eNOSHA: A Free and Open source Learning Object Repository

eNOSHA

User Manual

e-Learning Neutral Object Storage with a Holistic Approach

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Stockholm University
ÖREBRO UNIVERSITET

Contents

1. Preface 2
2. About eNOSHA 3

Getting Started

3. Installation 5
    a. Windows 5
    b. Linux 6

Using eNOSHA

4. Administration Module 8
    a. Add Categories / Subcategories 8
    b. Set File types and formats 9
    c. Add Languages 9
    d. Add Activity Types 9
    e. Add Target Regions 10
    f. Add a Module 10
    g. System Backup 10
5. User Management Module 12
    a. Add A User 12
    b. Browse Users [Advanced] 12
    c. Add User Types 13
    d. Set User Rights 13
    e. User Validation 14
6. Upload Module 15
    a. Normal Upload 15
    b. Locating Original Version 17
    c. Template Based Upload 17
    d. Bulk Upload 19
7. Search Module 20
    a. Simple Search 20
    b. Tag Cloud 20
    c. Advanced Search 20
    d. Search filter 22
    e. Versioning 23
    f. Rating & Commenting 23
8. Statistics Module 24
9. Help Module 25

1. Preface

The NeLC project is to build up and maintain a sustainable National e-Learning Centre (NeLC) in Sri Lanka that will be a mechanism for the use of ICT for national development as to visualize the e-Sri Lanka program. The NeLC would do so by the promotion of teaching, learning and research for exploring and formulating new and innovative content development, delivery and evaluation exploiting the benefits of ICT.

eNOSHA is an open source Learning Object Repository developed in collaboration between: University of Colombo School of Computing (UCSC) , Sri Lanka under the NeLC project, Stockholm University and Orebro University, Sweden.

2. About eNOSHA

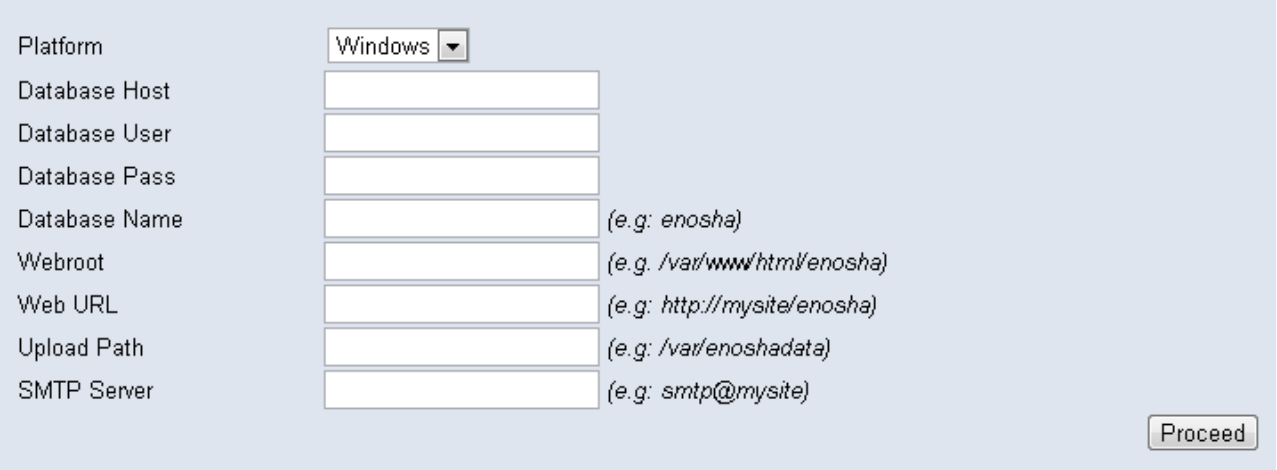
The e-learning Center at the University Of Colombo School Of Computing creates and publishes a large amount of learning material for its internal and external degree programs. In addition to this the staff of the e-Learning Center creates a huge volume of reusable content to be used within the center for later development. All these learning objects are stored with backups on UCSC servers, but what has been missing during a long period is functionality for mark-up and searching of eLearning content. In this context, a method for these learning materials as well as the developed content to be shared among the staff itself, or certain material to be made publicly available was needed. This is where eNOSHA (eLearning Neutral Object Storage with a Holistic Approach) is conceived as a sharing medium and most importantly as a complete collection of the center's work over the years. eNOSHA will also be an attempt at creating a content developer community through sharing, modifying, feedback, rating, commenting facilities which will ultimately lead to content of better quality.

Getting Started:

3. Installation

3.1 Windows

1. Install AMP (Apache, MySQL & PHP) packaged software (e.g. Wamp Server, XAMPP)
2. Extract the eNOSHA source directory into the web root (e.g. C:/wamp/www/)
3. Create a data directory outside the web root (e.g. C:/wamp/enoshadata)
4. Run `localhost/enosha/install.php`
5. Set up system variables



6. Set up the administrator account

7. Log in with the created account and set up the system
8. Remove `enosha/install.php` script
9. Open `config.php` and edit the entry `$mysqldump_path` (used for backing up the system) according to your installation path

3.2 Linux [Installing on a fresh Debian server]

1. Install Apache web server and PHP
   `apache2` and `libapache2-mod-php5`
2. Install MySQL, MySQL module for PHP, and PEAR Extension
   `apt-get install mysql-server php5-mysql php-pear`
3. Enable mod-rewrite for PHP
   `a2enmod php5 rewrite`
4. Extract the eNOSHA source directory into the web root
   `unzip enosha.zip -> /var/www`
5. Set directory ownership and permissions for the source directory
   `chown -R www-data:www-data /var/www/enosha`
   `chmod -R g+rx /var/www/enosha`
6. Create a data directory outside the web root
   `mkdir /var/enoshadata`
7. Run localhost/enosha/install.php
8. Follow the rest of the setup procedure [as described in the previous section]

Using eNOSHA:

eNOSHA comprises of modules for specific functionalities. After installing the system, proceed to the Administration module to set up the system.

4. Administration Module:

eNOSHA has a built-in administrator role, with all privileges. However, by using the User Management module (Page), any role can be customized by adding or removing user rights.

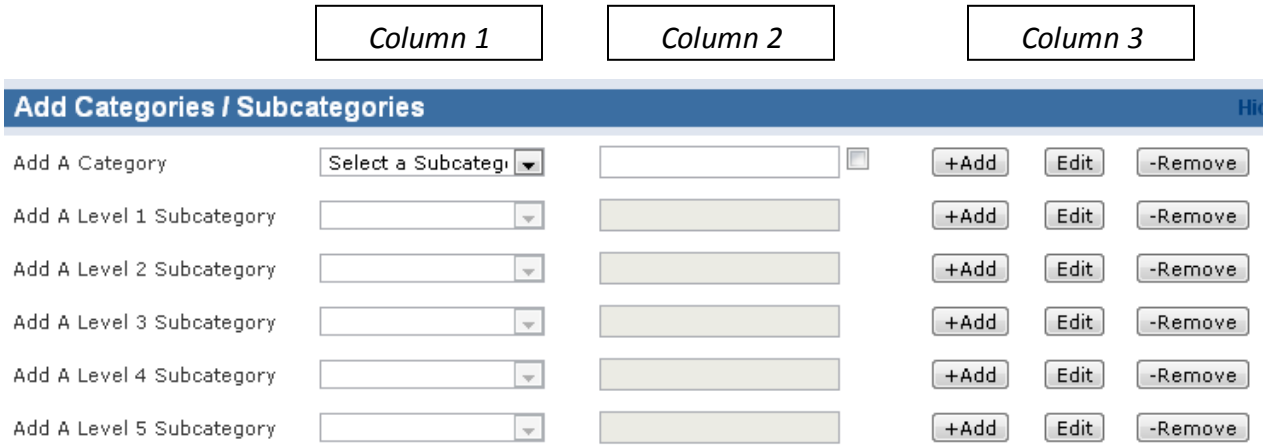
1. System administrator

   An administrator who is able to update categories, language types, activity types etc. at a general customization level and not in control of users or user rights.
2. Super administrator

   An administrator who is able to assign users, user roles etc. and holds the maximum control over the system.

4.1 Add Categories / Subcategories

This function adds/removes main categories and sub categories that learning objects belong to. Removing the categories make them hidden and prevents further use. However objects already pertaining to that category will remain the same.



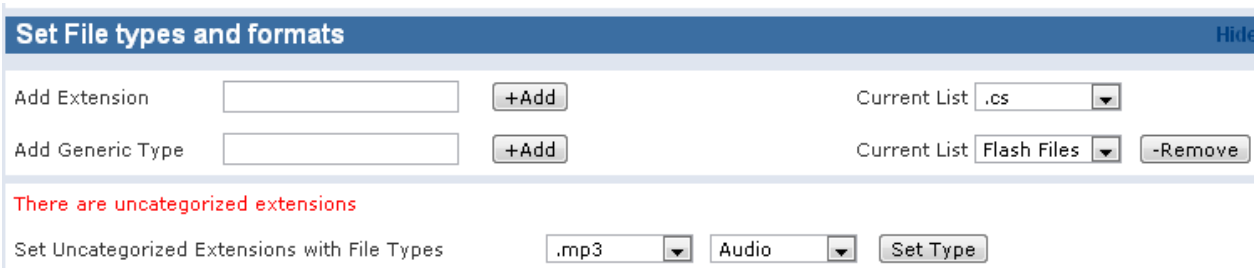
1. *Column 1*: Lets you observe the existing categories and sub categories before adding
2. *Column 2*: Text boxes to input the names of new categories or sub categories.

   Checking the checkbox makes a category '*External*'. (See page)
3. *Column 3*: Buttons to add, edit or remove

4.2 Set File types and formats

This function adds file extensions (.swf, .txt) and file types/Generic types (Flash files, Text files).

When new file extensions are in the system a notification is generated to associate the extensions with a file type. (.swf->Flash files, .txt->Text files)



4.3 Add Languages

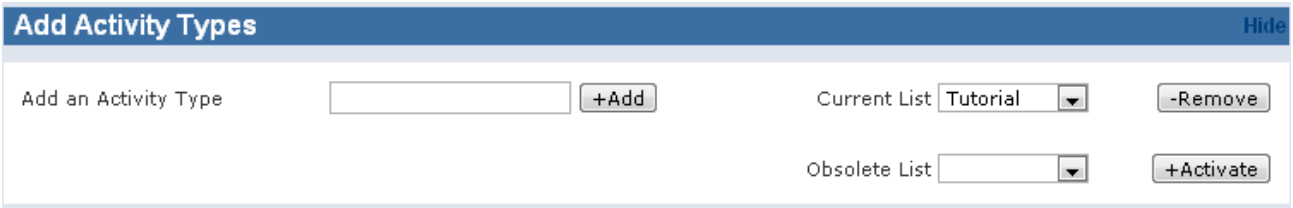
This function adds/removes Languages. Language in this context means the content language of a learning object. (i.e. A document written in Swedish)

Obsolete languages can be restored back.

4.4 Add Activity Types

This function adds/removes Activity Types. Activity Type means the nature of a learning object, as to how it can be used.

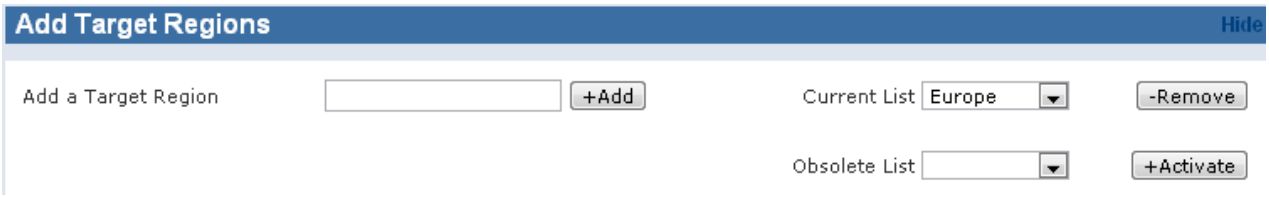
Obsolete Activity Types can be restored back.



4.5 Add Target Regions

This function adds/removes Target regions. Target region means the target audience for a learning object.

Obsolete Target Regions can be restored back.



4.6 Add a Module

This function adds a new module link to the main system menu. The new module directory should be placed in `enosha/lib/` directory and the relative URL should be input in the module URL field. e.g. `enosha/lib/newmodule`.

4.7 System Backup

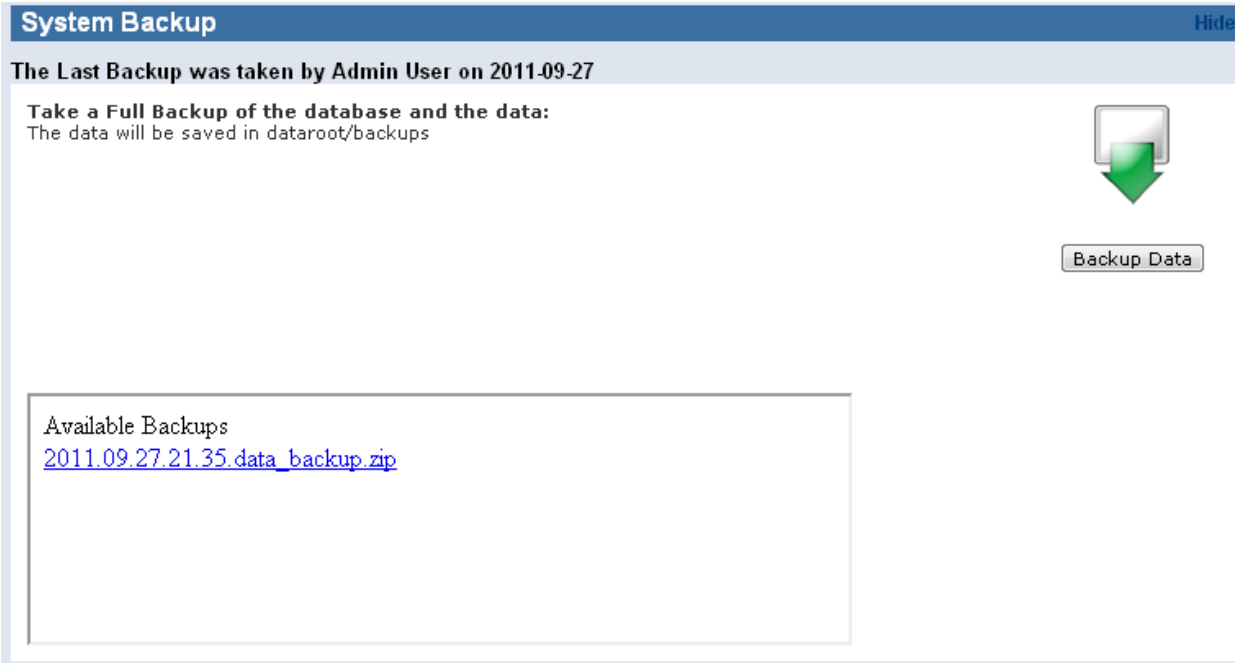
This function creates a complete backup of the current system, both data and database.

These backups are stored in a directory named 'backups' in the enosha data directory. (i.e. `enoshadata/backups`)

The backup files will be in the format:

1. 2009.07.14.01.40.data_backup.zip (data backup)
2. 2009.07.14.01.40.sql_backup.sql (mysql dump/database backup)

Previous backups will be displayed to be downloaded as an additional backup measure.

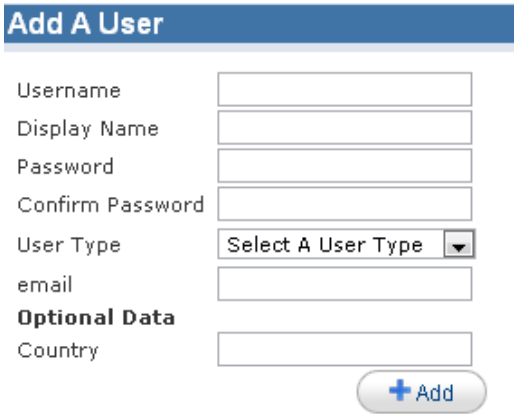

System Backup
Hide
The Last Backup was taken by Admin User on 2011-09-27
Take a Full Backup of the database and the data:
The data will be saved in dataroot/backups
Backup Data
Available Backups
2011.09.27.21.35.data_backup.zip

5. User Management Module:

5.1 Add A User

This function adds users to the system. This module can be only be accessed by a super administrator.

When adding a user, user type should be defined. See page for the built-in user types for eNOSHA.



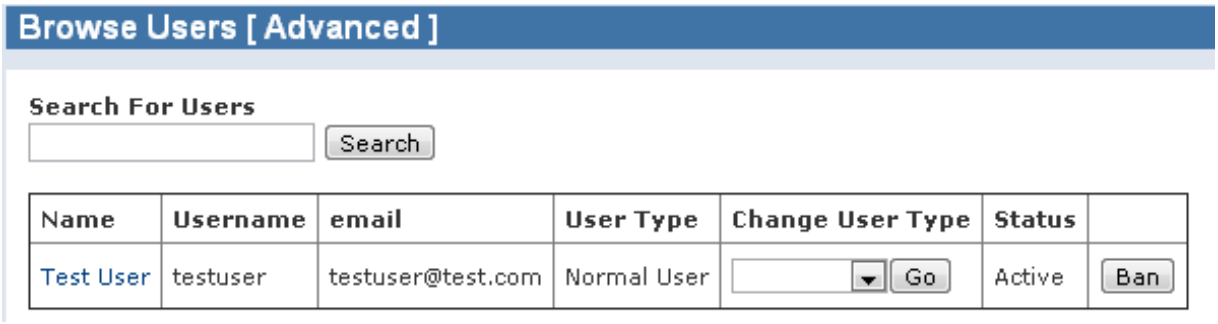
Note: Check for Users

This function is a search utility for adding users by doing a quick check if the user is present in the system.

5.2 Browse Users [Advanced]

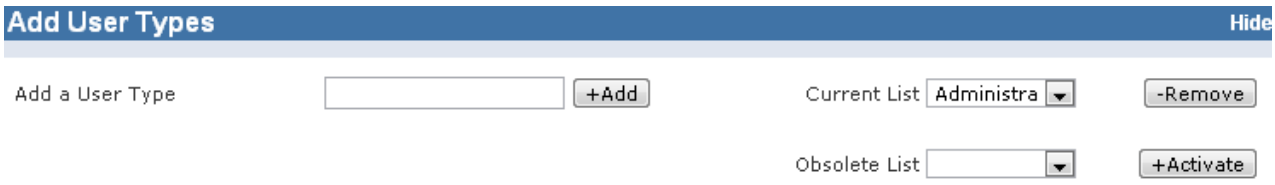
A detailed search with additional functions.

1. User Ban/Activate
2. Change User Type



5.3 Add User Types

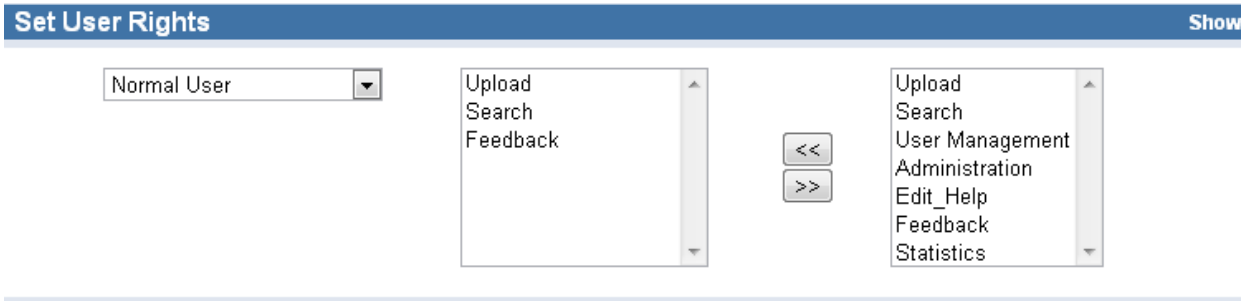
This function adds/removes User types to the system. A User Type means a user role with different rights. See next function for customizing the added user types.



5.4 Set User Rights

When a new user type is added to the system or existing user type need to be upgraded, this functionality can add/remove rights for user types. Use the arrow buttons to assign or remove rights for the selected user type.

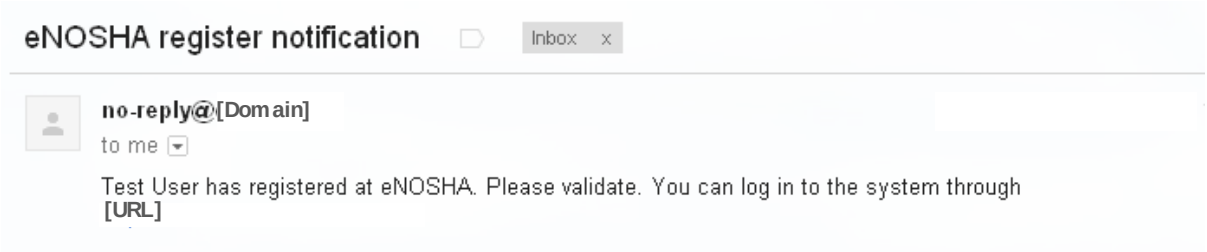
New rights are usually introduced to the system by the *Add New Module* function. (Page)



5.5 User Validation

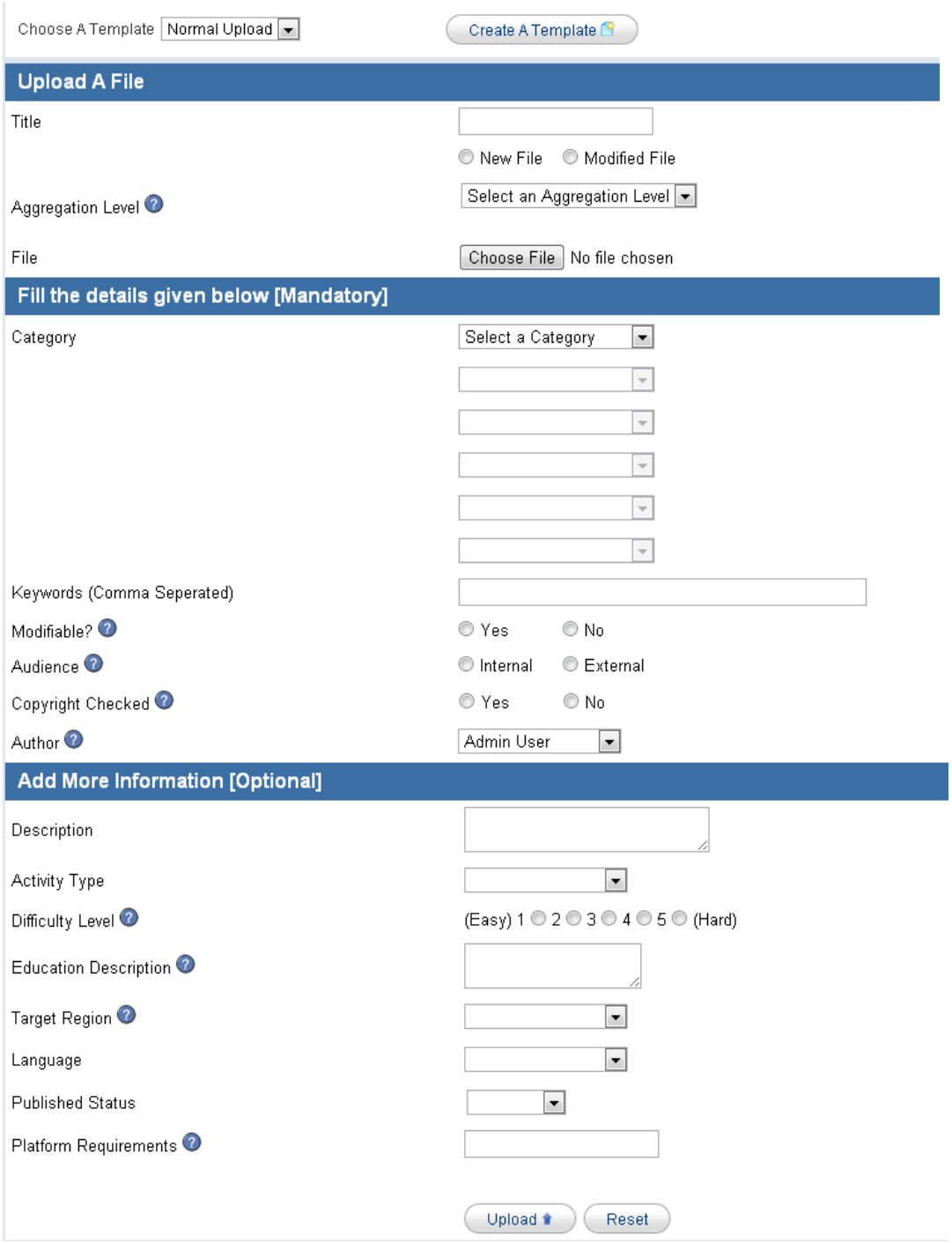
When New Users register in the system, the administrator gets a notification about the users waiting to be validated. The pending users are listed and the administrator can either validate them by assigning them a user type or completely remove the request from the system.

Apart from the internal notification, an automated email will be sent to the registered email address of the administrator, notifying the registration.



6. Upload Module:

6.1 Normal Upload



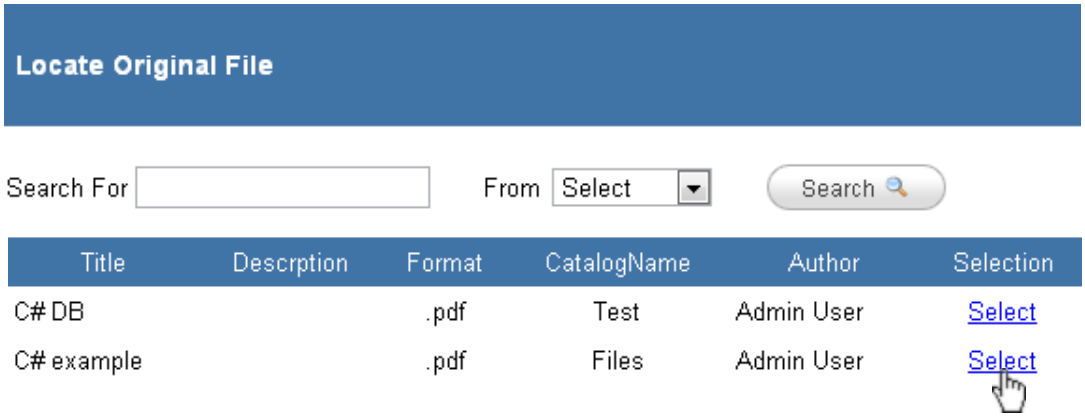
Normal upload means the default upload function of eNOSHA. Following are the metadata fields and their descriptions. Depending on the aggregation level, certain fields become mandatory while others stay optional.

Table 6.1: Metadata fields and their descriptions

Metadata field	Description
Title	Title for the uploading object
New/Modified File	If it is a new file or a modified version of a previous resource
Aggregation Level	The level of combination of learning objects. Atom: The smallest level of aggregation, like Images, Text files, Sound files and Animations. Collection of atoms: A combination of atoms, like a HTML document with embedded pictures or a lesson. Course module: A complete course section that include a selection of collection of atoms. Full course: A full course that include all the course modules for the specific course.
File	The uploading resource file
Category	All content is classified under various categories and sub-categories. This makes it more easy for the users to find content that belong to a particular section.
Keywords (Comma Seperated)	Words that define the material. A combination of keywords makes it easier for user to search for specific content.
Modifiable?	Defines if the information in the material can be modified or not.
Audience	If the material is used only within the organization (Internal) or if it is publically accessible (External).
Copyright Checked	Whether or not the material has parts that are restricted by copyright.
Author	The person that created the resource.
Description	A brief description about the object
Activity Type	The learning activity included in the material, like self assessments or tutorials.
Difficulty Level	How hard the resource is for the intended student audience.
Education Description	The pedagogical characteristics of the resource, like level of interactivity, if it is self-study material or material to be used in a classroom, pedagogy used etc.
Target Region	The context and culture most suitable for the use of the material.
Language	The language of the resource
Published Status	The published status of the material: Draft, Final, Revised or Obsolete
Platform Requirements	Software or other requirements needed to use the material.

6.2 Locating Original Version

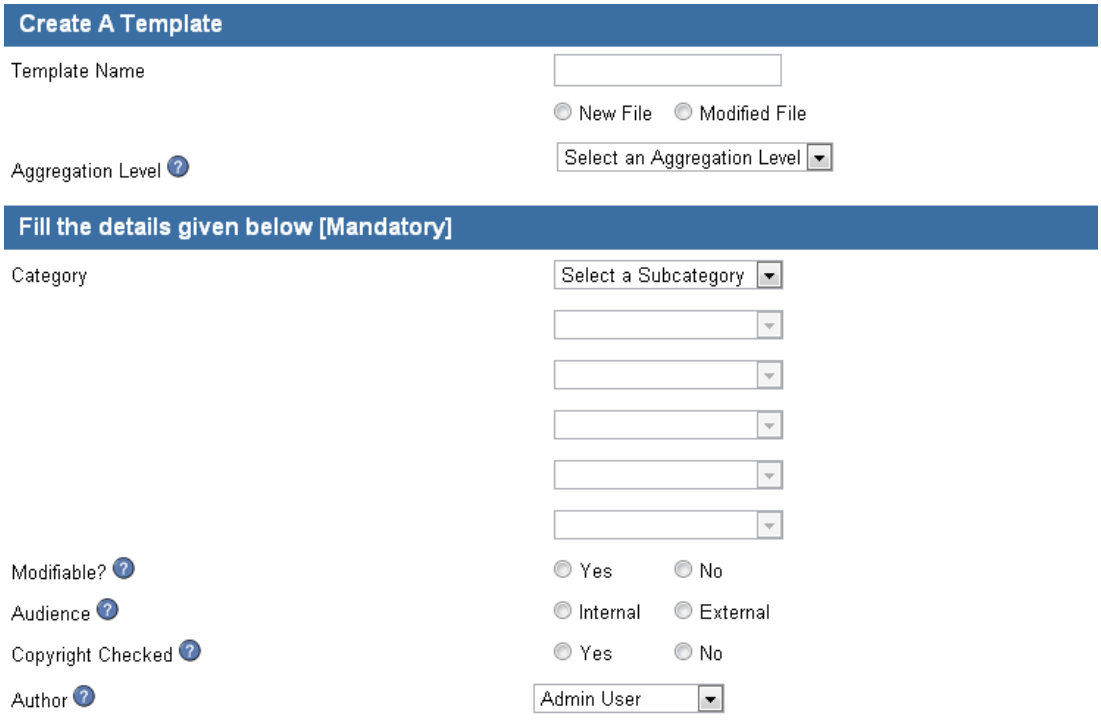
When specifying the file has been modified from a previous version, a pop up window opens and the original version should be located. Click 'Select' on the correct file. eNOSHA will handle the file versions based on this selection.



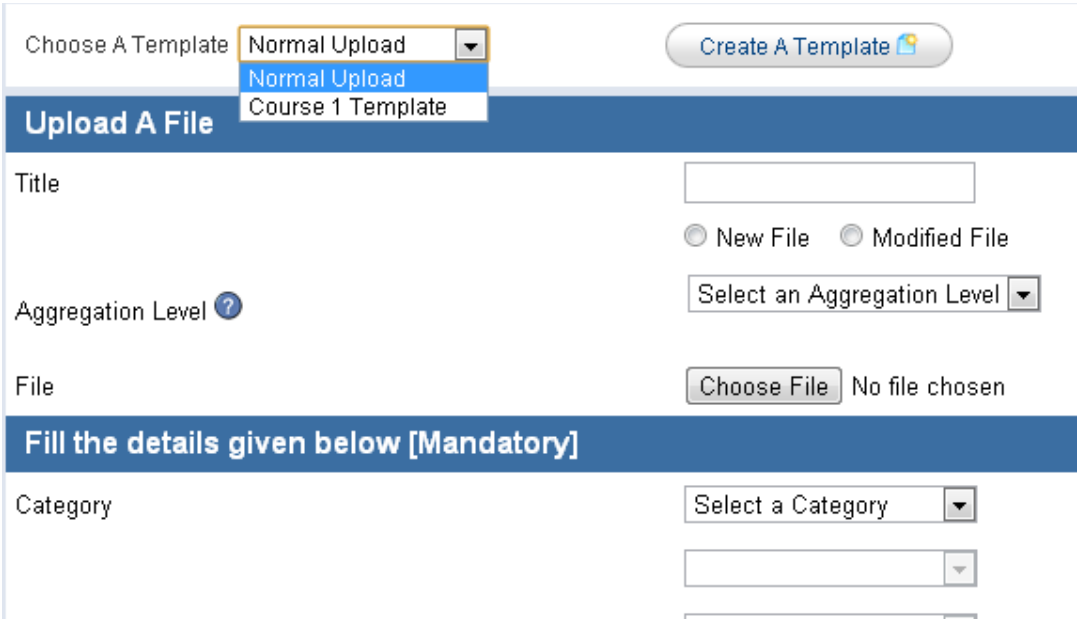
6.3 Template Based Upload

Users can create upload templates with pre-defined values for a batch upload. (e.g. A single course unit where the learning objects will have the same category and metadata)

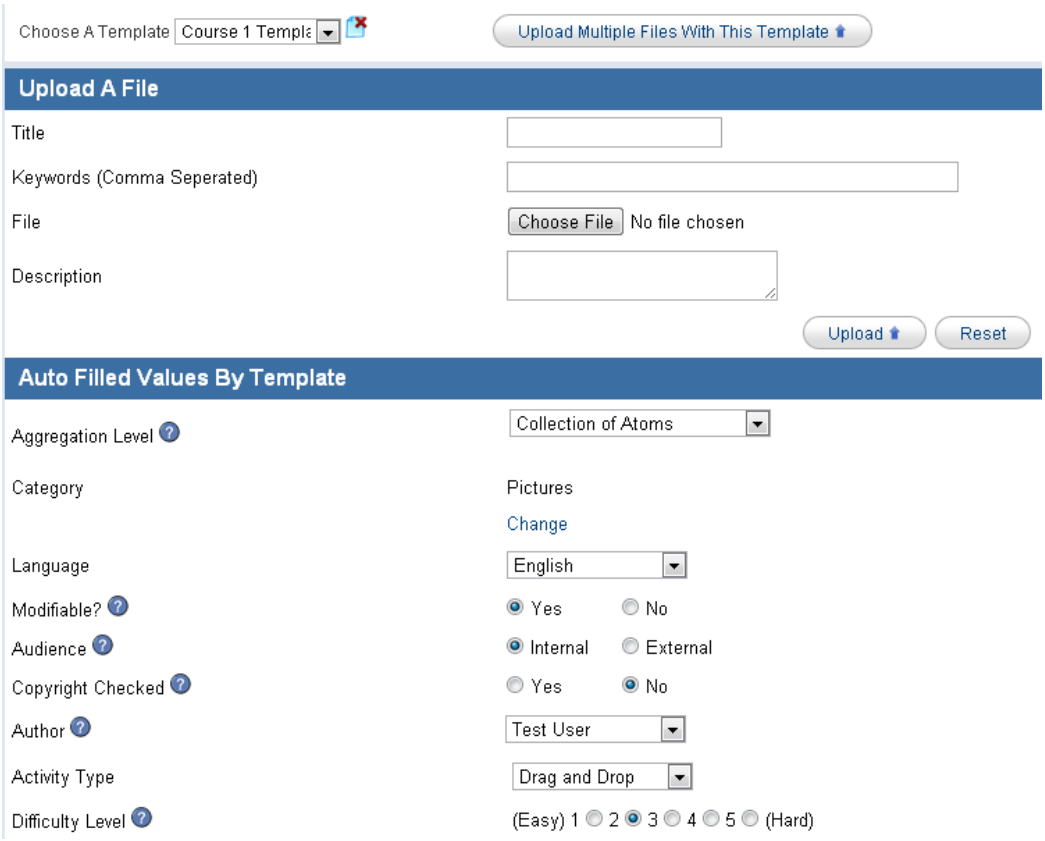
New upload templates can be created using the 'Create a Template' button in the Upload page.



The created template can then be accessed using the drop down menu in the Upload page.



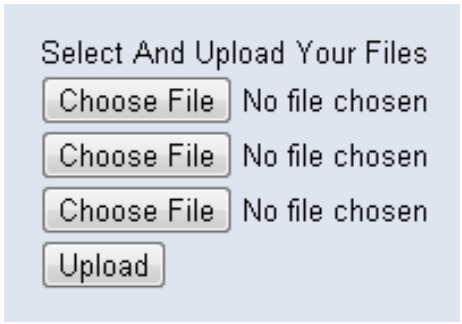
After selecting the template, the pre-defined set of metadata will appear on the upload screen and the user will be prompted to input only the specific metadata values for each object. (i.e. title, keywords etc.)



6.4 Bulk Upload

Once the user selects an upload template, a bulk upload option is provided. By clicking on the 'Upload multiple files with this template' button, multiple files can be uploaded with the same metadata values.

Up to 9 files can be attached with this feature.

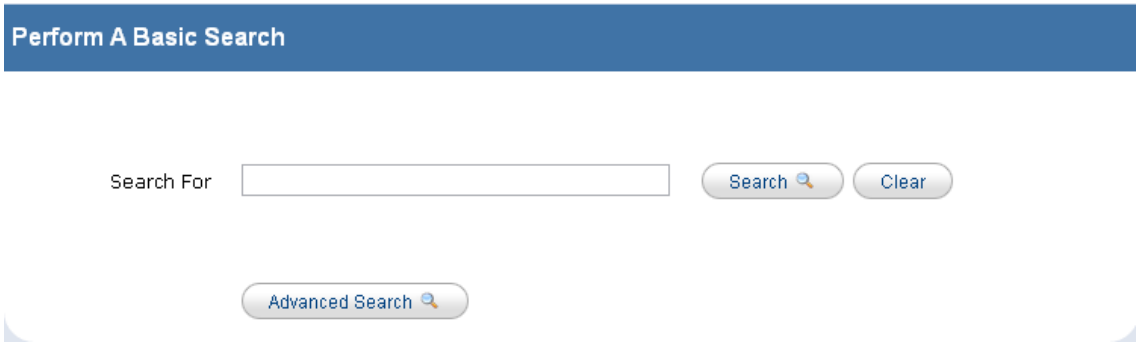


As the user-template has already been chosen for this bulk upload, the pre-defined values will be automatically loaded and the few remaining metadata will be prompted to fill in.

7. Search Module:

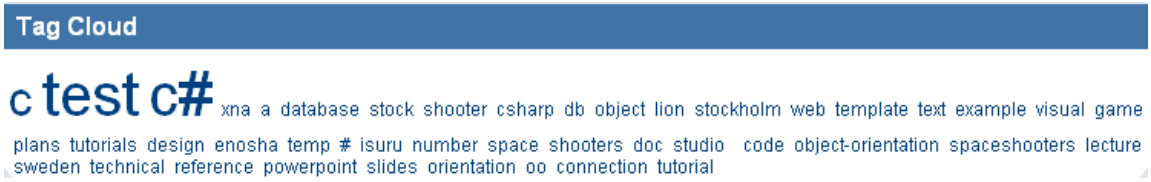
7.1 Simple Search

The basic search utility is a free text search.



7.2 Tag Cloud

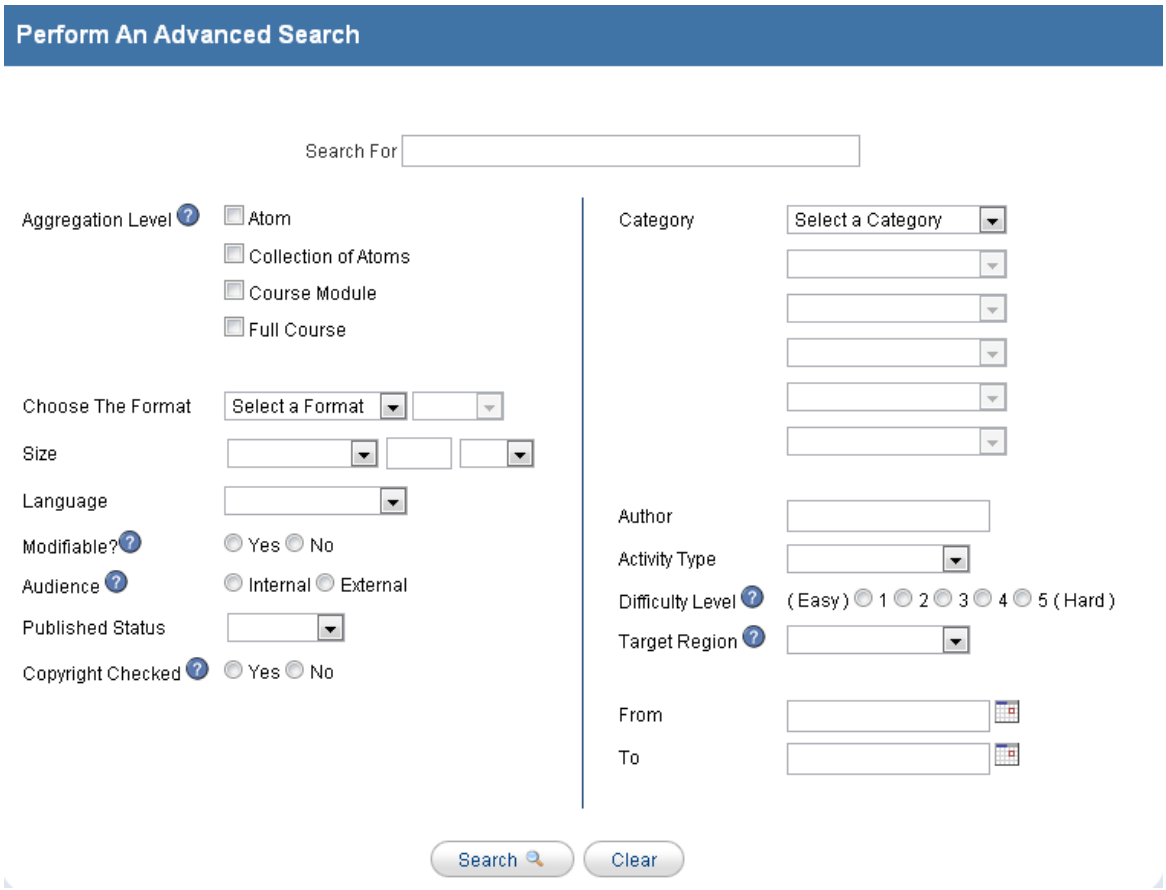
The most searched keywords of the system are made into searchable tags.



7.3 Advanced Search

The advanced search can be accessed from the basic search interface. The advanced search is designed to locate learning objects more accurately. The metadata used in the search process are,

Aggregation Level
Category
Format
Format Type
Size
Language
Modifiable
Audience
Date
Published status
Author
Copyrights and Other Restrictions



Default search result order is by relevance. Search results are also sortable in either ascending or descending order by clicking on the headings for, Title, Category, Author, Size & Date Created.

In the search results, the following icons are:

Preview resource

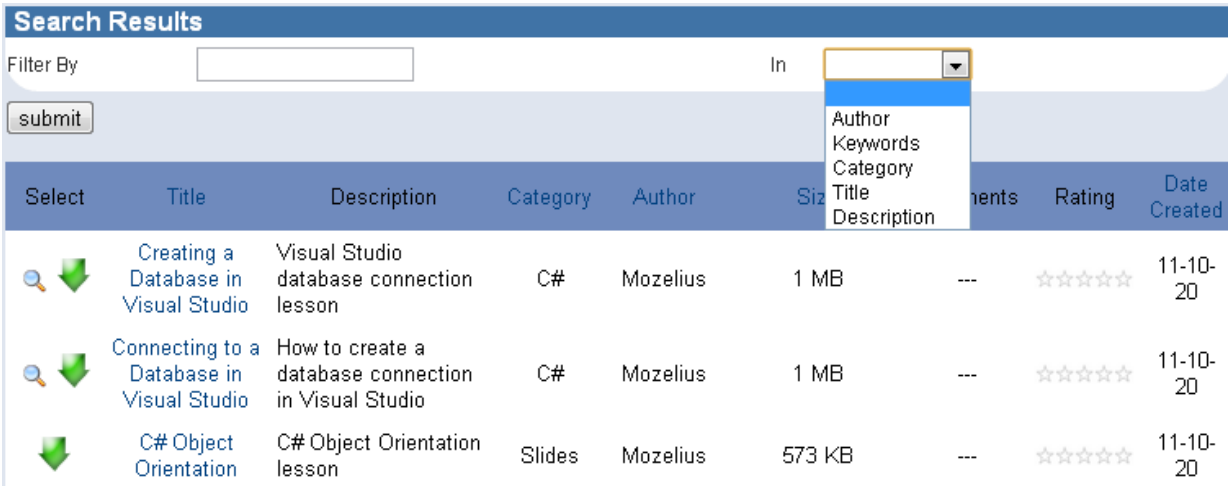
Download Resource

Select	Title	Description	Category	Author	Size	Comments	Rating	Date Created
	Creating a Database in Visual Studio	Visual Studio database connection lesson	C#	Mozelius	1 MB	---	☆☆☆☆☆	11-10-20
	Connecting to a Database in Visual Studio	How to create a database connection in Visual Studio	C#	Mozelius	1 MB	---	☆☆☆☆☆	11-10-20
	C# Object Orientation	C# Object Orientation lesson	Slides	Mozelius	573 KB	---	☆☆☆☆☆	11-10-20

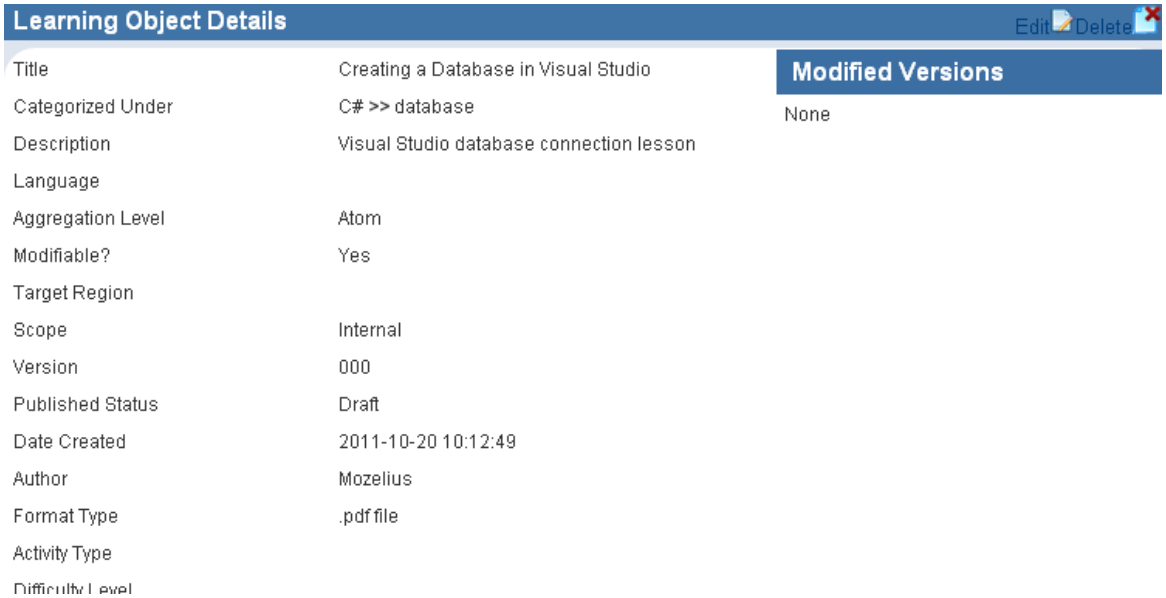
7.4 Search filter

To filter through a large number of results, filtering criteria are available. They are,

1. Author,
2. Keywords
3. Category
4. Title
5. Description.



By clicking on the title of a search result, additional details of the learning object can be obtained. The uploader or an administrator will have editing and deleting facilities at the top of the page.

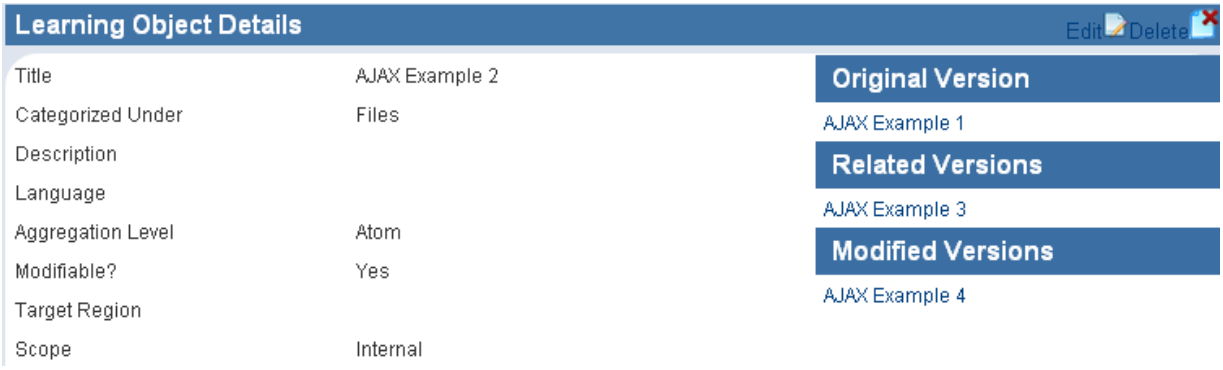


7.5 Versioning

Based on the file versioning, Original, related and modified versions of a selected learning object is displayed along with its information.

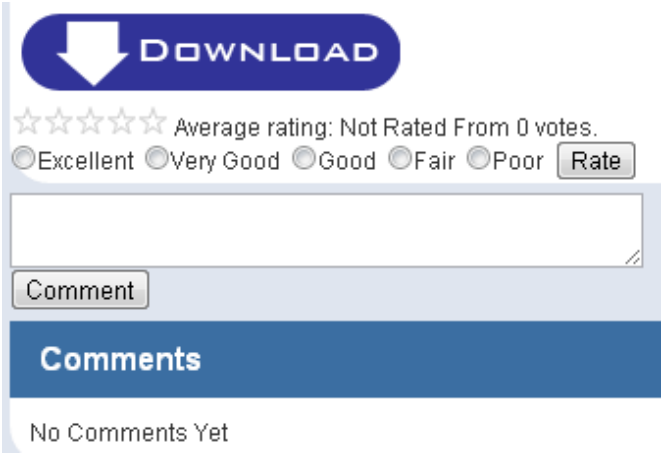
Note:

1. Original version is the parent resource.
2. Related versions share the same parent resource
3. Modified version is derived from the current resource.



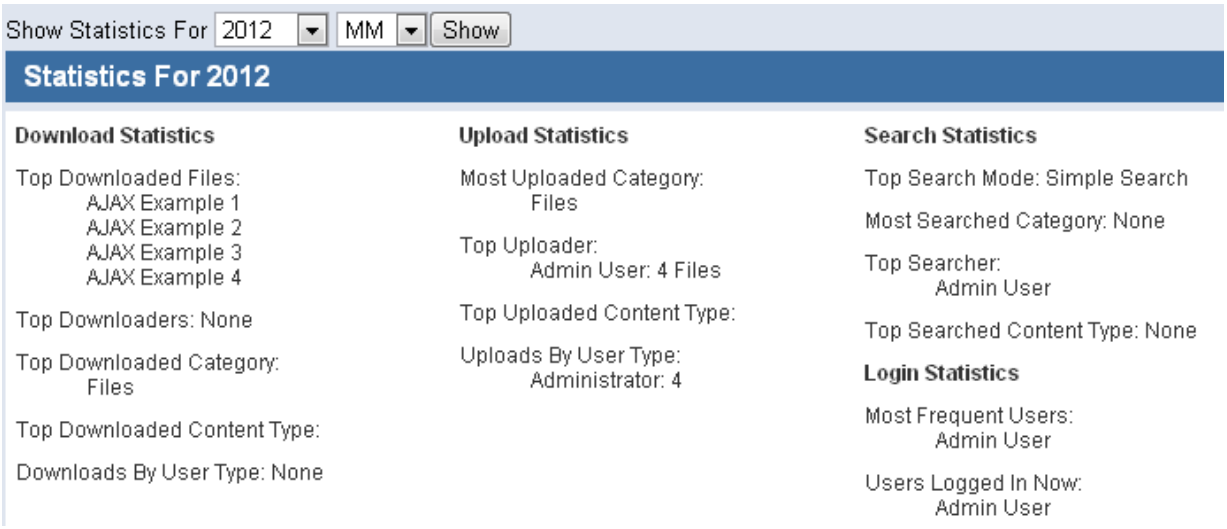
7.6 Rating & Commenting

Learning objects can be rated, or commented on. The average rating will be displayed for a learning object. Comments can only be removed by the commenter or an administrator.



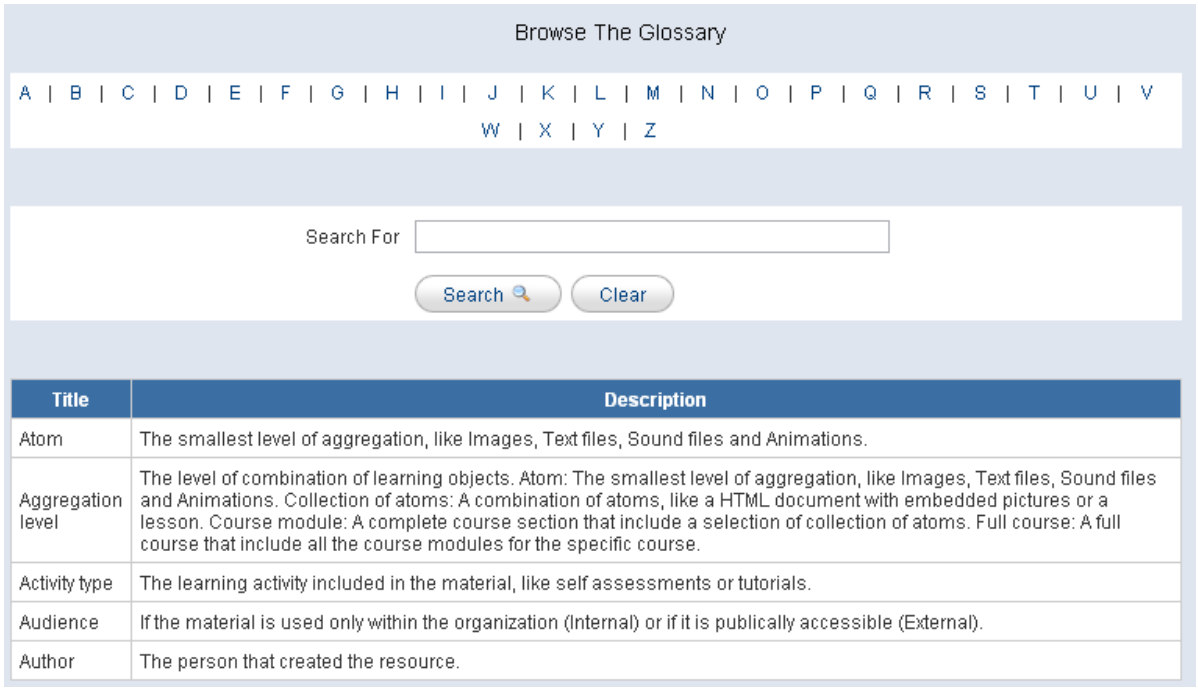
8. Statistics Module

The statistics module is designed to obtain an overview of system usage. Information can be filtered via year and month basis.



9. Help Module

A Glossary of system terminology for users, the entries can be added, search and edited. The Adding and editing right has to be assigned using 'Edit Help' found in the 'Set User Rights' panel in the User Management module.



For more information on the system and help, please email,

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eNSOHA has been a collaboration between The Univeristy of Colombo School of Computing, Sri Lanka, Department of Computer and Systems Sciences of Stockholm University and The Swedish Business School of Örebro University, Sweden.