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| COS 301: Software Engineering |
|  |
| Functional Requirements |

**Group\_7b**

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COS 301: Software Engineering

**Functional Requirements**

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1.1 Use Case Prioritization

Critical

* System is an online application that runs on all web browsers and it is responsive so that it can run on the majority of devices
* Allow staff to manage content
* Integrate seamlessly with any host site

Important

* Integrated with the CS website
* Signing in
* Signing out
* Automated Feedback on common mistakes
* Automated Structuring
* Users must be able to CRUD posts in a highly controlled manner
* Keep track of who has read what and highlight unread messages for each user
* Restrict users to post on specified levels based on their status
* Provide Functionality to support semi-automatic creation of thread summaries
* Automatically change the status of a user based on participation
* Provide functionality such as searching and filtering
* Graphs(visuals), reporting and statistics about user participation and their marks compared to peers
* Provide functions to apply social tagging(hashtags) and view content in hashtags
* Apply Self organizing based on social tagging
* Detect if a post is plagiarized
* Detect violation of rules
* Developing an FAQ’s
* Earning participation points for weekly discussions

Nice to have

* Game-like representation
* Create automated template based messages to users or groups
* Encourage to open an issue for continued discussion
* Provide Functionality to evaluate posts and vote for posts
* Quality contribution measurement

1.2 Use Case/Server contracts

# 1.2.1Feature Name (Restrict users to post on specified levels)

## Feature Process Flow / Use Case Model

## Use Case(s)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Use Case ID:** | UC-1.2.1 | | | |
| **Use Case Name:** | Restrict Users to post on specified levels | | | |
| **Created By:** | Tsepo Ntsaba | | **Last Updated By:** |  |
| **Date Created:** | 19/02/2015 | | **Last Revision Date:** |  |
| **Actors:** | | Lecturer (Primary Actor)  Teaching Assistant (Primary Actor)  Student (Primary Actor) | | |
| **Description:** | | Different stakeholders in the system have different roles, thus the level of participation cannot be the same for all stakeholders, and thus a level of access needs to be established for the different stakeholders in the system in regards to posting on the system. | | |
| **Trigger:** | | One of the stakeholders wants to post a topic, thread or announcement to fellow students, teaching assistants or lectures. | | |
| **Preconditions:** | | 1. Stakeholder has access to the necessary technology that gives access to the system, devices such as a PC, laptop or mobile phone. 2. Stakeholder has access to the internet and a web browser as the system will be an online application. 3. If the stakeholder of the system is a student, they must be registered for that specific degree and module. The student must also have their own username and password to gain access to the system. 4. If the stakeholder is a teaching assistant or tutor they must have a username and password given by the course coordinator or lecture for special privileges. 5. If the stakeholder is a lecturer they must be a lecturer for that module and they will be granted special permission by the department to be in charge of the online forum. They also need a username and password that grants them the special privileges. | | |
| **Postconditions:** | | 1. Once a student is logged in they can start a discussion and post it to other students, put social tags, vote on other posts or discussions, comment on other posts, download content. 2. Once a teaching assistant is logged in they can do everything a student can but with extra functionality such as uploading special content (videos, notes etc.) TA’s can also post assignments, tasks, practical’s etc. 3. Once a lecturer is logged in they can do everything a student and a TA can but with extra functionality such as posting messages to everyone, posting special announcements, posting e-mails to everyone, posting marks, posting projects, posting important links etc. | | |
| **Normal Flow:** | | 1. Stakeholder switches on the device and makes sure they have an internet connection 2. Stakeholder opens up a web browser and types in the link of the online application. 3. Stakeholder fills in the correct login details. 4. After a successful login the stakeholder depending on which access level has been granted will be given the special permissions or privileges on posting. 5. Stakeholder posts whatever message, topic, thread, announcement etc. they want to post based on the level of access granted to them. | | |
| **Alternative Flows:** | |  | | |
| **Exceptions:** | | 3a. In step 3 of the normal flow, if the stakeholder fills in the incorrect details   1. Issue an error and give the stakeholder another try, until successful 2. Resume from step 4   3b. In step 3 of the normal flow, if the stakeholder cannot login   1. If the stakeholder is a student, they need to register for the module 2. If the stakeholder is a TA, then they need to go see the Lecturer to be registered 3. If the stakeholder is a lecturer, they need to go see the H.O.D to register | | |
| **Includes:** | | Allow staff to manage content  Users must be able CRUD in a highly controlled manner | | |
| **Frequency of Use:** | | 200-500 logins and posts per day | | |
| **Special Requirements:** | | Login security must be strong and safe to prevent an attack that could destroy the functional structure the system e.g. student stakeholder posting negative posts on behalf of the lecture | | |
| **Assumptions:** | | There are only three type of stakeholders in this use case | | |

# 1.2.2Feature Name (Restrict users to post on specified levels)

## Feature Process Flow / Use Case Model

## Use Case(s)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Use Case ID:** | UC-1.2.2 | | | |
| **Use Case Name:** | Allow staff to manage content | | | |
| **Created By:** | Tsepo Ntsaba | | **Last Updated By:** |  |
| **Date Created:** | 19/02/2015 | | **Last Revision Date:** |  |
| **Actors:** | | Lecturer (Primary Actor)  Teaching Assistant (Primary Actor) | | |
| **Description:** | | The staff is responsible for offering the course content and material, to structure and encourage learning, and to also increase the engagement of learners in discussion forums and groups Thus it is critical that they manage the content of the online course and discussion forum. | | |
| **Trigger:** | | Adding users  Removing users  Creating tasks and threads  Social tagging  Editing posts  Editing post properties  Viewing posts  Uploading Posts and content  Setting Access permitted  Viewing Access Stats  Seeing all activity  Changing user permission  Writing messages to everyone | | |
| **Preconditions:** | | The stakeholders have to be part of that department and they have to be assigned by the department to teach that particular course, in other words they have to be stakeholder or a TA. | | |
| **Postconditions:** | | Lecturers and TA will have authority and control over structure, presentation, and participation of learners in the module. | | |
| **Normal Flow:** | | 1. Stakeholder switches on the device and makes sure they have an internet connection  2. Stakeholder opens up a web browser and types in the link of the online application.  3. Stakeholder fills in the correct login details.  4. After a successful login the stakeholder depending on which access level has been granted will be given the special permissions or privileges on posting. | | |
| **Alternative Flows:** | |  | | |
| **Exceptions:** | | 3a. In step 3 of the normal flow, if the stakeholder fills in the incorrect details   1. Issue an error and give the stakeholder another try, until successful 2. Resume from step 4   3b. In step 3 of the normal flow, if the stakeholder cannot login   1. If the stakeholder is a TA, then they need to go see the Lecturer to be registered 2. If the stakeholder is a lecturer, they need to go see the H.O.D to register | | |
| **Includes:** | | Login  Users must be able CRUD in a highly controlled manner  Restrict users post based on access levels | | |
| **Frequency of Use:** | | 50-100 logins a day | | |
| **Special Requirements:** | | Login security must be strong and safe to prevent an attack that could destroy the functional structure the system e.g. student stakeholder posting negative posts on behalf of the lecture | | |
| **Assumptions:** | | There are only three type of stakeholders in this use case | | |