Maintenance and Refactoring of Information Systems



SDM – Secure Data Manager

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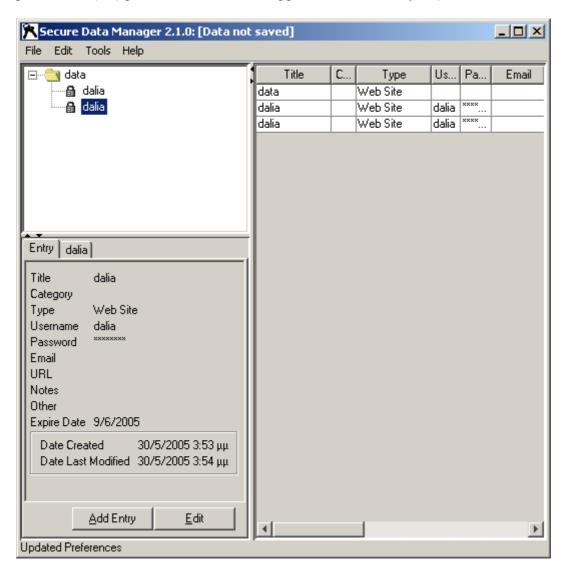
Athens, 2005

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1. Introduction – About SDM

SDM – Secure Data Manager – an application for managing passwords and other private information for web sites, computers, contacts, and other. The project is Open-source (operates under Apache Software License) – so it makes the manager more trustful – everyone can an see the code that protects his (her) passwords; it's sure the application clear of any trojans or bad business practices.



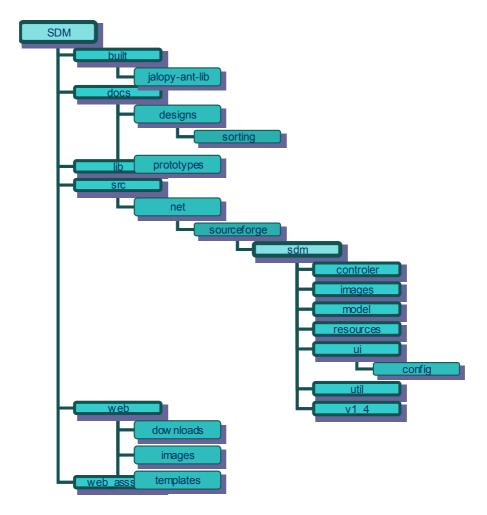
SDM is written in Java v.1.4.1+ – so it is platform independent application. The size of a project is 225 KB of *.jar file, or about 15000 lines of code.

Current release of SDM is 2.1 it showed up in 9th of April, 2005. Now a development team contains 5 people; I have contacted only one – coordinator of the project – Charles McCann.

All information about SDM could be found in its website: http://sdm.sourceforge.net/

2. Design of SDM

2.1. Design of the project



SDM source is organized into 6 first level directories: controler, images, model, resources, ui, util and v1_4. Contents of these directories:

- SecureDataManager.java loading application
- contoller → SDMController.java manages the whole application
- $model \rightarrow all observables, models$
- resources → ResourceFactory.java, *.properties
- ui → SDMFrame.java, all managers
- util → CreatePwd.java, SDMExporter.java, DESwPbE.java...
- v_1.4 → XmlEncoder.java, XmlDecoder.java, PrintEntry.java, PrintTableContent.java

There was very few documentation available about SDM source and design:

- 2 files "how-to" and a news release.
- Classes diagram (which includes only 13 classes of almost 100 classes)
- Use Cases without explanations
- 2 drawings and a document about sorting items in a tree view.
- 12 prototype drawings how should application look like.

2.2. Applied changes

Add "Save password history" feature. This request was submitted in 2003 by one of SDM users.

[839067] Password history

You may monitor this Tracker item after you login (register an account, if you do not already have one)

Submitted By: Nobody/Anonymous - nobody

Last Updated By:

Item Submitter - Tracker Item Submitted

Number of Comments:

0

Category: (?)

None

Assigned To: (?)

Nobody/Anonymous

Status: (?) Open

Summary: (?)
Password history

How about also keeping the last 12 passwords and change

dates.

Date Submitted:
2003-11-09 22:50

Date Last Updated:
No updates since submission
Number of Attachments:
0

Group: (?)

None
Priority: (?)

When this feature is enabled and only a password for an entry is modified, a copy of the data entry node is created as a history reference of previous passwords for that entry.

The idea was, firstly, to add a checkbox where a user can turn on this feature, secondly, to change a behaviour of the manager (to create new Entry, instead of updating the old one), thirdly, save a file as a usual document.

Changed files:

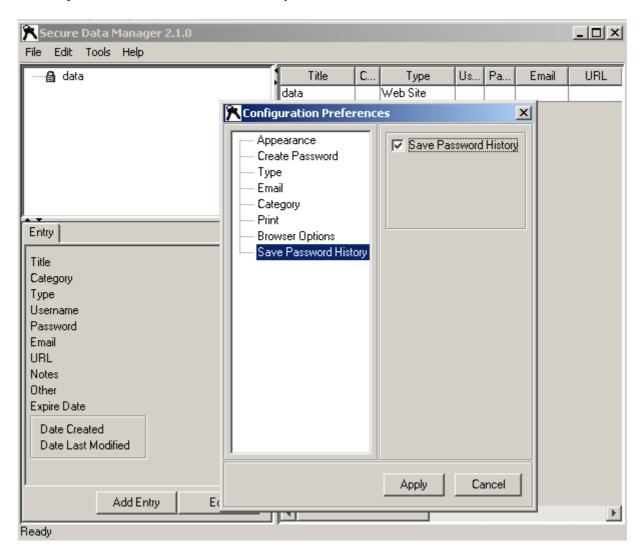
- controller/SDMController.java added observables to listen when "Save Password History" feature is enabled
- ui/EditEntryPanel.java changed method updateChanges(), created new one onlyPasswordChanged()
- ui/config/PreferenceDialog.java loaded another "tab" into Preference dialog
- resources/Resource.properties added new strings.

Added classes:

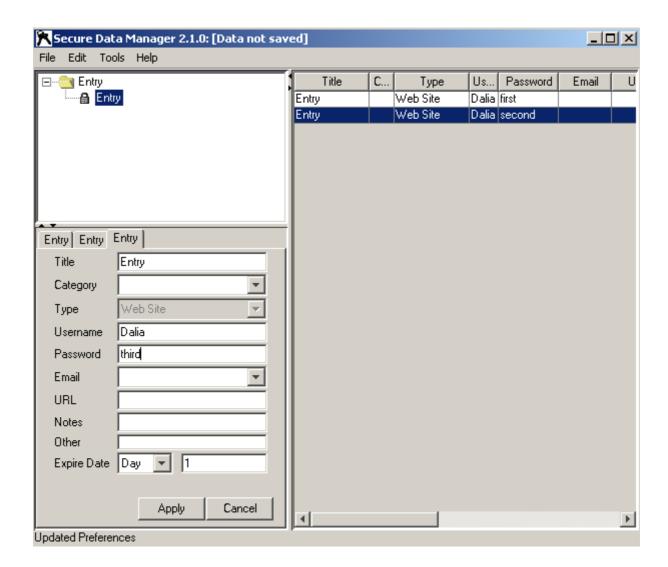
- model/SavePasswordHistoryObservable.java for observing particular event in SDMControler.java
- ui/config/SavePasswordHistoryConfigPanel.java for showing a "tab" in Preferences dialog checkbox with an option "Save password history"

2.3. Implementation

First step – turn on "Save Password History" feature.



Second step – add and update the Entries.



The manager creates a new Entry if only password is changed and other fields (except Expiration date) remain the same. If a user changed password AND expire date a new Entry is created. If a user changed only expire date an Entry is updated.

3. Bibliography

Apache Software License: http://www.apache.org/licenses/LICENSE-2.0.html

SDM project: http://sdm.sourceforge.org

Java API documentation: http://java.sun.com/j2se/1.5.0/docs/api/

Appendix:

1. Source code

SDMController.java

```
package net.sourceforge.sdm.controller;
//...
* This is the Main application. It is the controller of the MVC framework.
public class SDMController {
      private SavePasswordHistoryObservable savePasswordHistoryObservable = new
SavePasswordHistoryObservable();
public void init() {
//...
       setHidePassword(true);
        setSavePasswordHistory (false);
  public void addSavePasswordHistoryObservable(Observer o) {
        savePasswordHistoryObservable.addObserver(o);
public boolean isSavePasswordHistory() {
             return savePasswordHistoryObservable.isPasswordHistorySaving();
public void setSavePasswordHistory(boolean savePasswordHistory) {
        savePasswordHistoryObservable.setSavePasswordHistory(savePasswordHistory);
        Log.out("SDMController: setSavePasswordHistory - selectEntry() ***");
}
```

EditEntryPanel.java

```
package net.sourceforge.sdm.ui;
public class EditEntryPanel extends EntryPanel {
public void updateChanges() {
             //changed just password & save password histor == true
             // then create new entry with onother password
             if (onlyPasswordChanged() && sdm.isSavePasswordHistory()) {
                    LoginEntry newEntry = new LoginEntry();
                    String oldPwd = currentEntry.getPassword() == null ? "" :
currentEntry.getPassword();
                    newEntry.setPassword(oldPwd);
                    mapEntry(newEntry);
                    sdm.addEntry(currentEntry.getParentEntry(), newEntry);
             } else {
                    LoginEntry newEntry = new LoginEntry();
                    mapEntry(newEntry);
                    sdm.updateEntry(currentEntry, newEntry);
                    sdm.completeModifyEntry(this);
             }
      }
/** Checks, if only password and/or exparation date changed
 * @return true if only password and/or exparation date changed,
  * false otherwise
```

```
* /
      private boolean onlyPasswordChanged() {
             String oldPwd = currentEntry.getPassword() == null ? "" :
currentEntry.getPassword();
             String newPwd = password.getText();
             Date oldExpDate = currentEntry.getDateExpires() == null ? new Date() :
currentEntry.getDateExpires();
             String newExpDate = tDateExpires.getText();
             String oldTitle = currentEntry.getTitle() == null ? "" :
currentEntry.getTitle();
             String newTitle = title.getText();
             String oldType = currentEntry.getType() == null ? "" :
currentEntry.getType();
             String newType = comboBoxType.getSelectedItem() == null ? "" : ((Type)
comboBoxType.getSelectedItem()).getTypeName().getName();
             String oldCategory = currentEntry.getCategory() == null ? "" :
currentEntry.getCategory();
             String newCategory = comboBoxCategory.getSelectedItem() == null ? "" :
(String)comboBoxCategory.getSelectedItem();
             String oldUsr = currentEntry.getUsername() == null ? "" :
currentEntry.getUsername();
             String newUsr = username.getText();
             String oldEmail = currentEntry.getEmail() == null ? "" :
currentEntry.getEmail();
             String newEmail = comboBoxEmail.getSelectedItem() == null ? "" :
(String)comboBoxEmail.getSelectedItem();
             String oldURL = currentEntry.getURL() == null ? "" :
currentEntry.getURL();
             String newURL = siteURL.getText();
             String oldNotes = currentEntry.getNotes() == null ? "" :
currentEntry.getNotes();
             String newNotes = notes.getText();
             String oldOther = currentEntry.getOther() == null ? "" :
currentEntry.getOther();
             String newOther = other.getText();
             if ((currentEntry!=null) && (!oldPwd.equals(newPwd))
                           && (!oldExpDate.equals(newExpDate))
                           && (oldTitle.equals(newTitle))
                           && (oldCategory.equals(newCategory))
                           && (oldUsr.equals(newUsr))
                           && (oldEmail.equals(newEmail))
                           && (oldURL.equals(newURL))
                           && (oldNotes.equals(newNotes))
                           && (oldOther.equals(newOther)))
                    return true;
             } else
                    return false;
      }
PreferenceDialog.java
package net.sourceforge.sdm.ui.config;
```

```
package net.sourceforge.sdm.ui.config;
//...
public class PreferenceDialog extends JDialog {
//...
protected void loadPlugins() {
```

```
plugins.add(new SavePasswordHistoryConfigPanel());
}
```

Resource.properties

#added by dalunchia 4/15/05
SavePwdHist=Save Password History

SavePasswordHistoryObservable.java

```
/* ==========
                          ______
* This code is licensed under:
 * SecureDataManager Software License, Version 1.0
* - for license details see http://sdm.sourceforge.net/LICENSE.TXT
* Copyright (c) 2001 by the SecureDataManager Team. All rights reserved.
 * (SecureDataManager Team - see http://sdm.sourceforge.net/team.html)
package net.sourceforge.sdm.model;
import java.util.Observable;
/** Tracks if password history should be saved
* @author dalunchia dalunchia@gmail.com
public class SavePasswordHistoryObservable extends Observable {
   boolean isPasswordHistorySaving = false;
   public void setSavePasswordHistory(boolean isPasswordHistorySaving) {
       this.isPasswordHistorySaving = isPasswordHistorySaving;
       super.setChanged();
       notifyObservers();
   public boolean isPasswordHistorySaving() {
       return isPasswordHistorySaving;
```

SavePasswordHistoryConfigPanel.java

```
/* =========
                           _____
* This code is licensed under:
 * SecureDataManager Software License, Version 1.0
* - for license details see http://sdm.sourceforge.net/LICENSE.TXT
* Copyright (c) 2001 by the SecureDataManager Team. All rights reserved.
 * (SecureDataManager Team - see http://sdm.sourceforge.net/team.html)
package net.sourceforge.sdm.ui.config;
import net.sourceforge.sdm.controller.*;
import net.sourceforge.sdm.resources.*;
import java.awt.*;
import java.util.*;
import javax.swing.JCheckBox;
import javax.swing.JPanel;
* @author dalunchia dalunchia@gmail.com
* @version
```

```
public class SavePasswordHistoryConfigPanel extends JPanel implements PrefPlugin {
    static ResourceBundle res = ResourceFactory.getBundle();
    private SDMController sdm;
    private JPanel jPanel5;
    private JPanel actionPanel;
    private JCheckBox checkBoxSavePasswordHistory;
    /** Creates new ConfigurationPanel */
   public SavePasswordHistoryConfigPanel() {
        super();
    public void init(SDMController sdm) {
        this sdm = sdm:
      initComponents();
    private void initComponents() {
        java.awt.GridBagConstraints gridBagConstraints;
        actionPanel = new javax.swing.JPanel();
        jPanel5 = new javax.swing.JPanel();
        checkBoxSavePasswordHistory = new javax.swing.JCheckBox();
        getContentPane().setLayout(new java.awt.GridBagLayout());
        actionPanel.setLayout(new java.awt.GridLayout(2, 1));
        actionPanel.setBorder(new javax.swing.border.EtchedBorder());
        jPanel5.setLayout(new java.awt.GridLayout(2, 0));
        actionPanel.add(jPanel5);
        gridBagConstraints = new java.awt.GridBagConstraints();
        gridBagConstraints.gridx = 0;
        gridBagConstraints.gridy = 11;
        gridBagConstraints.gridheight = 3;
        gridBagConstraints.fill = java.awt.GridBagConstraints.BOTH;
        gridBagConstraints.ipadx = 2;
        gridBagConstraints.ipady = 2;
        gridBagConstraints.anchor = java.awt.GridBagConstraints.NORTH;
gridBagConstraints.insets = new java.awt.Insets(2, 0, 2, 0);
        getContentPane().add(actionPanel, gridBagConstraints);
        checkBoxSavePasswordHistory.setText(res.getString("SavePwdHist"));
        checkBoxSavePasswordHistory.setEnabled(true);
        sdm.setSavePasswordHistory(checkBoxSavePasswordHistory.isSelected());
        checkBoxSavePasswordHistory.setSelected(sdm.isSavePasswordHistory());
        jPanel5.add(checkBoxSavePasswordHistory);
    // *** Interface PrefPlugin ***
    public String getTitle() {
        return res.getString("SavePwdHist");
    public Container getContentPane() {
        return this;
    public void applyChanges() {
       sdm.setSavePasswordHistory(checkBoxSavePasswordHistory.isSelected());
```

}

2. Letters

Tema: about sdm project

Nuo: "Dalia Martisiute" <dalia@ninjutsu.lt>

Data: 2005 Kovas 19, 7:44 pm, Šeš **Kam:** mccann@users.sourceforge.net

Prioritetas: Normalus

Nustatymai: Peržiūrėti visas antraštes | Rodyti spausdinamą versiją | Peržiūrėti žinutės detales

Hello!

I am Erasmus student, my name is Dalia, now I am studing in Greece, Athens university of Economy and Business.

In one course (called Maintenance & Refactoring of Information Systems) we have to choose an open source project and improve it (a little bit). I searched for a project in sourceforge.net and found sdm. It is very interesting project, I want to take part in development process.

I have downloaded sdm source from cvs, but it does not compile. There are missing some libraries or smth.. Maybe you could help me?

Best regards, Dalia

Tema: Re: about sdm project

Nuo: "Charles McCann" < charles mccann@yahoo.com>

Data: 2005 Kovas 23, 7:32 am, Tre

Kam: dalia@ninjutsu.lt

Prioritetas: Normalus

Nustatymai: Peržiūrėti visas antraštes | Rodyti spausdinamą versiją | Peržiūrėti žinutės detales

Ok. One of the developers on this project recently said that he was getting $\ensuremath{\mathsf{S}}$

compiler errors too.

Unfortunately, I wasn't getting them even after pulling down a new copy from CVS.

Another

developer though didn't have any problems either.

Are you compiling with Ant? describe what you are using and the versions. What are the errors that you are getting?

Thanks.

Tema: Re: about sdm project

Nuo: "Dalia Martisiute" <dalia@ninjutsu.lt>

Data: 2005 Kovas 23, 1:05 pm, Tre

Kam: "Charles McCann" < charles mccann@yahoo.com>

Prioritetas: Normalus

Nustatymai: Peržiūrėti visas antraštes | Rodyti spausdinamą versiją | Peržiūrėti žinutės detales

Ηi,

I am working with eclipse. I tried to build a project without Ant. But it didn't work out. With Ant it is building without errors. Thank you.

One more thing. My course assignment is to add one (or two) components into a chosen project. In SDM project page I read that SDM doesn't have «Password history» and «No activity lock» and other more difficult things. Maybe I could add these components, or maybe there are more urgent works? I really would like to be a part of SDM development.

Best regards, Dalia

Tema: Re: about sdm project

Nuo: "Charles McCann" < charles mccann@yahoo.com>

Data: 2005 Kovas 23, 10:50 pm, Tre

Kam: dalia@ninjutsu.lt

Prioritetas: Normalus

Those all sound good. Well, first, you'll need to get the code building the code. There are about 3 libraries (jars) that are in the lib directory that aren't used anymore since we are using JDK 1.4+. I'll have to pull those out. However, if you are building with Ant and using our build.xml then problems. That should run fine. Is your classpaths, JAVA HOME, etc all setup correctly? What are you seeing as your build errors? I'll try doing a complete checkout on machine and see if I can duplicate the problem. Also, I'm close to having a release. I've been waiting on some changes from one of the developers, but I don't think he'll be able to get them done in time. Your additions will have to wait at least a little bit (less than a month) so I can get this release tagged and out the door.

Tema: Re: about sdm project

Nuo: "Charles McCann" < charles mccann@yahoo.com>

Data: 2005 Kovas 26, 12:01 am, Šeš

Kam: dalia@ninjutsu.lt

Prioritetas: Normalus

Nustatymai: Peržiūrėti visas antraštes | Rodyti spausdinamą versiją | Peržiūrėti žinutės detales

any progress so far?
any feedback on my last email?

Tema: Re: about sdm project

Nuo: "Dalia Martisiute" <dalia@ninjutsu.lt>

Data: 2005 Kovas 26, 4:35 pm, Šeš

Kam: "Charles McCann" < charles mccann@yahoo.com>

Prioritetas: Normalus

Hello,

I am sorry, no progress so far. I had some other projects to do. And here in Greece it was holiday yesterday (Greece independence day), university computer rooms are closed.

Dalia

> any progress so far?

> any feedback on my last email?

Tema: Re: about sdm project

Nuo: "Dalia Martisiute" <dalia@ninjutsu.lt>

Data: 2005 Kovas 28, 5:38 pm, Pir

Kam: "Charles McCann" < charles mccann@yahoo.com>

Prioritetas: Normalus

Nustatymai: Peržiūrėti visas antraštes | Rodyti spausdinamą versiją | Peržiūrėti žinutės detales

Hello,

I tried again to compile the project. If I am compiling with build.xml, it is OK. No errors, no warning, just perfect!

After that, I tried to build it using eclipse. I setuped all classpaths, added libraries and then built the project. And got a lot of errors. (pasting them in email don't work very well, so I attached an image with the building problems). I am using java 1.5.0 Hope it will help you.

Best regards, Dalia

Tema: Re: about sdm project

Nuo: "Charles McCann" < charles mccann@yahoo.com>

Data: 2005 Kovas 30, 9:05 am, Tre

Kam: dalia@ninjutsu.lt

Prioritetas: Normalus

looks like that class UserBrowserLauncherObservable is a new class in our cvs. i just re-checked everything out of cvs and it worked. try pulling it from cvs again.

Also note, I don't have all the jars in the lib directory active. only these 3:
<include name="castor.jar"/>
<include name="kunststoff.jar"/>
as of 1.4.x, the other security jars have been included in the standard java libs.

if that doesn't work, let me know. at least you can build via the build.xml. via eclipse, that is just as easy as building the other way.

Tema: Fwd: [Sdm-team] 2.1 - release build

Nuo: "Charles McCann" < charles mccann@yahoo.com>

Data: 2005 Balandis 6, 2:15 am, Tre

Kam: "Dalia Martisiute" <dalia@ninjutsu.lt>

Prioritetas: Normalus

```
fyi...
if you are signed up on the mailing list, you will get these emails.
--- Charles McCann <charlesmccann@yahoo.com> wrote:
> From: Charles McCann <charlesmccann@yahoo.com>
> To: SDM Team <sdm-team@lists.sourceforge.net>
> Subject: [Sdm-team] 2.1 - release build
> Date: Mon, 4 Apr 2005 20:56:07 -0700 (PDT)
> Team,
> this is the 2.1 sdm release. http://sdm.sourceforge.net/beta/
> we've added a lot of great features to the app. we wanted a few more in
but this will
> have
> to suffice for now.
> let me know if you find any problems with it. i've been using the 2.1
dev builds
and haven't
> had
> any problems except for the ones i recently fixed.
> as of right now, don't check in any code unless it is for a defect fix.
we'll get
this out very
> soon and then you can start checking in code again.
> i had to go relearn how to update the web site and release files to
sourceforge.
it has been a
> long time. :) anyway, site updated. screenshots added to site and sf.
>
>
> -Charles
```

```
Tema: Re: Fwd: [Sdm-team] 2.1 - release build

Nuo: "Dalia Martisiute" <dalia@ninjutsu.lt>

Data: 2005 Balandis 8, 6:28 pm, Pen

Kam: "Charles McCann" <charlesmccann@yahoo.com>

Prioritetas: Normalus

Nustatymai: Peržiūrėti visas antraštes | Rodyti spausdinamą versija | Peržiūrėti žinutės detales
```

```
Hello,

Thank you for a letter.

Where can I download the source? I tried to checkout from cvs, but I am not sure it is the new release.

Dalia M.
```

Tema: Re: Fwd: [Sdm-team] 2.1 - release build

Nuo: "Charles McCann" < charles mccann@yahoo.com>

Data: 2005 Balandis 9, 7:29 am, Šeš

Kam: dalia@ninjutsu.lt

Prioritetas: Normalus

Nustatymai: Peržiūrėti visas antraštes | Rodyti spausdinamą versiją | Peržiūrėti žinutės detales

from cvs, it should be the latest as long as you didn't pull from a cvs tag.

However, this

weekend I'll be creating the release and it will have both the source and classes in

a zip out on

the download site.

Tema: Re: about sdm project

Nuo: "Dalia Martisiute" <dalia@ninjutsu.lt>

Data: 2005 Gegužė 30, 3:19 pm, Pir

Kam: "Charles McCann" < charles mccann@yahoo.com>

Prioritetas: Normalus

Nustatymai: Peržiūrėti visas antraštes | Rodyti spausdinamą versiją | Peržiūrėti žinutės detales

Hello,

I have finished to implement one new feature in sdm: save passwords history. It just adds a new Entity in a table. If you like to add it into an official version I would very pleased to send you "my version" of a project (or to add it into cvs).

Best regards, Dalia M.

P.S. I am compiling the whole project within Eclipse development environment and have no problems at all! :-)

Tema: Re: about sdm project

Nuo: "Charles McCann" < charles mccann@yahoo.com>

Data: 2005 Gegužė 30, 8:32 pm, Pir

Kam: dalia@ninjutsu.lt

Prioritetas: Normalus

Great! I think I understand the feature, but just explain it in a little more detail so I can be sure.

Do you know how to merge with CVS? If not, I can help you get your code into the project. If you feel up to merging, then I can give you access to uploading the code after I take a look at it.

So, either way, send me your code and let me know.

Thanks.

Tema: Re: about sdm project

Nuo: "Dalia Martisiute" <dalia@ninjutsu.lt>

Data: 2005 Gegužė 31, 12:01 pm, Ant

Kam: "Charles McCann" < charles mccann@yahoo.com>

Prioritetas: Normalus

Nustatymai: Peržiūrėti visas antraštes | Rodyti spausdinamą versiją | Peržiūrėti žinutės detales

Hello,

I am preparing a document about all my work in this semester. It is not a final version now, but I hope you will find all the answers to your questions in it.

Also I am sending jar with all the source files of sdm project.

Best regards, Dalia

P.S. I know, how to use CVS - I am using CVS at home server :)

Tema: Re: about sdm project

Nuo: "Charles McCann" < charles mccann@yahoo.com>

Data: 2005 Birželis 1, 9:53 am, Tre

Kam: dalia@ninjutsu.lt

Prioritetas: Normalus

Very cool presentation doc. By the way, you have my last name spelled "MacCann"... but it should be "McCann". ;-) Also, this sentence doesn't make much sense (might need to reword): "When this feature is turned on, it should instead of updating an Entry to new one - if only password has changed." ... maybe reword as such... "when this feature is enabled and only a password for an entry is modified, of the data entry node is created as a history reference of previous passwords for that I like the new feature! In the preferences section, we'll probably want to add some simple "help text" on that feature so users know what/how it works. The code you gave me was the class files (no java files). So, I wasn't able too look at the code as such. I did find a defect while testing though. When applying the changes after you are done editing the entry and a new copy of the entry is created, the edit pane stays open and doesn't close... there is no way to make it close unless you cancel. And doing such, it didn't look like the change was saved to the object. -Charles

Tema: Re: about sdm project

Nuo: "Dalia Martisiute" <dalia@ninjutsu.lt>

Data: 2005 Birželis 1, 10:54 am, Tre

Kam: "Charles McCann" < charles mccann@yahoo.com>

Prioritetas: Normalus

Nustatymai: Peržiūrėti visas antraštes | Rodyti spausdinamą versiją | Peržiūrėti žinutės detales

thank you for comments!

Now I am sending a "new version" of a document (it includes source code) and an archive with source files.

Dalia

Tema: Re: about sdm project

Nuo: "Charles McCann" < charles mccann@yahoo.com>

Data: 2005 Birželis 1, 6:37 pm, Tre

Kam: dalia@ninjutsu.lt

Prioritetas: Normalus

Nustatymai: Peržiūrėti visas antraštes | Rodyti spausdinamą versiją | Peržiūrėti žinutės detales

Dalia, It looks good. So, if the defect is fixed, I'd like for you to add/merge your source code

in with the repository if you want. (btw, you should also add the english words

into the

translated resource bundle files so that the translators know what to translate.)

Sign up on

Sourceforge and send me your username. Once I have your username, I'll add you to

the member list

of developers so you can merge your changes (which should be very easy if you have

already merged

with the $2.1\ \text{released}$ version). If you want to stay a memeber, I can leave you on

and you can

sign up on the developers mailing list. We are just now talking about what we'll be

doing next

now that 2.1 is released.

If this is too much and you'd rather I merge it in, just let me know.

Thanks!

-Charles