EDGE Quick-Start Tutorial

Using the *Engineering Design Guide and Environment* as a Version Controlled Design Document Repository

Kate Gleason College of Engineering
Rochester Institute of Technology
About EDGE …

• EDGE is an open source environment to aid product design and development teams with their collaboration on design projects.
• EDGE is being developed by students, staff, and faculty at RIT.
• The EDGE site is being developed primarily for use with the RIT multi-disciplinary capstone design courses, but we eventually hope to extends its use to other courses and application environments.
• EDGE will help you keep track of all documents used within your design team, using version control, so that you can recover lost, damaged, or revised documents at any point in your design history.
• EDGE will allow you to control which documents are accessible only to your team members, and which documents are accessible to all EDGE site visitors.
EDGE Projects

• All information in EDGE is organized by projects.
• Each project has unique membership, which determines who can view, read, write, and manage the project.
• Every project has a version-controlled repository, so that every change to every document can be tracked over time, and a history of which user made each change can be provided.
• Every Project has a directory assigned to it for data storage. This directory can be shared (using a sandbox) by all members of the project team who have been granted access by the project ADMINistrator.
• When EDGE projects are created, they can be established with only a basic directory structure, or with a thorough set of template documents to get your design project started.
• Project team members with EDITOR privileges can add and delete files and directories.
• Project team members with GUEST privileges can read, view, or download all files and directories in the project, but cannot commit changes back to the project. GUESTs CAN modify their local copies of the information.
• Multi-Disciplinary Senior Design (MSD) student projects have names like PYYNNN, where P indicates MSD, YY is the year code, and NNN is a numeric key.
EDGE Nomenclature

- **Tracks**
  - A "track" is a general category of projects to which a student project may belong. Tracks are helpful for students seeking project membership in that they provide a way to look for a project in an area, but without knowing the specific projects. Tracks of projects are generally correlated with the various concentrations and options offered through the departments in the Kate Gleason College of Engineering at RIT. You can review the list of Project Tracks here.

- **Families**
  - A "family" is a group of closely related projects, which are all focused on a particular application. Project families are typically built around areas of common interest held by one or more faculty members in the College. You can read about the Project Families here.

- **Repository**
  - Each project is associated with a Subversion repository. The repository contains all project files.

- **Web space**
  - The web space of a project is contained in the top-level web directory of a project's repository.

- **Node**
  - A node is a file within a project's web space. It may be a wiki source file, an image, HTML page, *etc.* Nodes in the public web space are viewable by anyone with EDGE access, all other nodes are only visible to guests of a project.

- **Script**
  - A script is a dynamic action (database activity, *etc.*) that can be performed by a super-project.
EDGE – What Happens Behind the Scenes

Project Repository
Each project has a repository, and the web site is one element contained inside of the repository. Projects can also store other information in their repository, that has nothing to do with the web site. For example, your team may choose to use the repository to provide version control of your CAD drawings, and simulation results.

Web Space
Within the repository established for each project, the EDGE site administrator has created a web space for each team. Anything that you place within the web space area of your repository can be rendered by the EDGE web site into an internet browser, as long as you follow the site conventions on material content. Anyone with Guest access to your project can view the entire contents of your web space.

Public web
Inside of your Web Space is a subdirectory call public. Any contents that a project Editor places in public may be Observed by anyone who has logged into the EDGE web site. The public contents should never contain confidential or proprietary information.

Private web
Anything contained inside of the web space, but NOT within the public subdirectory is considered to be accessible through a browser, but is only readable by individuals who have at least a Guest level of access.
EDGE – Access Control

All access control on the EDGE web site is controlled on a project by project basis.

Observer
An observer of a project has chosen to list this project in their personal side bar along the left hand side-bar of their browser. An observer can only view content located in the public portion of the web site within the repository. (See the section on EDGE Site Structure below).

Guest
A guest has the ability to view all contents of the project repository. Guests can read the public and private areas of the web site, and can read the other contents of the repository that have been placed there by the team.

Editor
An editor has all of the access of the Guest, PLUS, an editor can create, or edit (e.g. write privileges) the contents of the project.

Curator
The curator of a project can control which versions of the contents are displayed to public view by Observers. The curator of senior design projects is typically the faculty member who is guiding the design team.

Admin
The administrator of a project has the ability to grant access control privileges to other people. If you are not currently a guest or an editor of a particular project, you may ask the administrator to grant you that access. The administrator is responsible for the security of the project.
EDGE - A Version Control System

- EDGE is built around many open source software packages. One of them, subversion, is a highly regarded tool for helping software developers manage collaborative computer program development. We have used the features of subversion in EDGE to help you manage ALL design documents including CAD drawings, interviews, reports, presentations, photos, and all related design, build, and test information!
Version Control Terminology

Server
The EDGE server hosts all of the data files needed for version control. This is the centralized resource of subversion.

Repository
The repository is where all of the data is stored and where users go to access their data.

Revision
A revision is the contents of a repository at a single moment in time.

Import
Importing means copying unversioned files into a repository and adding them to the set of versioned files.

Export
An export is a local copy of files from a revision of the repository. These files cannot be related back to the repository, so they are only useful for distributing copies of a revision by other means, not for local editing. Useful when giving your information away, and never expect to get it back.

Working copy --- (Sandbox Copy)
The working copy is a user's local copy of the repository from a single revision, which may be modified by the user. Data is never edited in the repository directly, but in a user's working copy.

Check-out
To create a working copy, a check-out is performed. This takes a revision from the server and makes a local working copy with information used to relate the working copy to the server's repository. A check-out can be edited and the changes applied to a repository.

Update
To give a local working copy the latest revision of files, an update is performed. The update will attempt to overwrite local files with those from a revision of the repository. If the local file was modified from a previous revision, the file is considered conflicted and must be resolved before it can be used again.

Commit
When changes to a working copy need to be applied to the repository, a commit is performed. Each commit has a message, username, timestamp, and revision number associated with it.

Log
A log is the time-ordered history of commits to a given path in the repository.
Collaborative Engineering Design With EDGE

Using the EDGE subversion system to manage your engineering design project materials allows the project’s engineering team members to be bold about making changes to the project's design files because:

- No information that enters a repository ever leaves, it just becomes out-of-date
- It allows members to track the status of a project against their own development
- It gives a safety net to the project members' efforts (see Backtracking)
- All material in files (especially text files) is traceable to a single author and commit time

Backtracking

- If something breaks it can be back-tracked until it works again and the differences between the two versions can be examined to give insight into the problem.
- Because versioning occurs at the repository level, a particular revision is a snapshot in time of all the files in the repository. This makes it easy to find problems that occur because of interrelationships between files.

Editing Cycle

The standard "cycle" for editing some part of a repository is to:

- Update the working copy (make sure your sandbox is current before you start work)
- Make changes to your design in your sandbox, on your local computer
  - Test changes if possible, in your sandbox, before sharing with the rest of the team
- Commit changes from your sandbox back to the shared repository, so others can use them

The time between update and commit is when problems can occur. This is the only time when changes to the local working copy are not visible by other project members (who may be editing their own working copies).

Although subversion has the notion of file locking, it is absolutely vital that project members communicate what they are working on within the repository. This problem has no good technological solution, but it does have the social solution of maintaining good communication between members.
Using EDGE to Share Public Information

• In Cornerstone Design, you may have used EDGE to report on your project to the instructor.
• You learned how to create a simplistic web site to report your results, and to edit information.
• We’re going to review how to do that information sharing today.
• However, recognize that the information sharing you learned how to do in Cornerstone Design is only a tiny fraction (maybe 5%) of what EDGE is all about.
• EDGE allows you to use a “wiki” interface to allow users to create simple web pages – the same kind of interface used to create pages in wikipedia, and many other common sites today.
• Even though EDGE allows you to use “wiki” – you are not restricted to using wiki – if you are a more sophisticated web site designer, then you can use traditional html, flash, and all of the other modern web design tools that you may be familiar with. Think of the wiki interface as being the “least common denominator” that all projects share – not the most sophisticated solution available for your use.
• I recommend that you stick with the basic wiki interface for your public directories in EDGE, to preserve a common look and feel for all visitors, and that you make a link from a simple wiki page to your flashy home page if you want to get more sophisticated. There are some things you will need to learn about links and references when working in the context of a version controlled repository system when it comes to making html links if you want to get sophisticated.
# Project Summary

One paragraph that provides a general description of the project in terms of background, motivation(s), customer(s), and overall objective(s). Your final project in DPM is to put your marketing information about the project at this point. Use your creative talents to include photos, short video clips, or other information to quickly and effectively help prospective student team members learn what the project is all about, and how they would be able to contribute.

<table>
<thead>
<tr>
<th>Project Information</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Project Name</strong></td>
</tr>
<tr>
<td><strong>Project Number</strong></td>
</tr>
<tr>
<td><strong>Project Family</strong></td>
</tr>
<tr>
<td><strong>Track</strong></td>
</tr>
<tr>
<td><strong>Start Term</strong></td>
</tr>
<tr>
<td><strong>End Term</strong></td>
</tr>
<tr>
<td><strong>Faculty Guide</strong></td>
</tr>
<tr>
<td><strong>Faculty Consultant</strong></td>
</tr>
<tr>
<td><strong>Graduate Teaching Assistant</strong></td>
</tr>
<tr>
<td><strong>Primary Customer</strong></td>
</tr>
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The Basic Project Template

**Project Summary**

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<tr>
<td><strong>Primary Customer</strong></td>
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</table>
## Starting Point for your Project

Team Documents

<table>
<thead>
<tr>
<th>Move between projects here</th>
<th>Concept Level Design</th>
<th>System Level Design</th>
</tr>
</thead>
<tbody>
<tr>
<td>Planning</td>
<td>Identify Customer Needs</td>
<td>Concept Design Review Documents (SD I)</td>
</tr>
<tr>
<td>Mission Statement</td>
<td>Establish Target Specifications</td>
<td>Detailed Design Review Documents (SD I)</td>
</tr>
<tr>
<td>Staffing Requirements</td>
<td>Generate Product Concepts</td>
<td>Managerial Design Review Presentation (SD I)</td>
</tr>
<tr>
<td>Intellectual Property Considerations</td>
<td>Select Product Concept(s)</td>
<td>Technical Conference Publication (SD II)</td>
</tr>
<tr>
<td>Preliminary Work Breakdown Structure</td>
<td>Test Product Concept(s)</td>
<td>Poster Publication (SD II)</td>
</tr>
<tr>
<td>Team Values and Norms</td>
<td>Set Final Specifications</td>
<td>Managerial Design Review Presentation (SD II)</td>
</tr>
<tr>
<td>Required Resources</td>
<td></td>
<td>Photo Gallery</td>
</tr>
</tbody>
</table>

Most DPM Content Will be placed here

Most MSD I Content Will be placed here

MSD I and MSD II Content Will be placed here

Last person to edit this page

View the history of this page here

Most DPM Content Will be placed here

MSD I and MSD II Content Will be placed here

Scroll within each project page here
Wiki Help in EDGE

Here is a listing of general help topics associated with the EDGE wiki engine. The Wiki Qwikis section lists a few examples that may be helpful in marking-up your own wiki nodes.

Wiki Details

Use this section to post guidelines and in-depth instructions.
About Wiki - Information about the “wiki” system and its origins.
Wiki Nomenclature - Learn about nomenclature, terminology, definitions, etc.
Wiki Markup Examples - To get an idea of how to make your wiki pages look like you want. These examples cover basic formatting such as headings, subheadings, lists, and formatting (bold, italics, etc). This link gives a general overview of Wiki formatting.
Wiki Style Guidelines - To get a feeling for what should be present in a wiki page.
Image Examples - Examples of Wiki images and guidelines of how to appropriately use images in your pages.
Citation Examples - Examples of Wiki citations and guidelines of how to appropriately use citations in your pages.

Wiki Qwikis

Use this section to post short examples appropriate for copying and pasting into your own pages.
Wiki Table - Example of a Wiki table. Appropriate for copying and pasting.
Wiki Image - Example of a Wiki image. Appropriate for copying and pasting.
Wiki Page - Example of a Wiki page. Appropriate for copying and pasting.

https://edge.rit.edu/content/Resources/public/Help/Wiki%20Help
### Wiki Formatting of Text

<table>
<thead>
<tr>
<th>What it looks like</th>
<th>What you type</th>
</tr>
</thead>
<tbody>
<tr>
<td>You can <em>italicize text</em> by putting 2 apostrophes on each side. 3 apostrophes will bold <em>the text</em>. 5 apostrophes will bold and italicize <em>the text</em>. (4 apostrophes don't do anything special -- there's just <em>one left over</em>.)</td>
<td>You can &quot;italicize text&quot; by putting 2 apostrophes on each side. 3 apostrophes will bold &quot;&quot;the text&quot;&quot;. 5 apostrophes will bold and italicize &quot;&quot;&quot;&quot;the text&quot;&quot;&quot;. (4 apostrophes don't do anything special -- there's just &quot;&quot;&quot;&quot;one left over&quot;&quot;&quot;&quot;).</td>
</tr>
<tr>
<td>A single newline has no effect on the layout. But an empty line starts a new paragraph.</td>
<td>A single newline has no effect on the layout. But an empty line starts a new paragraph.</td>
</tr>
<tr>
<td>You can break lines without a new paragraph. Please use this sparingly.</td>
<td>You can break lines&lt;br /&gt; without a new paragraph.&lt;br /&gt; Please use this sparingly.</td>
</tr>
<tr>
<td>Some useful ways to use HTML: Put text in a <em>typewriter font</em>. The <em>same font is generally used for</em> computer code. Superscripts and subscripts: $X^2, H_2O$</td>
<td>Some useful ways to use HTML: Put text in a <code>&lt;tt&gt;typewriter font&lt;/tt&gt;</code>. The <em>same font is generally used for</em> <code>&lt;code&gt;</code> computer code<code>&lt;/code&gt;</code>. Superscripts and subscripts: $X&lt;sup&gt;2&lt;/sup&gt;$, $H&lt;sub&gt;2&lt;/sub&gt;$</td>
</tr>
</tbody>
</table>

[https://edge.rit.edu/content/Resources/public/Help/Wiki%20Markup%20Examples](https://edge.rit.edu/content/Resources/public/Help/Wiki%20Markup%20Examples)
## Wiki Organizing your Document

<table>
<thead>
<tr>
<th>What it looks like</th>
<th>What you type</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Section headings</strong></td>
<td><strong>Section headings</strong></td>
</tr>
</tbody>
</table>

*Headings* organize your writing into sections. The Wiki software can automatically generate a table of contents from them.

### Subsection

Using more equals signs creates a subsection.

---

A smaller subsection

Don't skip levels, like from two to four equals signs.

Start with 2 equals signs not 1 because 1 creates H1 tags which should be reserved for page title.

- Unordered lists are easy to do:
  - Start every line with a star.
  - More stars indicate a deeper level.
- : Previous item continues.
  - A newline
- | in a list

marks the end of the list.

- Of course you can start again.

1. Numbered lists are:
   1. Very organized
   2. Easy to follow

---

*Unordered lists* are easy to do:

---

* More stars indicate a deeper level.

---

* Previous item continues.
  ** A newline
  * in a list
  marks the end of the list.
  * Of course you can start again.

---

# 'Numbered lists' are also good:

---

## Very organized

# EDGE Quickstart

https://edge.rit.edu/content/Resources/public/Help/Wiki%20Markup%20Examples
## Wiki hyperlinks

<table>
<thead>
<tr>
<th>What it looks like</th>
<th>What you type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Here's a link to a page named About Wiki.</td>
<td>Here's a link to a page named [[[About Wiki]].</td>
</tr>
<tr>
<td>Links can have path information.</td>
<td>Links can have path information.</td>
</tr>
<tr>
<td>A leading slash &quot;/&quot; indicates absolute path in the project's web space, as in /public/Home.</td>
<td>A leading slash &quot;/&quot; indicates absolute path in the project's &quot;web space&quot;, as in [[[/public/Home]].</td>
</tr>
<tr>
<td>Relative paths can be created too. If you want to go up one directory, use ../Home</td>
<td>Relative paths can be created too. If you want to go up one directory, use [[[../Home]].</td>
</tr>
<tr>
<td>You can put formatting around a link. Example: Index.</td>
<td>You can put formatting around a link. Example: '[[[Index]]]'</td>
</tr>
<tr>
<td>The weather in Moscow is a page that doesn't exist yet. You could create it by clicking on the link.</td>
<td>[[The weather in Moscow]] is a page that doesn't exist yet. You could create it by clicking on the link.</td>
</tr>
<tr>
<td>You can link to a page section by its title:</td>
<td>You can link to a page section by its title:</td>
</tr>
<tr>
<td>- About Subversion#Subversion Development.</td>
<td>![About Subversion#Subversion Development]].</td>
</tr>
<tr>
<td>If multiple sections have the same title, add a number. Example section 3 goes to the third section named &quot;Example section&quot;.</td>
<td>If multiple sections have the same title, add a number. [[[Example section 3]]] goes to the third section named &quot;Example section&quot;.</td>
</tr>
<tr>
<td>You can make a link point to a different place with a &quot;piped link&quot;. Put the link target first, then the pipe character &quot;</td>
<td>&quot;, then the link text.</td>
</tr>
</tbody>
</table>

https://edge.rit.edu/content/Resources/public/Help/Wiki%20Markup%20Examples
Wiki tables

This describes how to make a simple table. You can use double pipes "||" on a single row, or single pipes "|" along with a carriage return, to separate the columns within a row.

<table>
<thead>
<tr>
<th>What it looks like</th>
<th>What you type</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Caption</strong></td>
<td>&lt;!-- wiki table code --&gt;</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Heading 1</th>
<th>Heading 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Row 1 Col 1</td>
<td>Row 1 Col 2</td>
</tr>
<tr>
<td>Row 2 Col 1</td>
<td>Row 2 Col 2</td>
</tr>
</tbody>
</table>

**https://edge.rit.edu/content/Resources/public/Help/Wiki%20Table**
# Wiki images

## Wiki Image

This describes how to include images in a Wiki page.

<table>
<thead>
<tr>
<th>What it looks like</th>
<th>What you type</th>
</tr>
</thead>
</table>
| This paragraph is attached to this image. Do not include any blank lines. This image is right justified. | [[Image:tiger.jpg|frame|right|50px|This is a tiger.]]  
This paragraph is attached to this image.  
Do not include any blank lines.  
This image is right justified. |
| This paragraph is attached to this image. Do not include any blank lines. This image is left justified. | [[Image:tiger.jpg|frame|left|50px|This is a tiger.]]  
This paragraph is attached to this image.  
Do not include any blank lines.  
This image is left justified. |
| This paragraph is not attached to this image.  
This has a blank line.  
This image is centered. | [[Image:tiger.jpg|frame|center|50px|This is a tiger.]] |

[https://edge.rit.edu/content/Resources/public/Help/Wiki%20Image](https://edge.rit.edu/content/Resources/public/Help/Wiki%20Image)
This describes how to include links to various file types in a Wiki page.

<table>
<thead>
<tr>
<th>What it looks like</th>
<th>What you type</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>This is a sample word document.</strong> This link shows how to create a link for a sample word document. It will remain in RED until you upload a file to complete the link.</td>
<td><img src="/content/Resources/public/Help/Wiki%20Files" alt="Sample file" /> [This is a sample word document.]] This link shows how to create a link for a sample word document. It will remain in RED until you upload a file to complete the link.</td>
</tr>
<tr>
<td><strong>This is a sample word document.</strong> This link shows how to create a link for a sample word document. It will become BLUE after you upload a file to complete the link.</td>
<td><img src="/content/Resources/public/Help/Wiki%20Files" alt="Sample file" /> [This is a sample word document.]] This link shows how to create a link for a sample word document. It will become BLUE after you upload a file to complete the link.</td>
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<tr>
<td><strong>This is an incorrect sample word document link.</strong> This link shows an incorrect link for a sample word document. It will become BLUE after you upload a file to complete the link. However, because the node name was sample0 rather than sample0.doc, EDGE may get confused about the file type when someone tries to view the document. Remember to use the appropriate file type for the node name, and use the pipe (vertical bar) to provide whatever text you would like to display for the link. If the file type is missing in the node, EDGE will assume everything is a WORD file.</td>
<td><img src="/content/Resources/public/Help/Wiki%20Files" alt="Sample file" /> [This is an incorrect sample word document link.]] This link shows an incorrect link for a sample word document. It will become BLUE after you upload a file to complete the link. However, because the node name was sample0 rather than sample0.doc, EDGE may get confused about the file type when someone tries to view the document. Remember to use the appropriate file type for the node name, and use the pipe (vertical bar) to provide whatever text you would like to display for the link. If the file type is missing in the node, EDGE will assume everything is a WORD file.</td>
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<tr>
<td><strong>This is a sample powerpoint document.</strong> This link shows how to create a</td>
<td><img src="/content/Resources/public/Help/Wiki%20Files" alt="Sample file" /> [This is a sample powerpoint document.]]</td>
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https://edge.rit.edu/content/Resources/public/Help/Wiki%20Files
More wiki Help is available

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