Presentation Evaluation Tool

Objective: To reduce professor's time consumption for his presentation evaluation works

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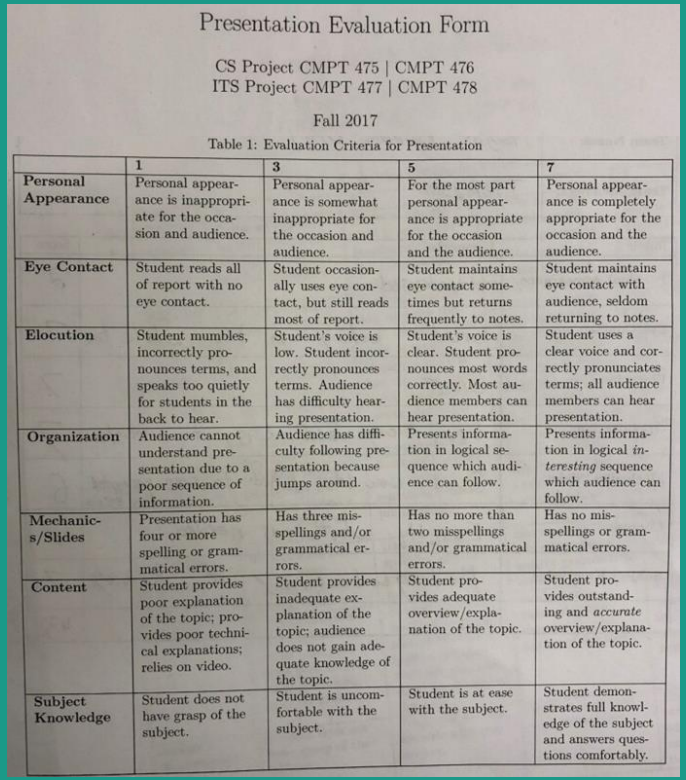
Outline

1. The Problem to solve
2. Planning & Requirement Analysis
3. Design
4. Development
5. Demo
6. Questions

1. The Problem

Usage of Paper for Presentation Evaluation



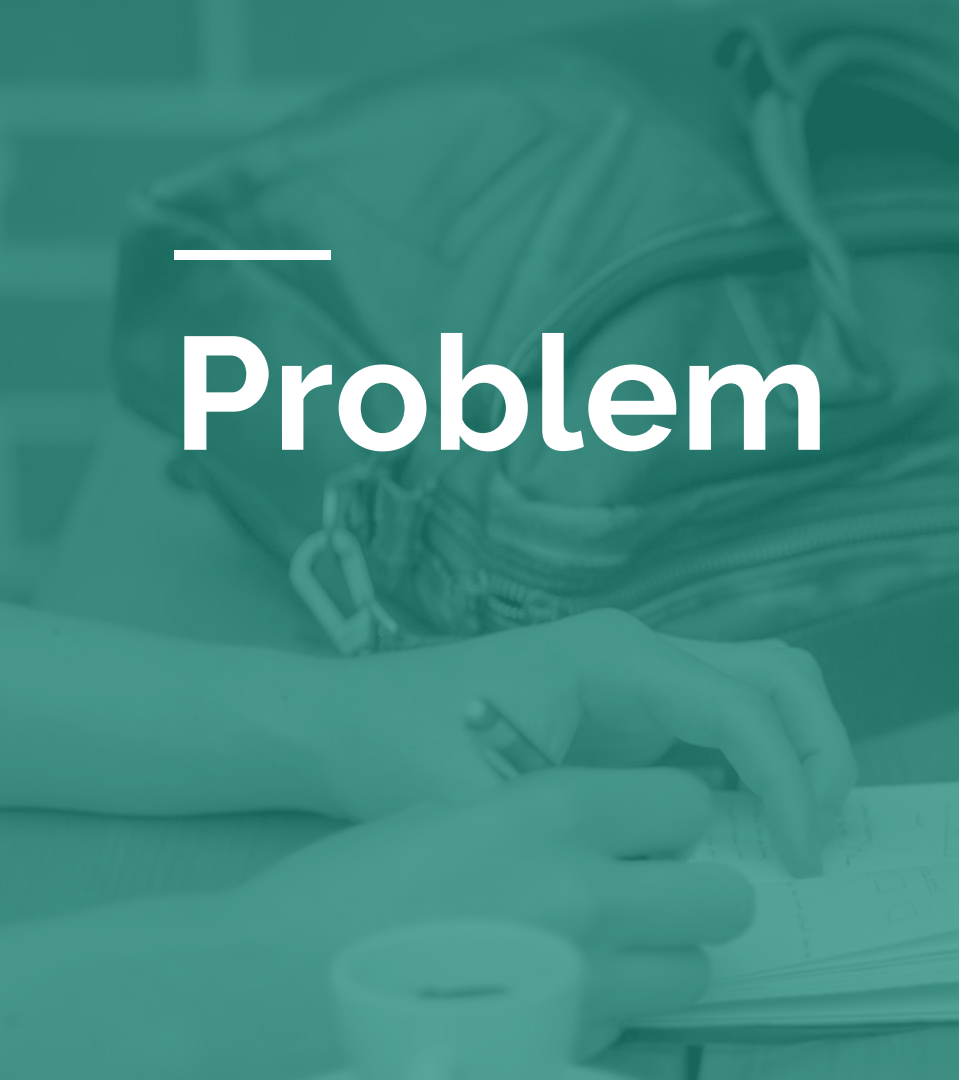
Presentation Evaluation Form

CS Project CMPT 475 | CMPT 476
ITS Project CMPT 477 | CMPT 478

Fall 2017

Table 1: Evaluation Criteria for Presentation

	1	3	5	7
Personal Appearance	Personal appearance is inappropriate for the occasion and audience.	Personal appearance is somewhat inappropriate for the occasion and audience.	For the most part personal appearance is appropriate for the occasion and the audience.	Personal appearance is completely appropriate for the occasion and the audience.
Eye Contact	Student reads all of report with no eye contact.	Student occasionally uses eye contact, but still reads most of report.	Student maintains eye contact sometimes but returns frequently to notes.	Student maintains eye contact with audience, seldom returning to notes.
Elocution	Student mumbles, incorrectly pronounces terms, and speaks too quietly for students in the back to hear.	Student's voice is low. Student incorrectly pronounces terms. Audience has difficulty hearing presentation.	Student's voice is clear. Student pronounces most words correctly. Most audience members can hear presentation.	Student uses a clear voice and correctly pronunciates terms; all audience members can hear presentation.
Organization	Audience cannot understand presentation due to a poor sequence of information.	Audience has difficulty following presentation because jumps around.	Presents information in logical sequence which audience can follow.	Presents information in logical *interesting* sequence which audience can follow.
Mechanics/Slides	Presentation has four or more spelling or grammatical errors.	Has three misspellings and/or grammatical errors.	Has no more than two misspellings and/or grammatical errors.	Has no misspellings or grammatical errors.
Content	Student provides poor explanation of the topic; provides poor technical explanations; relies on video.	Student provides inadequate explanation of the topic; audience does not gain adequate knowledge of the topic.	Student provides adequate overview/explanation of the topic.	Student provides outstanding and *accurate* overview/explanation of the topic.
Subject Knowledge	Student does not have grasp of the subject.	Student is uncomfortable with the subject.	Student is at ease with the subject.	Student demonstrates full knowledge of the subject and answers questions comfortably.



Problem

Usage of Paper for Presentation Skills evaluation

Time

- Reducing the efforts of professors time
- Print out
- Distribution of evaluation papers to students

Resource

- Paper
- Printer (electricity, printing ink)
- Money (to buy paper, printer, writing pen/pencil)

Data remains data

- Presenter unable to keep track of received data
- Unable to compare all students' marks in real time efficiently.
- Peer-to-peer review is hard (if applicable)
- Data analysis over different students' presentation skills

Labor

- Manually input the presenter's final evaluated scores into iLearn
- Have to collect the returned papers and calculate the marks

Solution Proposal

Solution description

Using a Secure Progressive Web Application to record and keep track of the evaluation points over the presenters' presentation.

Why it's better than existing Paper Usage

Security

- All data are securely stored using AES algorithm and SHA. Professor's password will be used as key to unlock the encrypted data

Time

- All the evaluators can fill out the evaluation online in real time at ease

Resource

- Avoiding the use of paper and thus saving natural resources, printer and thus saving money being spent

Data remains data

- Professor can now have a better insights of the presenters' marks
- Presenters' can review their marks and comments anytime in future at ease
- Data analysis over presenter's attributes can be done.

Labor

- All the evaluated data is recorded in real time and thus removing professor's painful manual entry

2. Planning & Requirement Analysis

What's the Planning and Requirement

Objective:

- To reduce the efforts taken by the professors for presenters' presentation evaluation
- To get better data insights over the received marks of the presenter
- To keep track or review the received marks by Presenter

Requirements / Specsheet:

- A way to avoid aforementioned problems in real time at ease - This can be done in Web or Mobile app using the 'Presentation Evaluation Tool' project concept.
- End User: Professor, Presenter and Rosters
- Have to choose either web or mobile or both platform
- Security features implementation
- Language Selection
- Frontend Backend Libraries Hosting website

Software Requirements

Project Tech Stack Information

Platform: Web Application

Language Specification:

- Frontend languages
- Django-2.0.4
- Python-3.6.5
- Sqlite3

Security Implementation

- SHA2
- AES
- Pyaes-1.6.1 - python library

IDE

- Pycharm

3. Design

Design - Frontend

shortNotes

- Usual front end languages usage.
- Django’s MVC programming

Design - Backend - DB designing

shortNotes

- **My Aim:** to reduce database data redundancy and to have a consistent data integrity
- Used Bridge or Junction Methodology and Normalization concepts to achieve my aim

Design - Backend - Data Storage in DB

Password data storage:

- SHA-256 hashing algorithm is used to match the passwords of the user. Please refer the implementation in the image below.
- This hashed value “password_stored_in_db” will be stored in DB

```
>>> import hashlib
>>> student_username = "vivek@marist.edu"
>>> student_password = "mypassword"
>>> password_stored_in_db = hashlib.sha256(student_password.encode('UTF-8')).hexdigest()
>>> print(password_stored_in_db)
89e01536ac207279409d4de1e5253e01f4a1769e696db0d6062ca9b8f56767c8
>>>
```

Design - Backend - Data Storage in DB

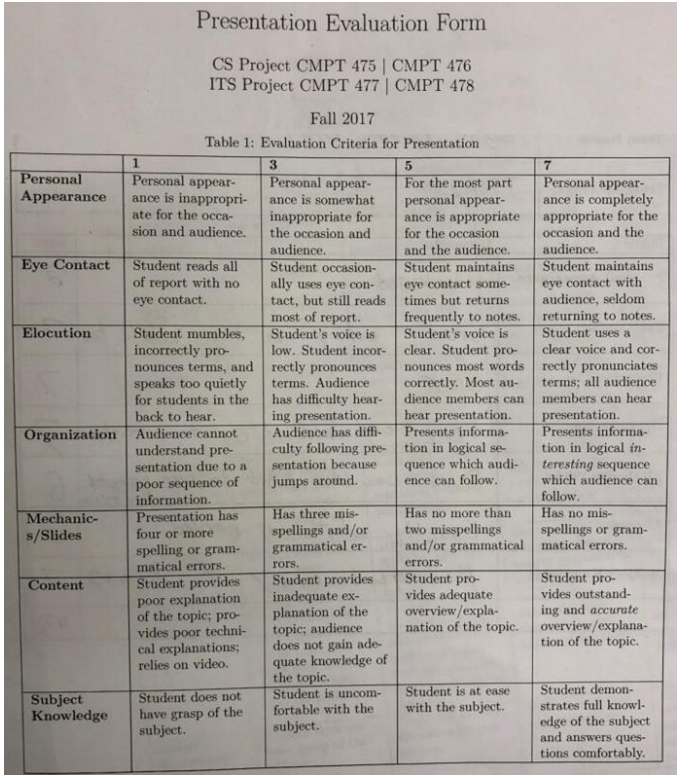
Evaluated data storage:

- AES algorithm is used to encrypt the inputted evaluation data (this is considered to be plaintext_data) where Professor's password will be used as key to encrypt and store this encrypted data in the DB. (Kindly refer the img)
- Decryption done and showed accordingly using professor's password as key.

```
>>> import pyaes
>>> key = "kkkkkkkkkkkkkkkk".encode('UTF-8')
>>> len(key)
16
>>> aesencryption_object = pyaes.AESModeOfOperationCTR(key)
>>> plaintext_data = "This is the plain text data to be encrypted"
>>> ciphertext_to_be_stored_in_db = aesencryption_object.encrypt(plaintext_data)
>>> print("aesencyyption_object: " + str(aesencryption_object) + " | plaintext_data: ", plaintext_data, " | ciphertext_to_be_stored_in_db: ", ciphertext_to_be_st
ored_in_db)
aesencyyption_object: <pyaes.aes.AESModeOfOperationCTR object at 0x0646C1F0> | plaintext_data:  This is the plain text data to be encrypted  | ciphertext_to_be_s
tored_in_db:  b'd\xaf\x14p\xcbU\x8e\xb5\xca\xcd\x00\xe4\x946\xbd\xba\xac\x1fJ\xfe}A\xe2\xfc\x94\r\x9e\x8a\xb5U\x0c\x13h\xc1\xc1\x98i\x88\x15IO\x9c\x8b'
>>>
>>>
>>> aesdecryption_object = pyaes.AESModeOfOperationCTR(key)
>>> decrypted_data_from_ciphertext_in_db = aesdecryption_object.decrypt(ciphertext_to_be_stored_in_db)
>>> print(decrypted_data_from_ciphertext_in_db.decode())
This is the plain text data to be encrypted
>>>
>>> print(aesdecryption_object)
<pyaes.aes.AESModeOfOperationCTR object at 0x0647DFD0>
>>>
```

Wireframes

Wireframes - specSheet Content



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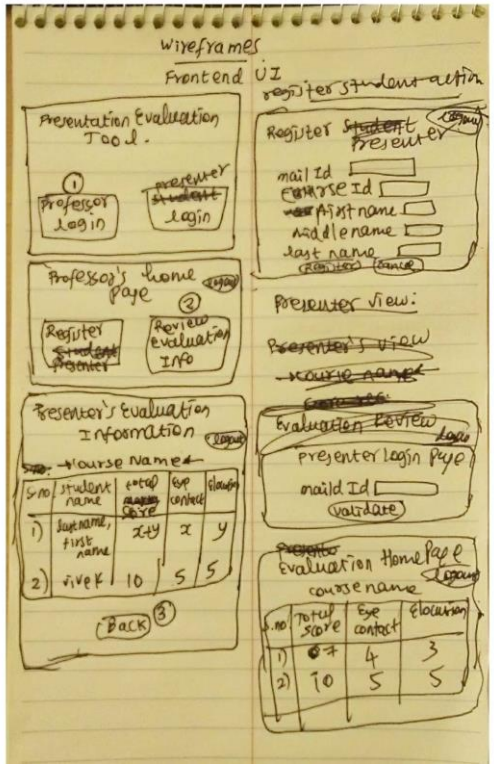
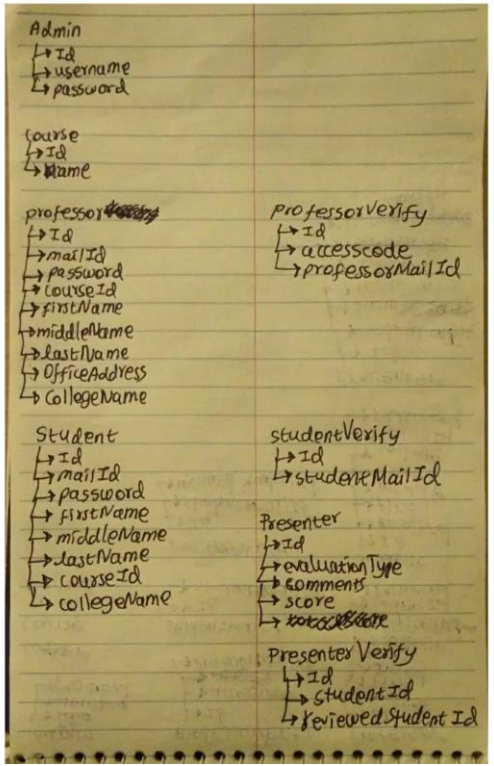
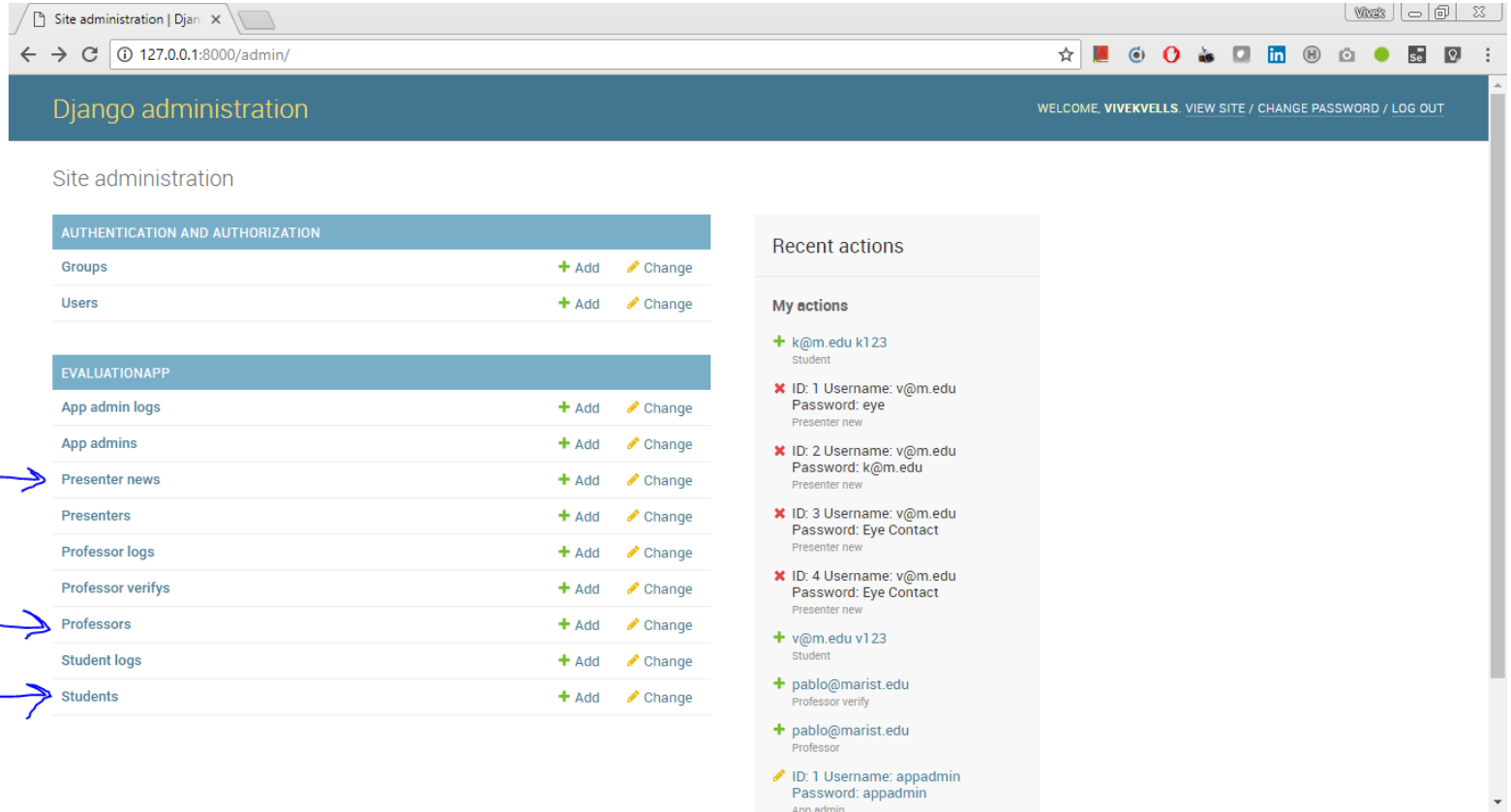


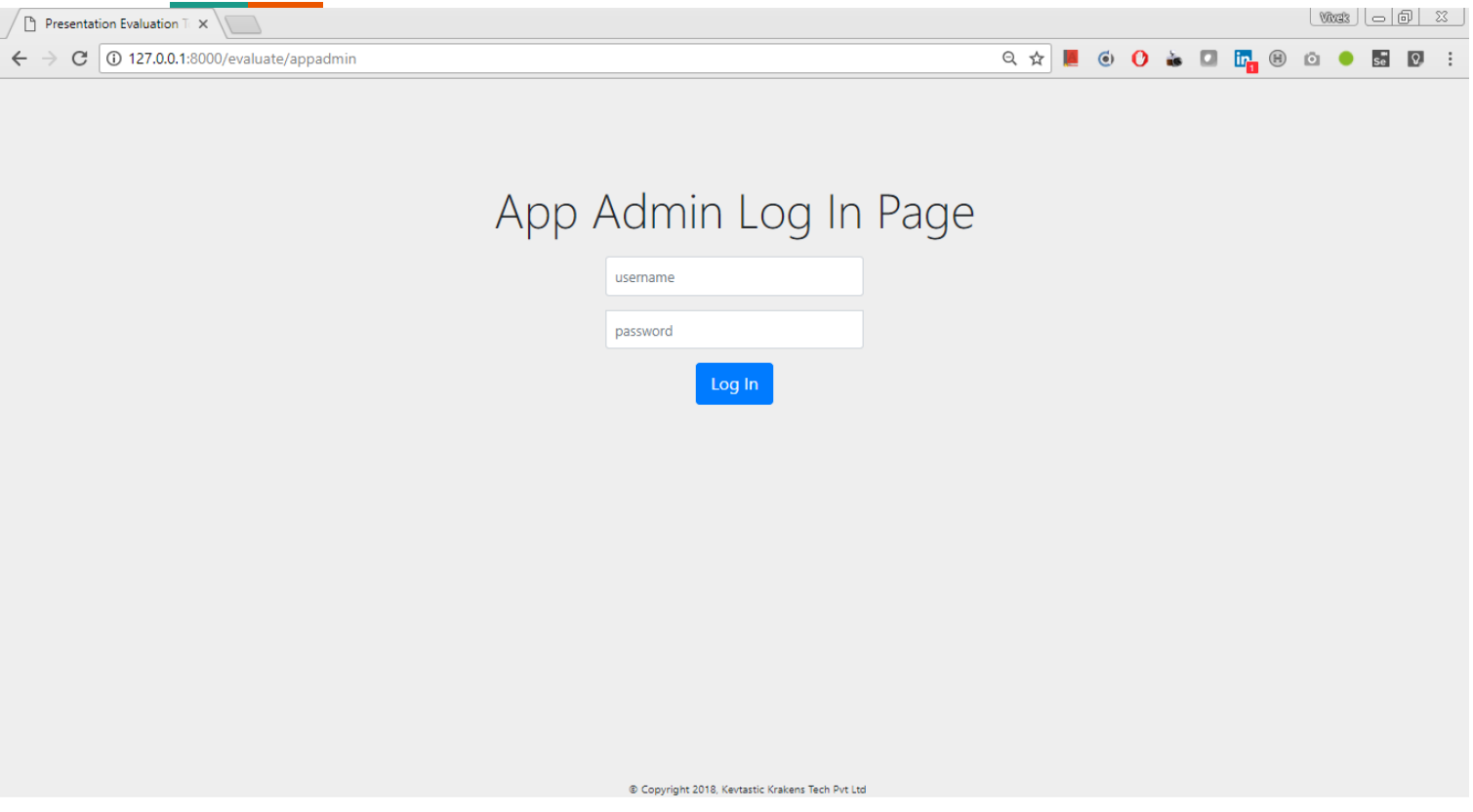


4. Development

Backend - Django Models



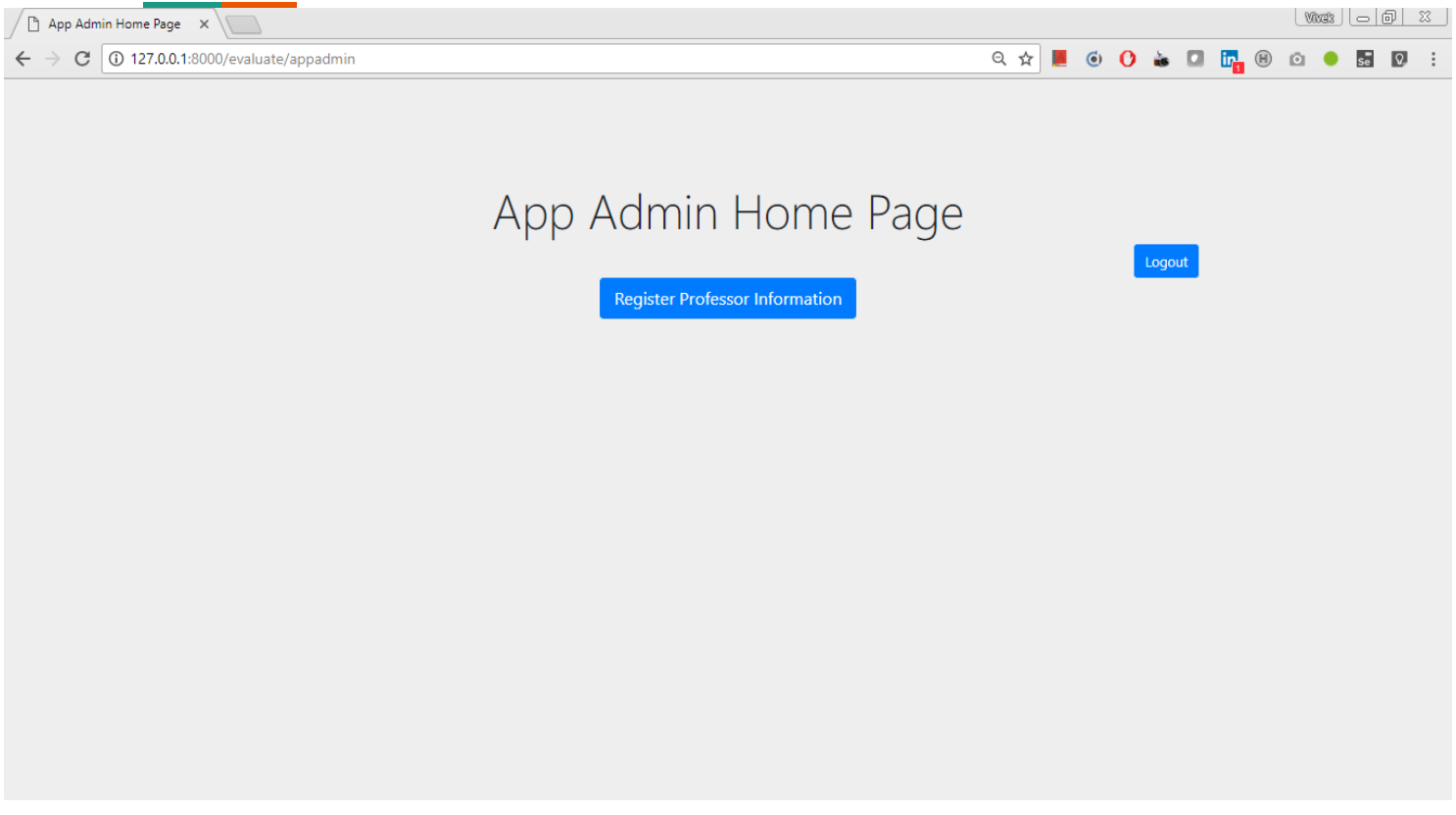
Website UI - App Admin



App Admin

- To register and maintain the professor's login information

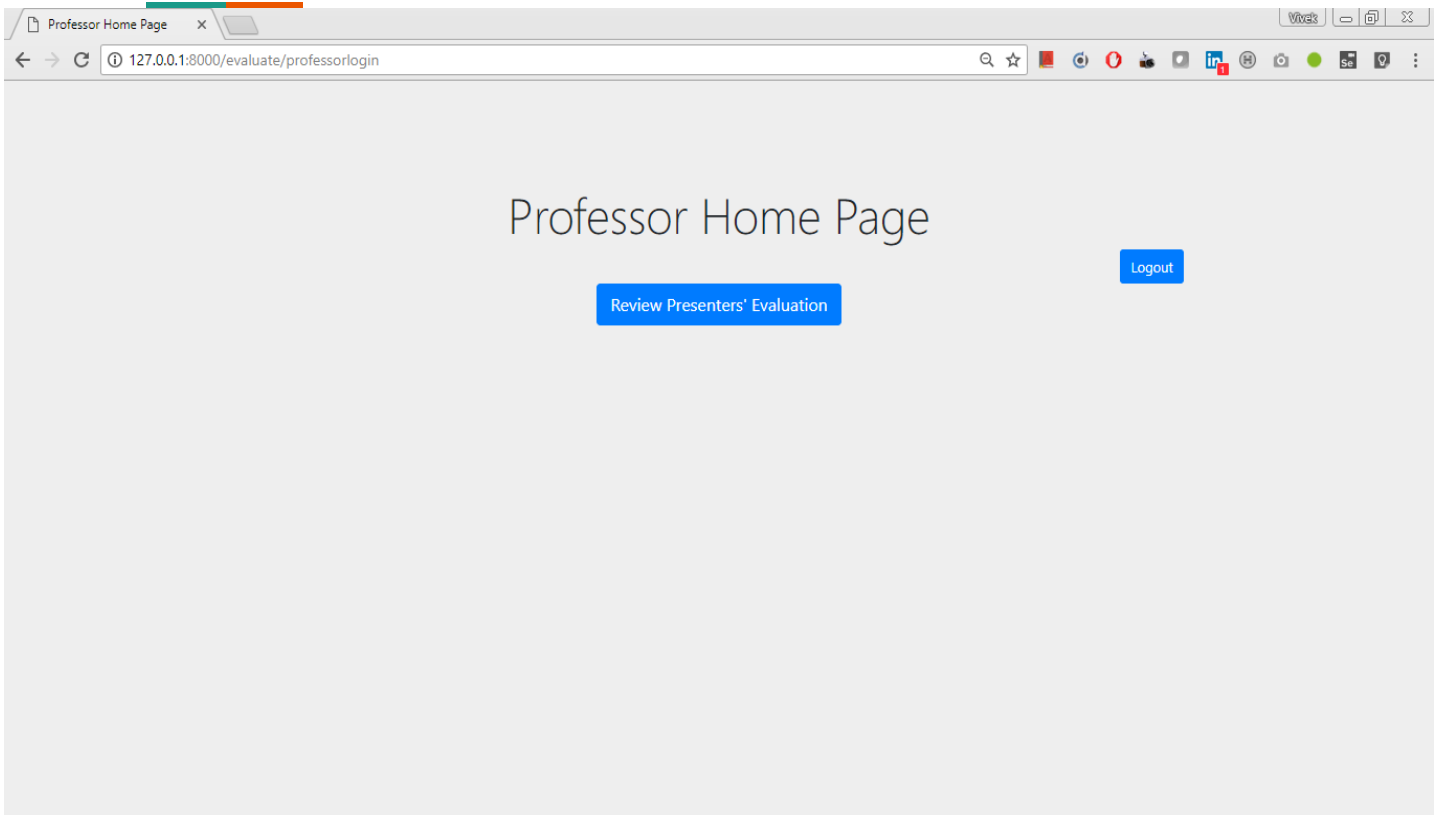
Website UI - App Admin



App Admin

- To register and maintain the professor's login information

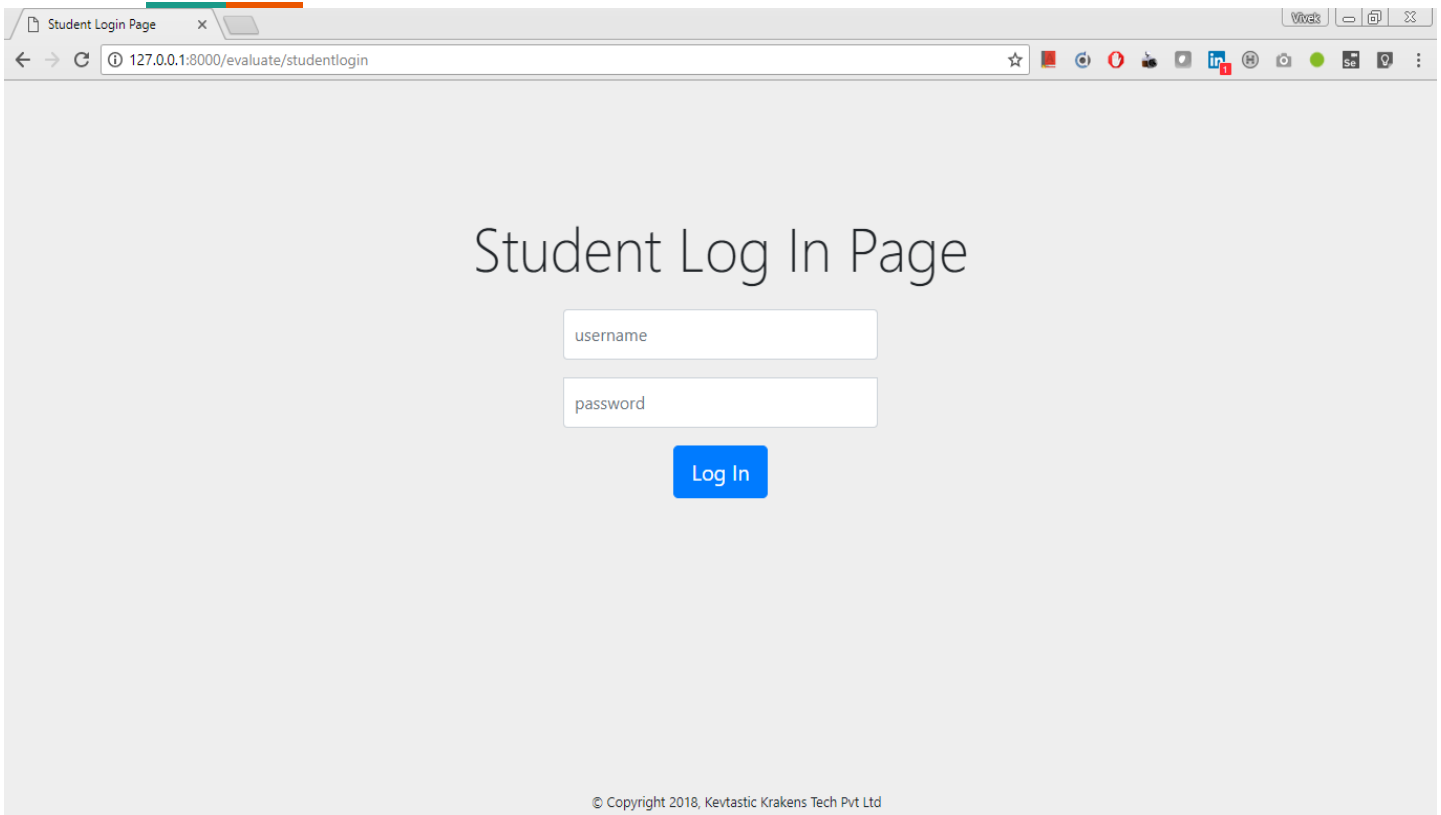
Website UI - Professor Home Page



Professor Page

- To review presenter's evaluation remarks
- To keep track of the presenter's score

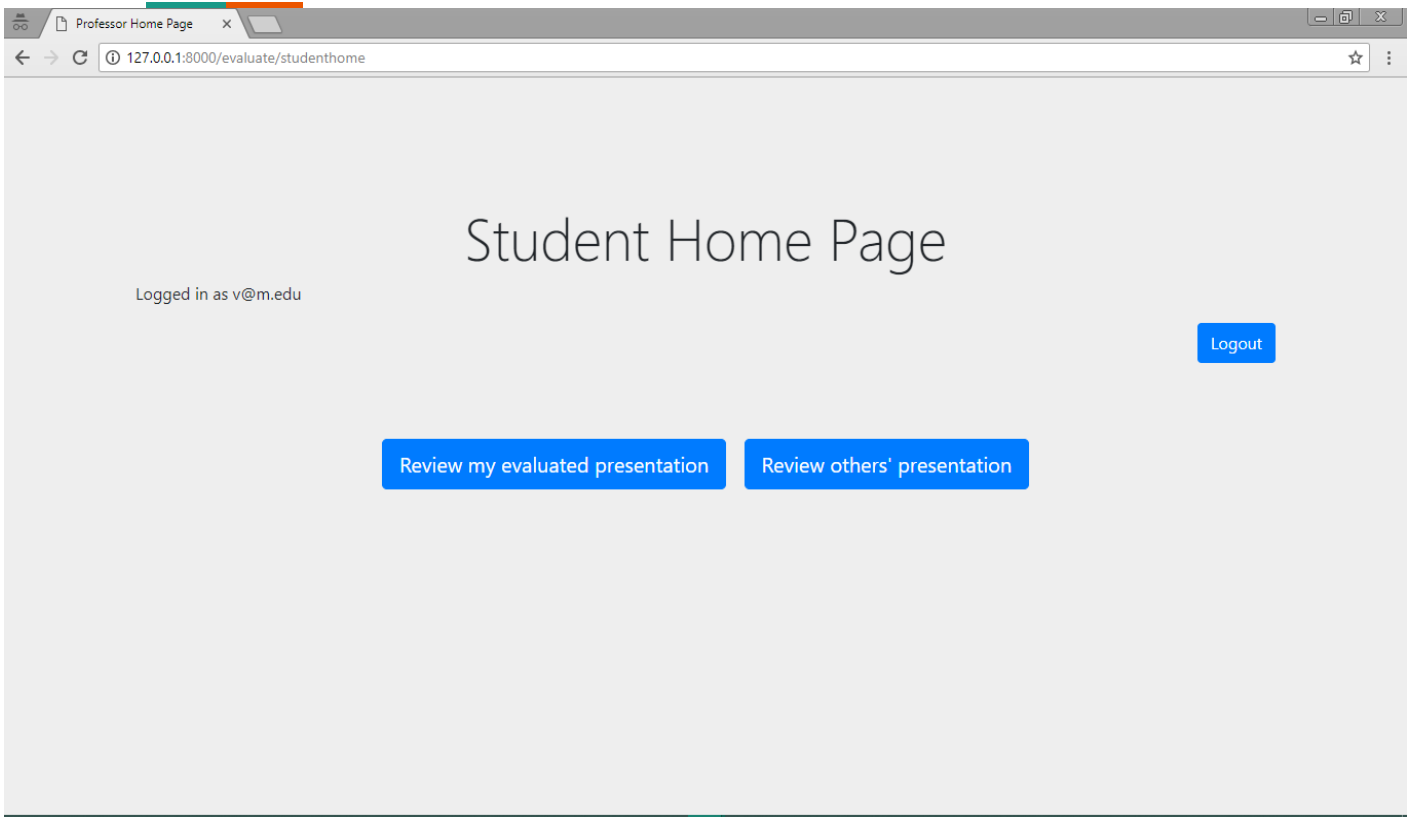
Website UI - Student Login Page



Student Page

- To login using student's credentials
- To evaluate other's presentation skills or to review the received evaluation remarks from his/her peers/professor

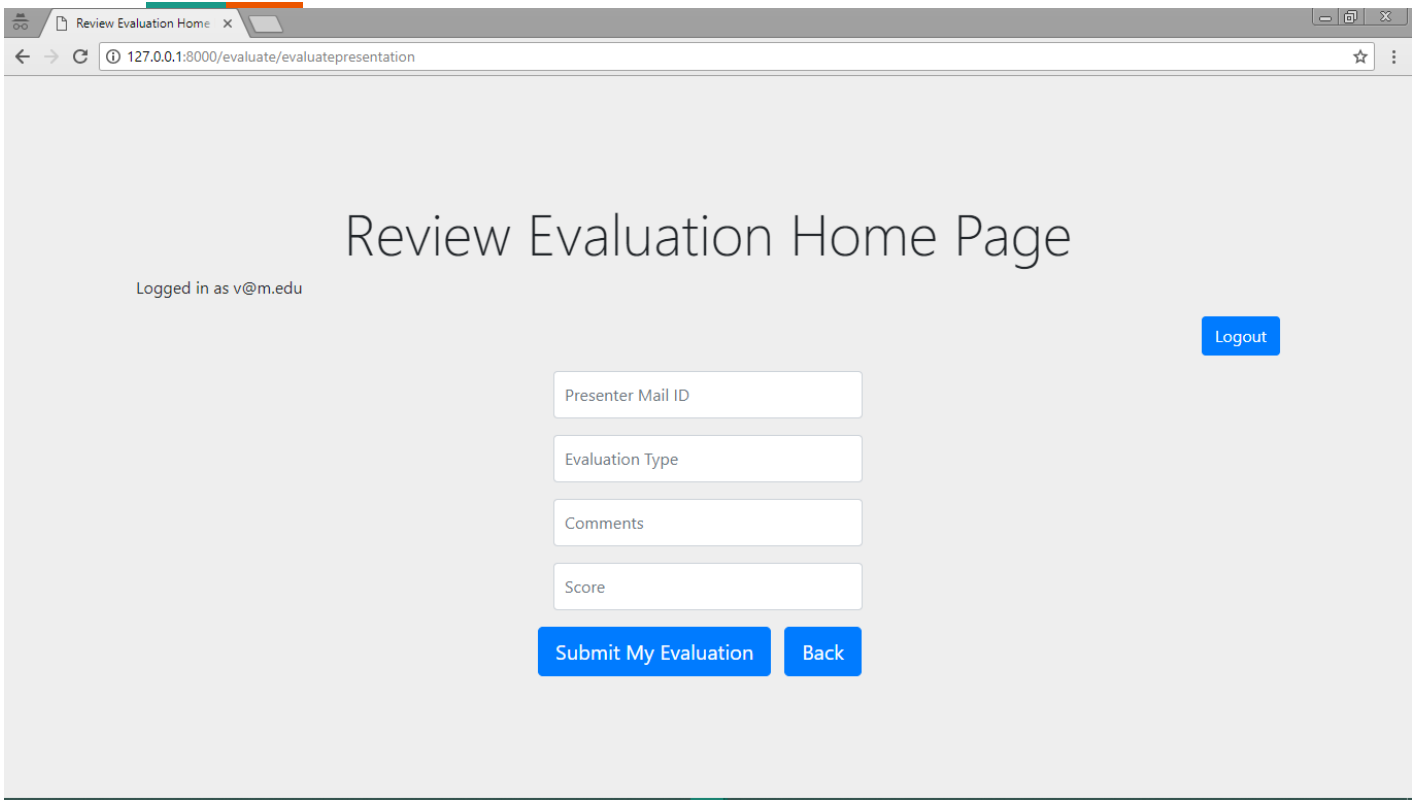
Website UI - Student Home Page



Student Page

- To evaluate other's presentation skills or to review the received evaluation remarks from his/her peers/professor
- '**Review my evaluated presentation**' - to review received evaluation score/remarks
- '**Review other's presentation**' - to review other's presentation.

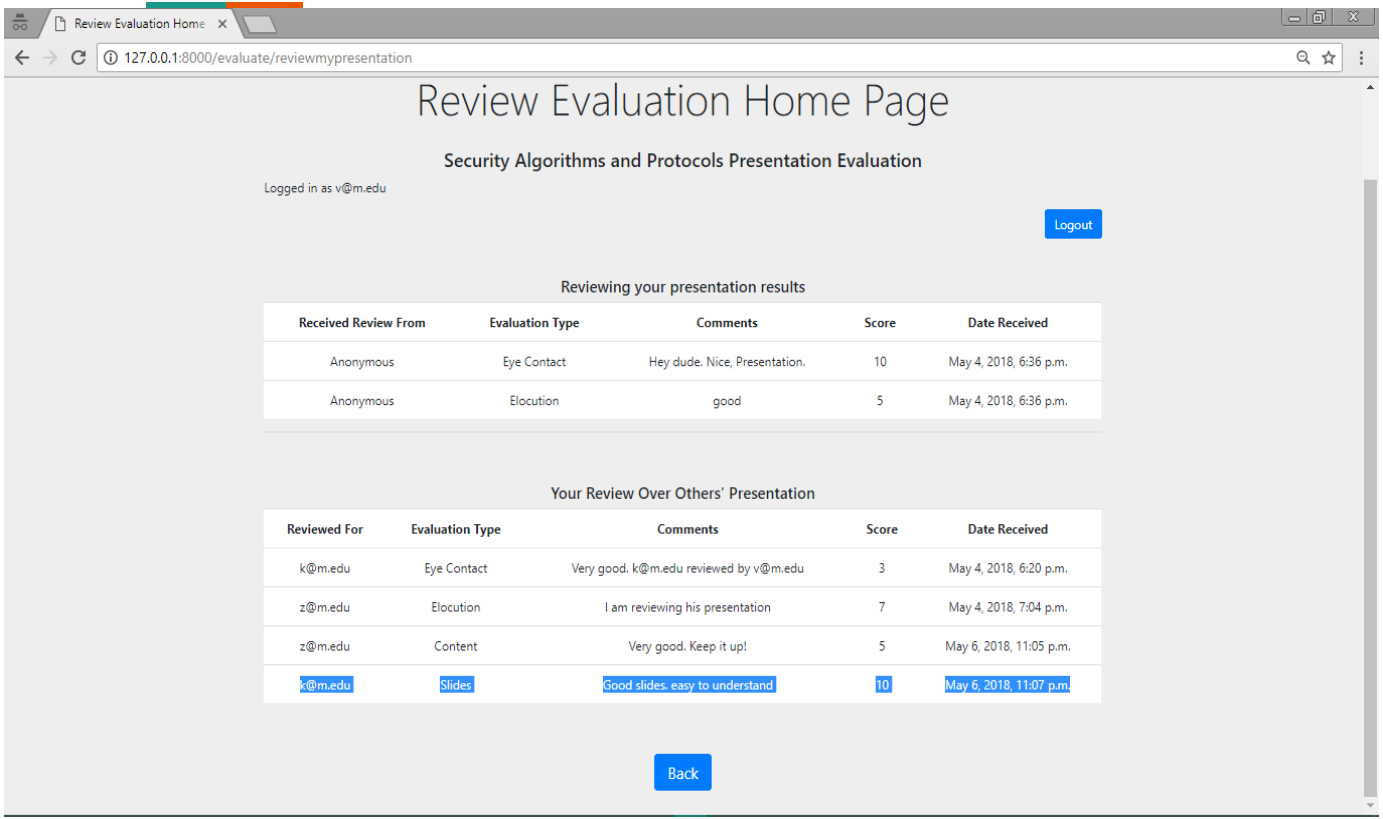
Website UI - Student Evaluating Peer Page



Student Review Evaluation Over Peer Page

- After login, Student can review other's using this page.
- Student can comment on evaluation type, score or comments
- **v@m.edu evaluating k@m.edu**

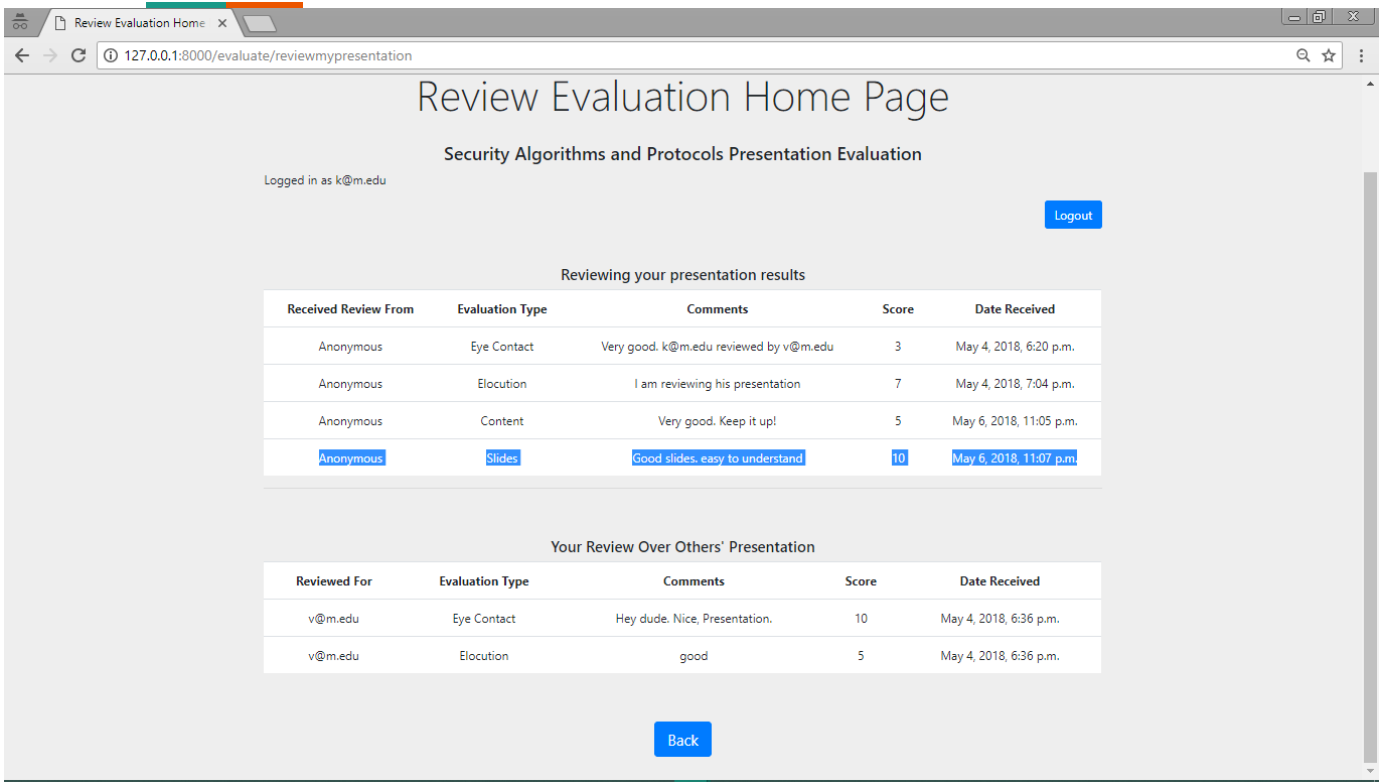
Website UI - Student Reviewing Received Evaluation from Others



Student Review Evaluation Received from Others

- After login, Student can review other's using this page.
- Student can review what evaluation he/she received for his/her presentation or look at their review given for others
- **v@m.edu evaluated k@m.edu**

Website UI - Student Reviewing Received Evaluation from Others



Student Review Evaluation Received from Others

- After login, Student can review other's using this page.
- Student can review what evaluation he/she received for his/her presentation or look at their review given for others
- **k@m.edu reviewing his evaluation home page**

Demo - Video

Video URL:

https://drive.google.com/open?id=13AzwiiyqGelA-GXrr3fCDm-0DwkWvvty

Image Previews URL:

https://drive.google.com/open?id=11uEecM3k8EWnjtapwVCPNnVVjW5UXwac

Followings are done in this demo video:

- 2 students taken from “students” table
  - v@m.edu
  - k@m.edu
- Logged in as v@m.edu and gave presentation evaluation for k@m.edu
- Checked the review evaluation page of v@m.edu to check the review gave fro k@m.edu
- Logged out
- Logged in as k@m.edu and reviewed the received evaluation from v@m.edu

References - will be udpated

- https://en.wikipedia.org/wiki/Advanced_Encryption_Standard
- https://en.wikipedia.org/wiki/SHA-2
- https://pypi.org/project/pyaes/

Questions?

- You can reach me at techengineervivek@gmail.com or vivekvellaiyappans@gmail.com
- Github repo: https://github.com/vivekVells/Presentation-Evaluation-Tool

Thank You!
Have a good one!