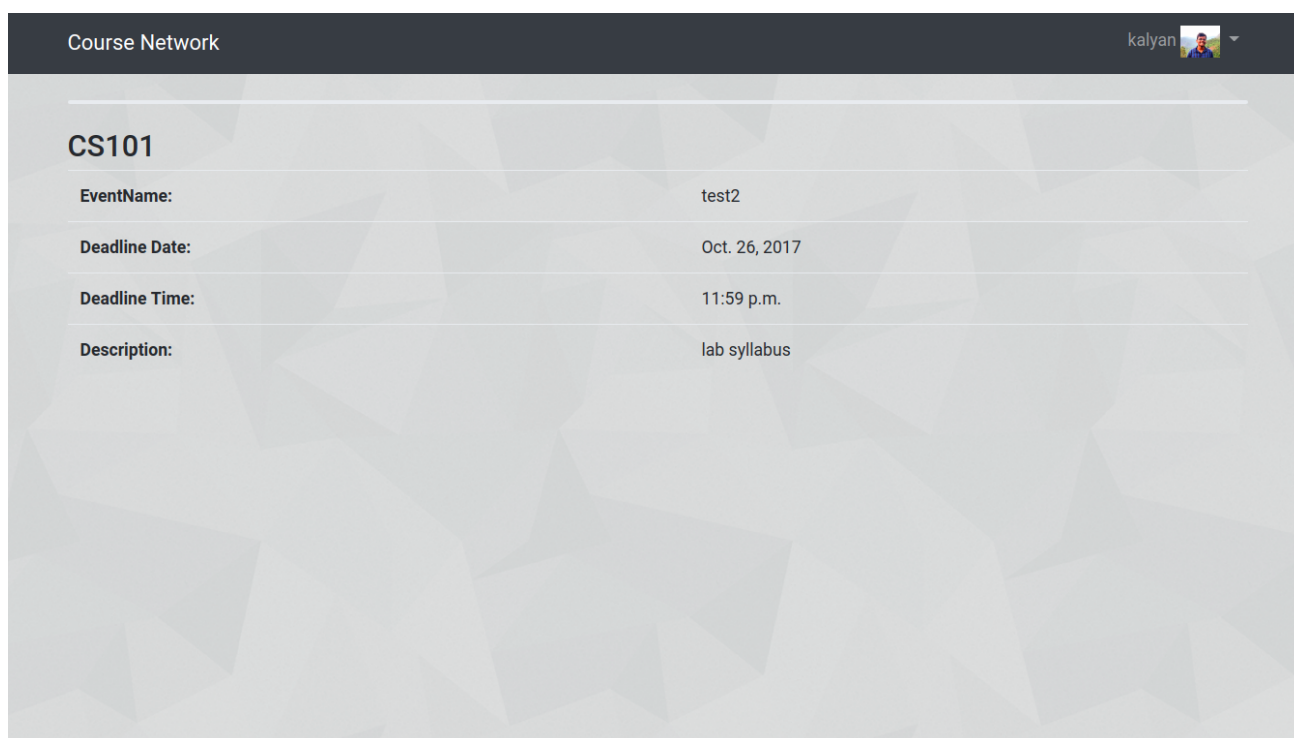


Figure 26: Event details page

## 13 Calendar

Student's Calendar is generated from Event Deadlines of the Courses he has taken up.

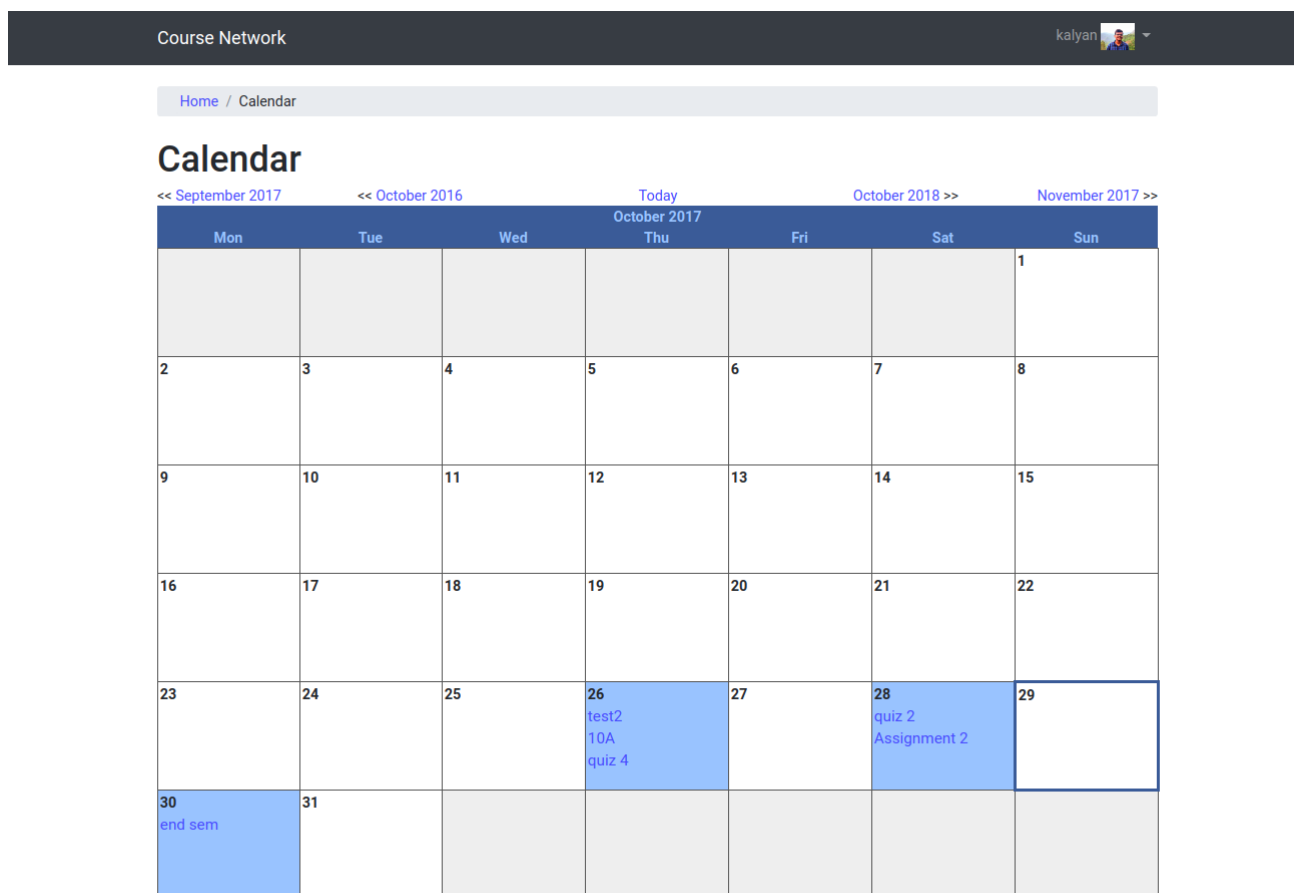


Figure 27: Timetable

- Each Day contain all its events listed
- On clicking an event we get redirected to event info page
- If a day contains events its highlighted in blue
- Today is bordered with blue as shown
- we can access other months events through navigation above

## 14 Feedback

The instructor can add a feedback form with subjective and objective questions.

Activities Google Chrome Sun 13:11

CS2511 Niranjan https:// project project Project YouTube Assign addFee Course Suraj

127.0.0.1:8000/instructor/1/addFeedback

Apps Academic Entertainment Mail, Google Shopping torrents programming Instructive Project books Foot Problem Notebooks

Deadline time: 23:59

Rating Question 1:

Enter Question Here

Subjective Question 1:

Enter Question Here

Subjective Question 2:

Please fill in this field.

Enter Question Here

Rating Question 2:

Enter Question Here

Subjective Question 3:

Enter Question Here

Subjective Question 4:

Enter Question Here

Rating Question 3:

Enter Question Here

Add Rating Question Add Subjective Question

Submit

Figure 28: Add Feedback Form

The student must fill the form and submit it. If a student submits a form more than once, his/her responses will be overwritten.



Question:Rate difficulty of question paper

Your Response:

☒ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Question:Rate quality of questions

Your Response:

☐ 1 ☐ 2 ☒ 3 ☐ 4 ☐ 5

Question:Additional comments

Your Response:

The paper was balanced.

[Submit](#)

Figure 29: View Feedback

The instructor can then view the collected responses. The answers are anonymous and the rating answers are shown in the form of a graph.

## 15 Site setup and maintenance by admin

We have used default django admin in this project. To create a an admin (superuser), go to main directory of project and run this command: 'python3 manage.py createsuperuser'  
 Next run this command : 'python3 slot\_setup.py' - this command create some Slot instances we've used in this project.  
 admin login page - <http://127.0.0.1:8000/admin/login>

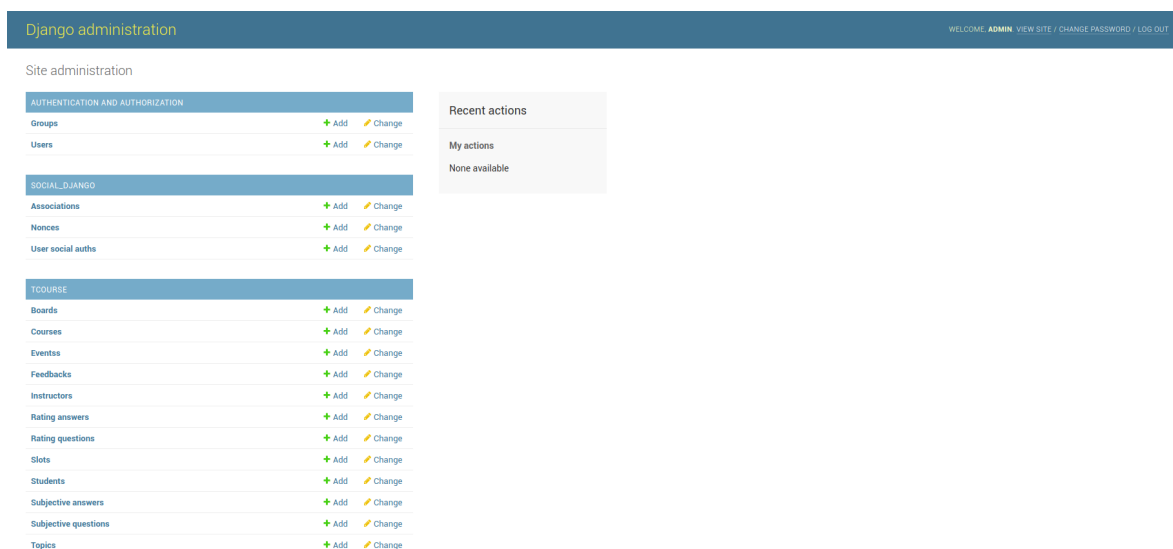


Figure 30: Admin home page

We have registered some models in admin.py file, so that the admin can **view/edit/add/delete**

instances of these models. To create a course, go to Courses model, click on add Course, enter Course name and description ,select instructor and slot from available instances of those. Also admin has to create a Board model (for discussion forum) for this Course, which can be done in a similar fashion.

The screenshot shows the 'Add course' form in the Django administration interface. The header bar is blue with 'Django administration' on the left and 'WELCOME, ADMIN VIEW SITE / CHANGE PASSWORD / LOG OUT' on the right. Below the header is a breadcrumb trail: 'Home > Tcourse > Courses > Add course'. The form itself is titled 'Add course' and contains three main sections: 'Name:' with a text input containing 'EE 101', 'Description:' with a text input containing 'Intro to EE', and 'Teacher:' with a multi-select dropdown menu showing 'suraj', 'suyash', and 'ajit'. Below the teacher selection is a small instruction: 'Hold down "Control", or "Command" on a Mac, to select more than one.' The 'Slot:' section has a multi-select dropdown menu showing '7B', '18A', '17A', '16A', '6B', and '15A'. Below this is another instruction: 'Hold down "Control", or "Command" on a Mac, to select more than one.' At the bottom right of the form are three buttons: 'Save and add another', 'Save and continue editing', and 'SAVE'.

Figure 31: Creating a course

The screenshot shows the 'Add board' form in the Django administration interface. The header bar is blue with 'Django administration' on the left and 'WELCOME, ADMIN VIEW SITE / CHANGE PASSWORD / LOG OUT' on the right. Below the header is a breadcrumb trail: 'Home > Tcourse > Boards > Add board'. The form is titled 'Add board' and contains three main sections: 'Name:' with a text input containing 'EE 101 Forum', 'Description:' with a text input containing 'Discussion forum', and 'Course:' with a dropdown menu showing 'EE 101' and a green plus icon. At the bottom right of the form are three buttons: 'Save and add another', 'Save and continue editing', and 'SAVE'.

Figure 32: Creating a board

Setting up git-hub login service:

Step1: Go to <https://github.com/settings/applications/new>

give the url of your homepage

Step2: Authorization callback URL: `your_homepage_url/oauth/complete/github/`

Step3: Get Client ID and Client secret

Step4: In your `project-2/mysite/settings.py` add this:

`SOCIAL_AUTH_GITHUB_KEY = <Client ID>`

`SOCIAL_AUTH_GITHUB_SECRET = <Client secret>`

Now we are all set. To start server run: `'python3 manage.py runserver'`

## 16 Features

Promised	Delivered
Allowing instructor to sign up through social media account	Instructor can signup/login through github
Feedback forms	Feedback forms with subjective and rating questions
Calendar	Monthly Calendar with events displayed with hyperlinks.
Profile of individual(instructor and student)	Each user has a profile
Notifications	Students see events in their homepage when an instructor creates them
Timetable generation for a particular student	Student's weekly timetable based on his/her courses
Discussion forum with votes, comments and special status for instructor	Everything mentioned, and real time changes in the forum
Uploading of files	Personal drive for all users and Instructor can upload resources visible to everybody

Apart from these, we have been able to develop these extra features:

- Search in Discussion Forum
- Graphical feedback viewing for instructor
- User can see changes in topic view page without refreshing ie page is dynamically updated without actually refreshing it