A JAVA

Project Report

on

Identity and Access Management System [**IAM** Project]

Submitted by

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Contents

1.SUBJECT DESCRIPTION

[1.1]Introduction

[1.1.1]Overview:

This report contains all the detail from start to end of IAM project development.

[1.1.2]Background:

Keeping track of personal information disclosed on the Internet, as well as maintaining high standards of internal control and information security within companies has become increasingly complicated. Identity and Access Management applications lay at the core of resolving these types of problems.

Identity and Access Management (IAM) can be defined as following:

> A comprehensive set of processes that enable end users to securely access a broad range of internal and external IT systems that controls the digital representation of users and manage information about identities.

[1.1.3]Motivation:

This report and its subject, namely IAM, has been greatly influenced by our will to learn the concepts of a new programming tool **JAVA**.

What we encountered is that

- Java is Easy to write and more readable and eye catching.
- Most of the concepts are drew from C++ thus making Java learning simpler.

[1.1.4]Objective

The main goal of this project is to develop an application using Java which can automatically connect to a database and store information in the database and also to retrieve, modify and delete the information in the database.

The following are the objectives that the application needs to satisfy:

1. **Authenticates** a user
2. **Create** an Identity
3. **Update** an Identity
4. **Delete** an Identity

[1.1.5] Development Environment

PLATFORM USED : **Windows 7**

LANGUAGE USED : **Core Java**

IDE : **Eclipse**

DATABASE : **Derby**

2.SUBJECT ANALYSIS

[2.1] Major Features

- Highly user-friendly
- Platform Independent
- Easy to use
- Robust
- Data entry restricted to avoid errors
- Clean separation of various components
- Easy Modification

[2.2] Application Feasibility

- This current application is a prototype of a system that can be created for employing a highly secured environment of Identity and access Management.
- The costs are much reduced as we do not depend on graphical interface, instead look for a high system performance
- Most of the components used such as the development platform, servers, and databases are open source.

[2.3] Data Description

The data description and data access objects are clearly specified below.

The Schema for data is **<IDENTITY_UID,IDENTITY_DISPLAYNAME,IDENTITY_EMAIL>**

IDENTITY_UID **:** INT, Auto generated, Unique

IDENTITY_DISPLAYNAME : STRING

IDENTITY_EMAIL : STRING

DAOs

- **Authenticate** **:** This module takes user name and password. This module validates auser before login to IAM system

  Input parameter : User name, password

Output parameters : Authentication Accepted / Denied

- **createIdentity :** This process is used to create a new identity in the database.
  Inputparameter : Uid,Name, Email(Id is generated automatically)
  Output parameters : Entry added to database

- **deleteIdentity** : This process is used to delete an identity from the database.
  Inputparameter : Uid
  Output parameters : Identity deleted from the database.

- **updateIdentity** : This process is used to change any record already present in the database and updates the database accordingly.
  Input parameter : Uid
  Output parameters **:** Identity modified in the database.

[2.4]Expected Results

- The end result of the application can be looked as a highly sophisticated, user friendly and secure tool created for Identity and access management.
- This tool is capable of authenticating the user, creating a new identity, updating an existing identity, and deleting an identity from the database.
- The database used is a derby database.
- The tool needs to communicate with the database and return with the results in quick time.

[2.5]Scope and limitations

Scope:

- Privacy: Online transaction, whether financial or exchange of information, could be greatly improved by the adoption of IDM solutions which focus on privacy.
- Improved user experience, Cost savings, security policy enforcement etc.
- Centralization of user administration.

Limitations:

- Does not open the system to manage permissions and attributes of users.
- Possibility of decrypting the system password.
- Lack of user GUI/web interface which could disturb first time users.
- Lack of added feature like in modern address book.

Evolution:

- We are working to inhance the IAM as a complete web-based software, users and login and keep details, export details, import to new system, send SMS from there and save other information.

3.CONCEPTION

[3.1]Chosen Algorithm

The algorithm that we have used is the exact match algorithm. It can be seen below.

Searching is done with the **identity email**

[3.2]Data Structures

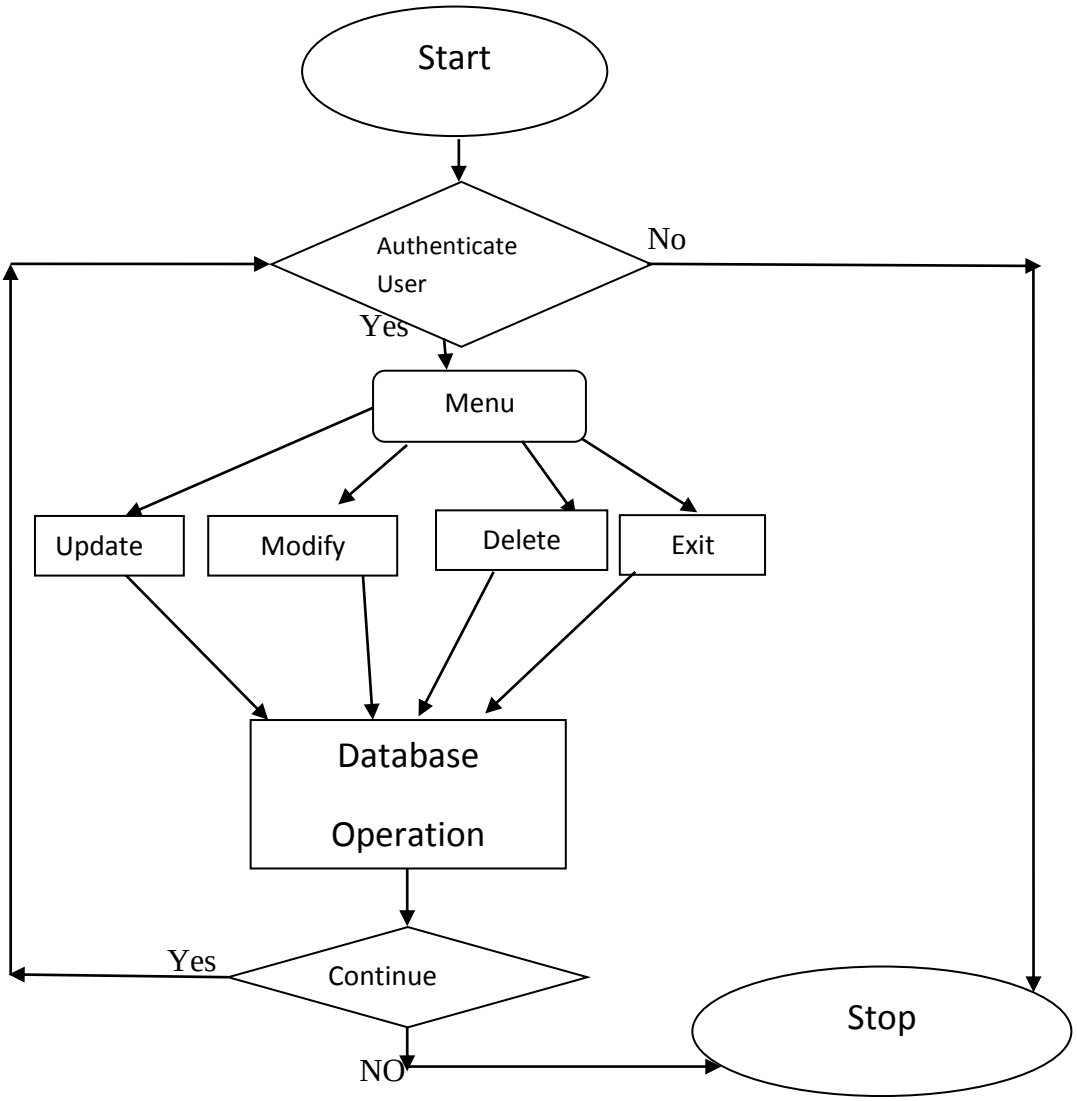
The data structures provided by the Java utility package are very powerful and perform a wide range of functions. These data structures consist of the following interface and classes:

- Enumeration
- BitSet
- Vector
- Stack
- Dictionary
- Hashtable
- Properties

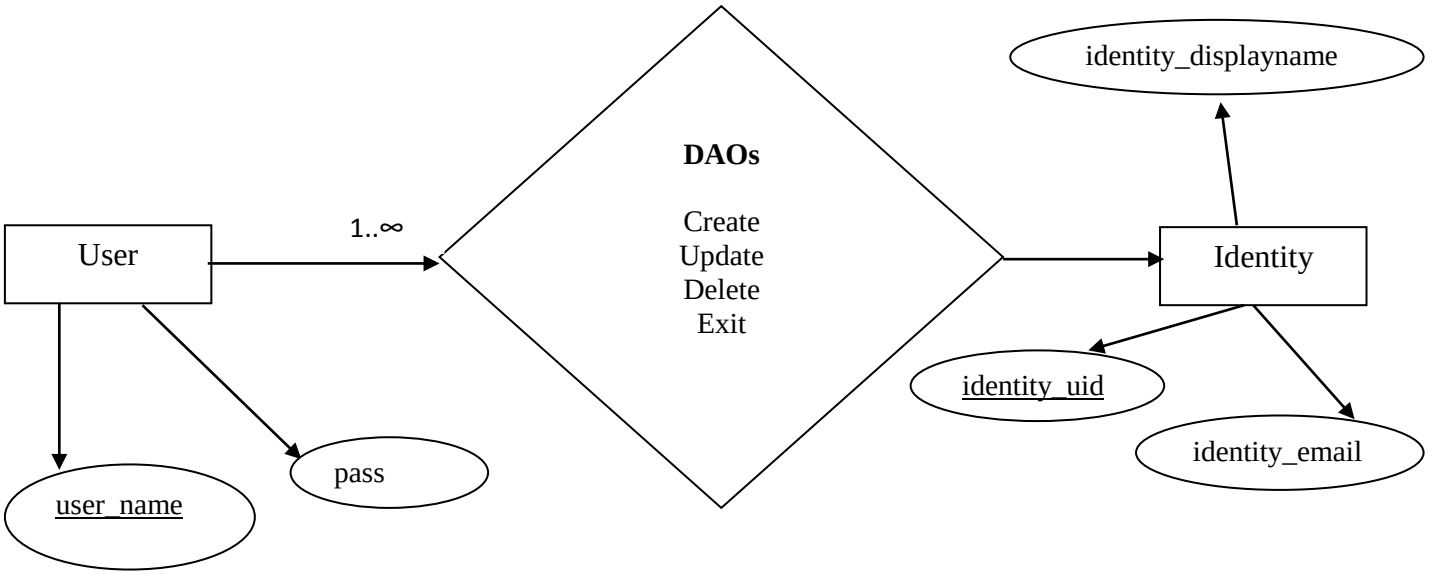
However the data structure used in this project is **LIST ,**which is a collection of elements.List is used in the project to store the collection of identities.

String is also a widely used datastructure in this project

[3.3]Global Application Flow



[3.4] Global Schema and major schema features



4.CONSOLE OPERATIONS DESCRIPTIONS

Console Operations Implemented in this Systems are

1. Authenticate user
2. Create an Identity
3. Update an existing Identity
4. Delete an Identity

Each Operations are explained below

- **Authenicate User**

  User authentication is done by an **authenticate** method , that takes input as username and password, and calls a **validateUser** method which connects to the database and authenticates the user if provided credentials are correct, else will not authenticate the user and system stops.

- **Create an Identity**

  This console operations allows an authenticated user to create a new identity. Identity Uid, name and email are provided by the user.The method used for creating a new identity is **createIdentity.**

- **Update an Identity**

  This console operation allows a user to update an existing identity. To update an identity the user must provide the uid of an identity, which is to be updated.The method used is **updateIdentity**

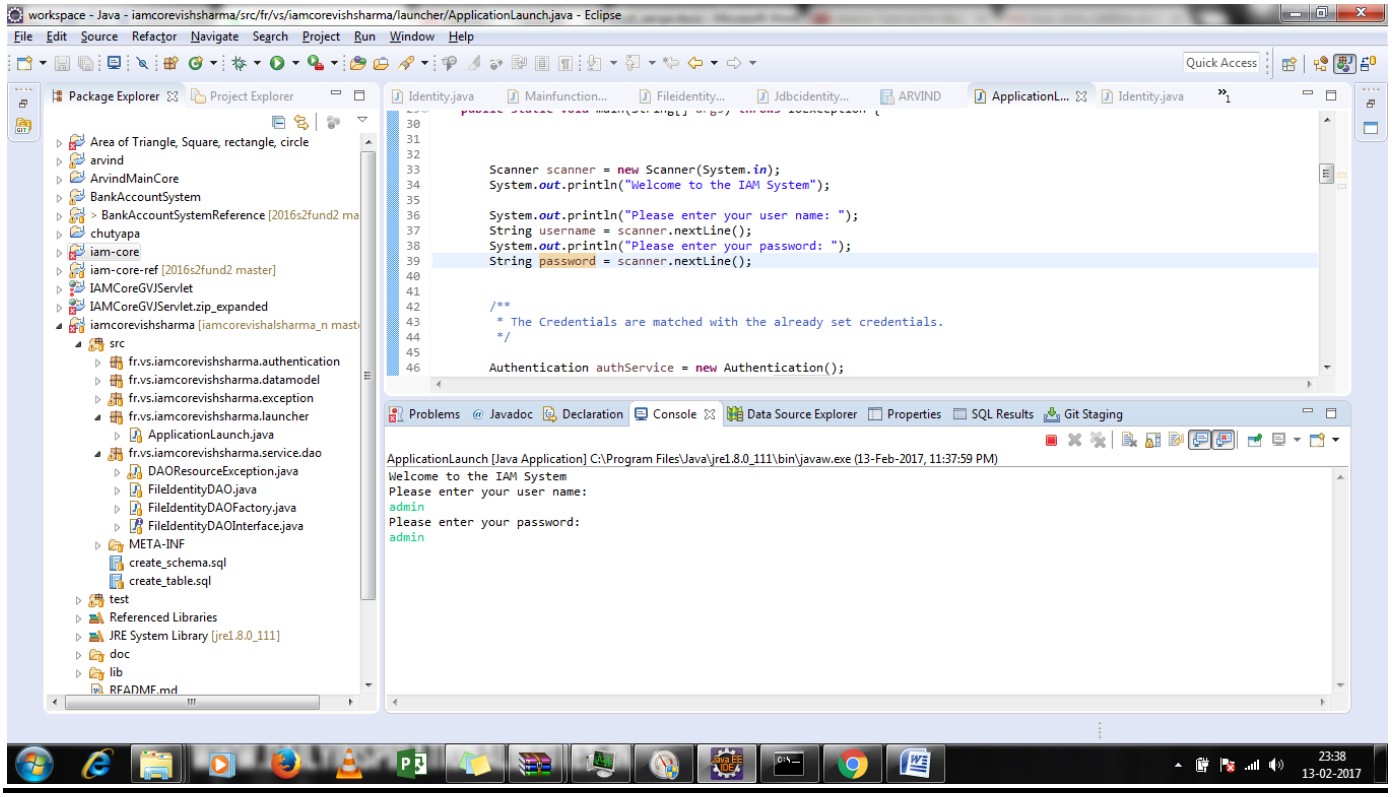
- **Delete an Identity**

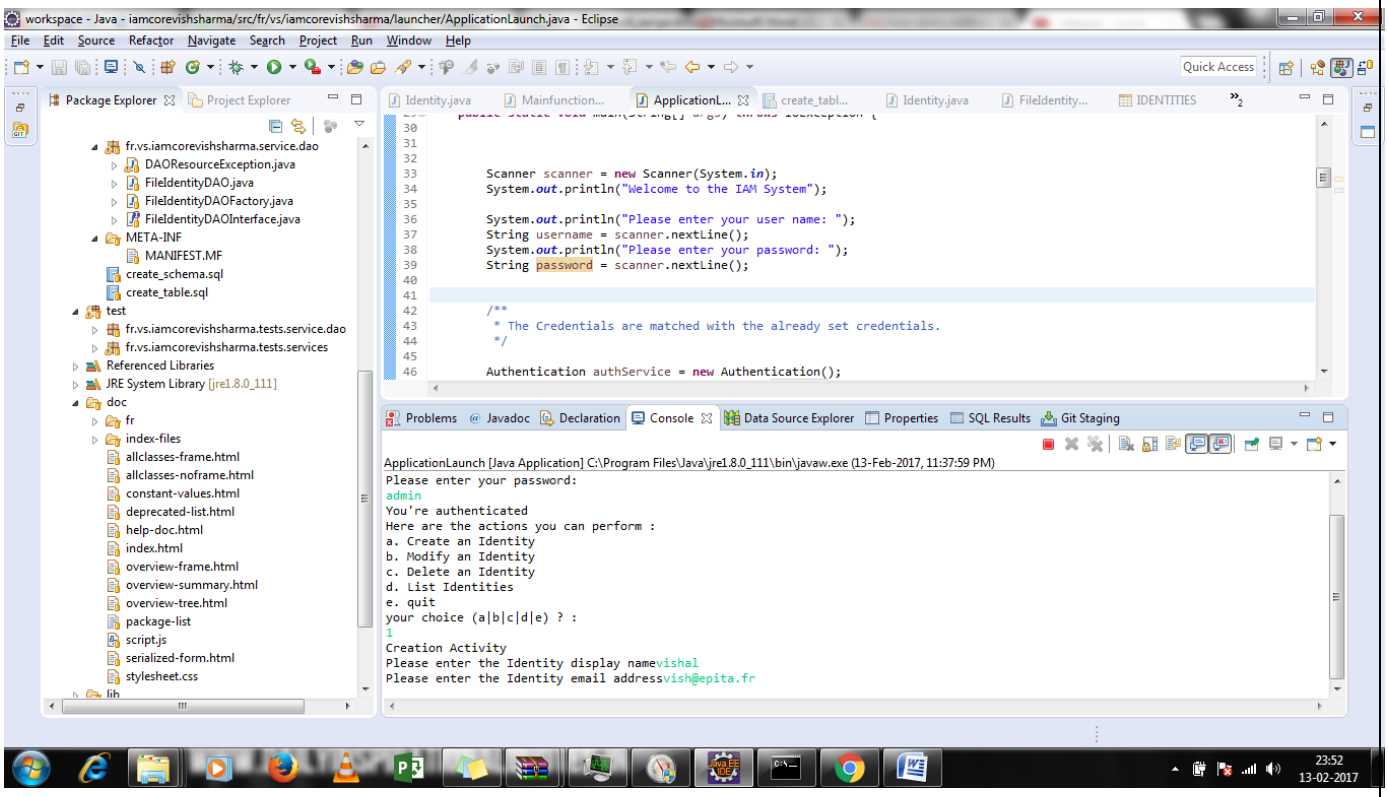
  This console operation allows a user to delete an existing identity and the user is supposed toprovide the uid of the identity which is to be deleted. Method used is **deleteIdentity**

5.CONFIGURATION

- Username : admin
- Password : admin
- Database : **Derby**
- Drivers : Derby Embedded Driver
- Port : **1527**

6.SCREENSHOTS

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File Edit Source Refactor Navigate Search Project Run Window Help
Package Explorer
Project Explorer
fr.vs.iamcorevishsharma.service.dao
DAOResourceException.java
FileIdentityDAO.java
FileIdentityDAOFactory.java
FileIdentityDAOInterface.java
META-INF
MANIFEST.MF
create_schema.sql
create_table.sql
test
fr.vs.iamcorevishsharma.tests.service.dao
fr.vs.iamcorevishsharma.tests.services
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Identity.java
Mainfunction...
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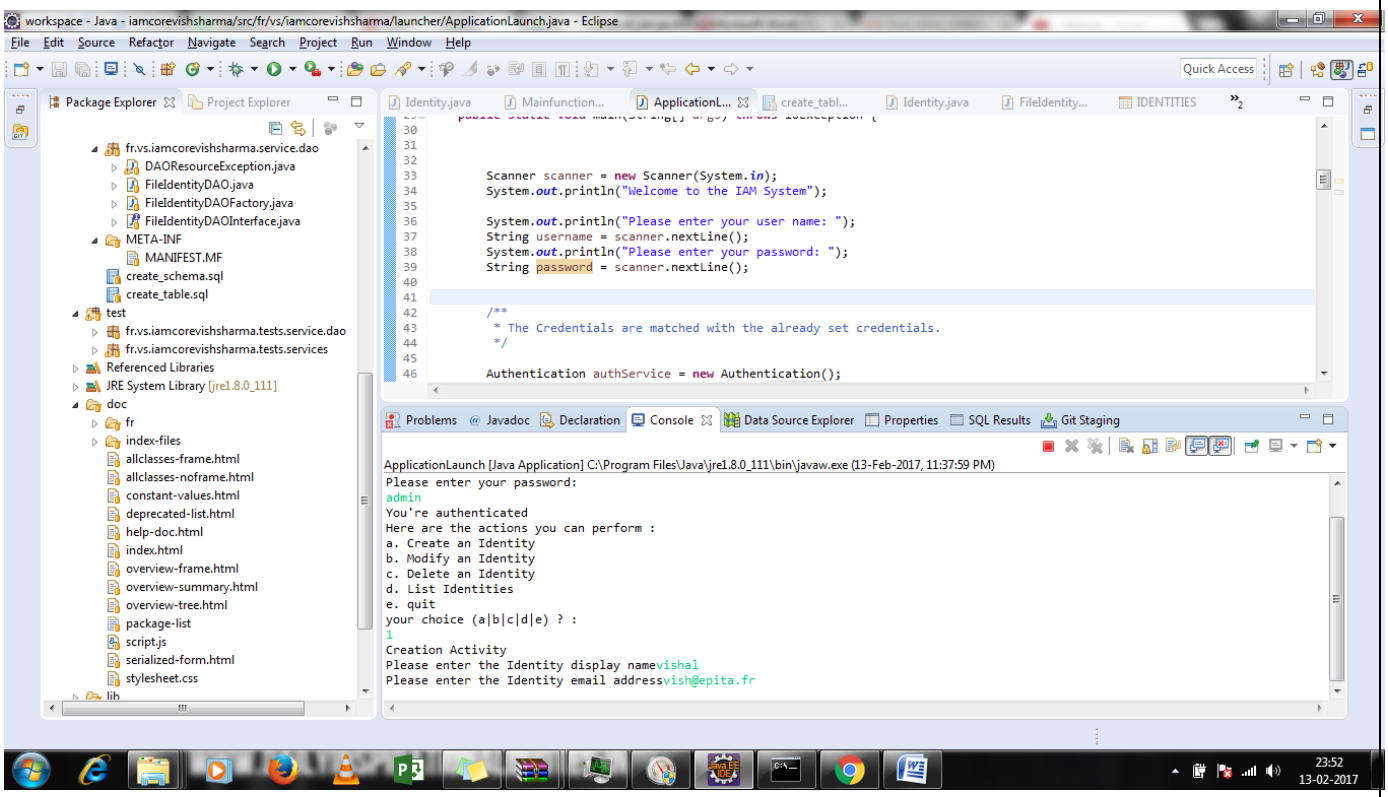
IDENTITIES
Scanner scanner = new Scanner(System.in);
System.out.println("Welcome to the IAM System");
System.out.println("Please enter your user name: ");
String username = scanner.nextLine();
System.out.println("Please enter your password: ");
String password = scanner.nextLine();
/**
* The Credentials are matched with the already set credentials.
*/
Authentication authService = new Authentication();
Problems
Javadoc
Declaration
Console
Data Source Explorer
Properties
SQL Results
Git Staging
ApplicationLaunch [Java Application] C:\Program Files\Java\jre1.8.0_111\bin\javaw.exe (13-Feb-2017, 11:37:59 PM)
Please enter your password:
admin
You're authenticated
Here are the actions you can perform :
a. Create an Identity
b. Modify an Identity
c. Delete an Identity
d. List Identities
e. quit
your choice (a|b|c|d|e) ? :
1
Creation Activity
Please enter the Identity display namevishal
Please enter the Identity email addressvish@epita.fr
23:52
13-02-2017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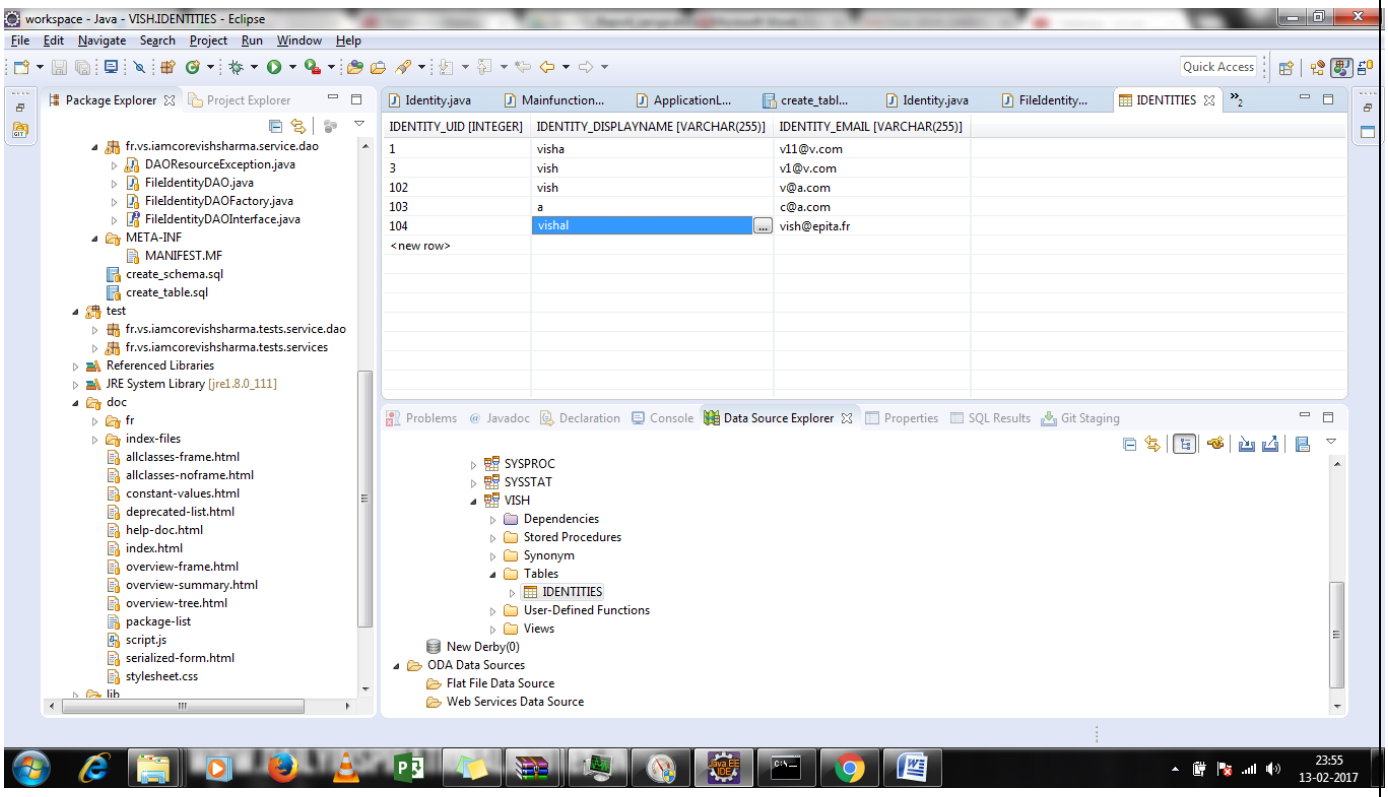
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1 visha v11@v.com
3 vish v1@v.com
102 vish v@a.com
103 a c@a.com
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SYSPROC
SYSSTAT
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Dependencies
Stored Procedures
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Tables
IDENTITIES
User-Defined Functions
Views
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ODA Data Sources
Flat File Data Source
Web Services Data Source
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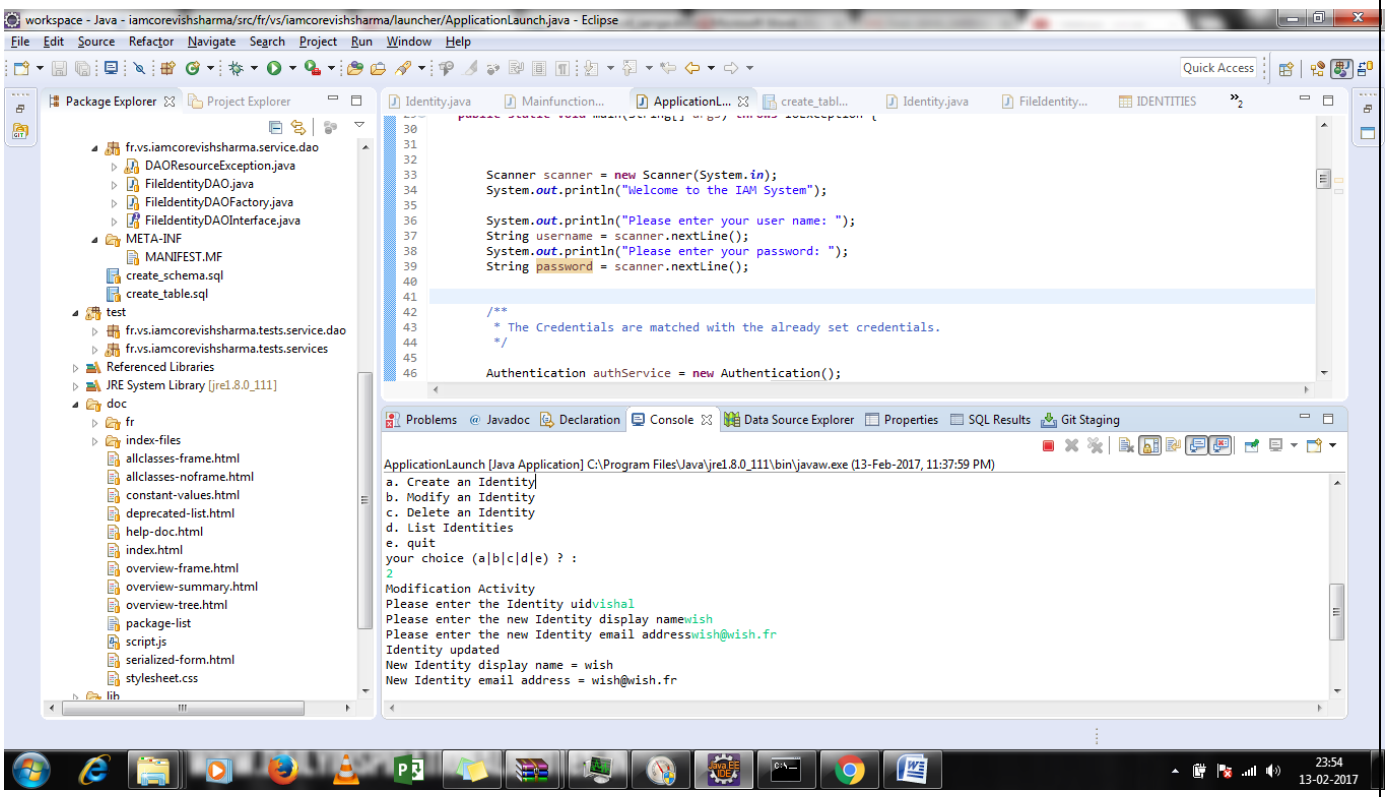
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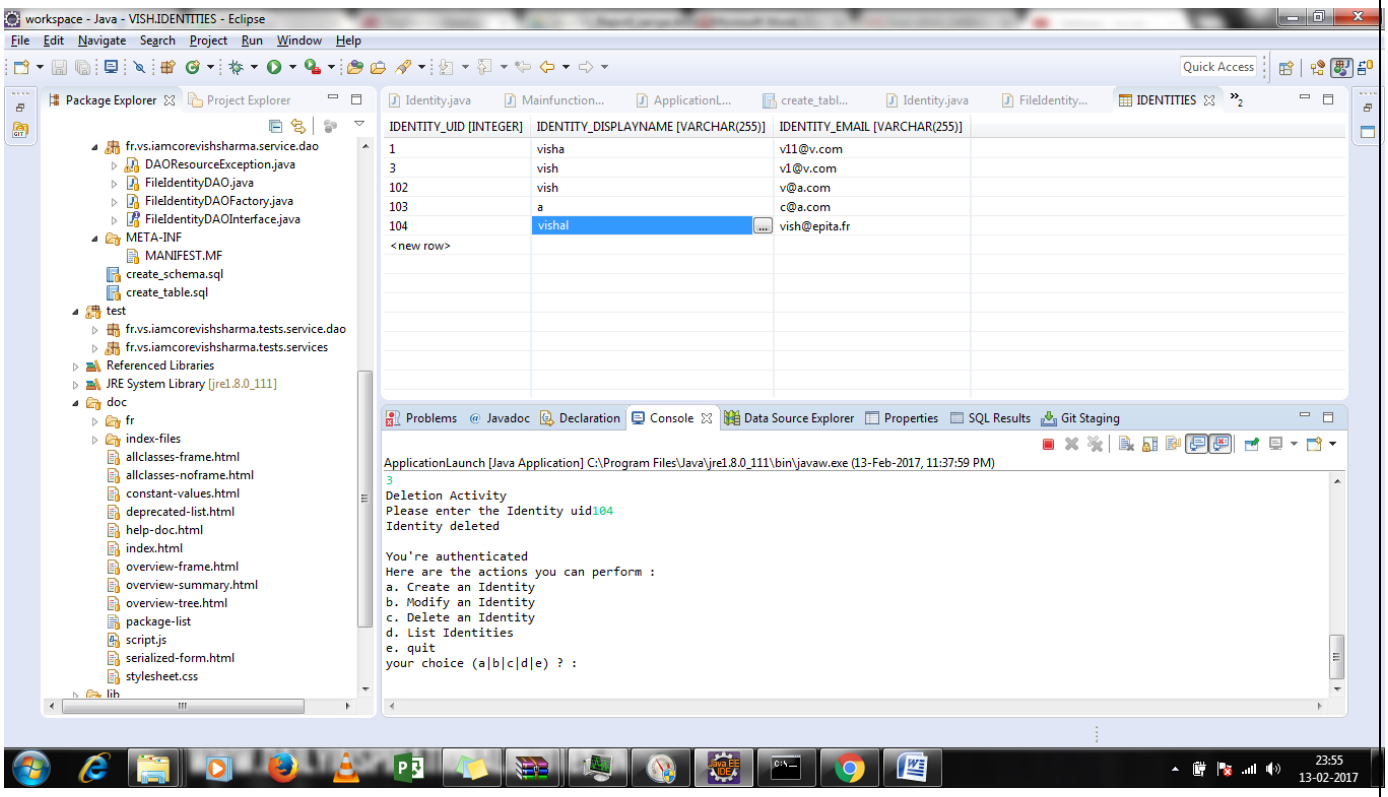
c. Delete an Identity
d. List Identities
e. quit
your choice (a|b|c|d|e) ? :
2
Modification Activity
Please enter the Identity uidvishal
Please enter the new Identity display namewish
Please enter the new Identity email addresswish@wish.fr
Identity updated
New Identity display name = wish
New Identity email address = wish@wish.fr
23:54
13-02-2017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3
Deletion Activity
Please enter the Identity uid104
Identity deleted
You're authenticated
Here are the actions you can perform :
a. Create an Identity
b. Modify an Identity
c. Delete an Identity
d. List Identities
e. quit
your choice (a|b|c|d|e) ? :
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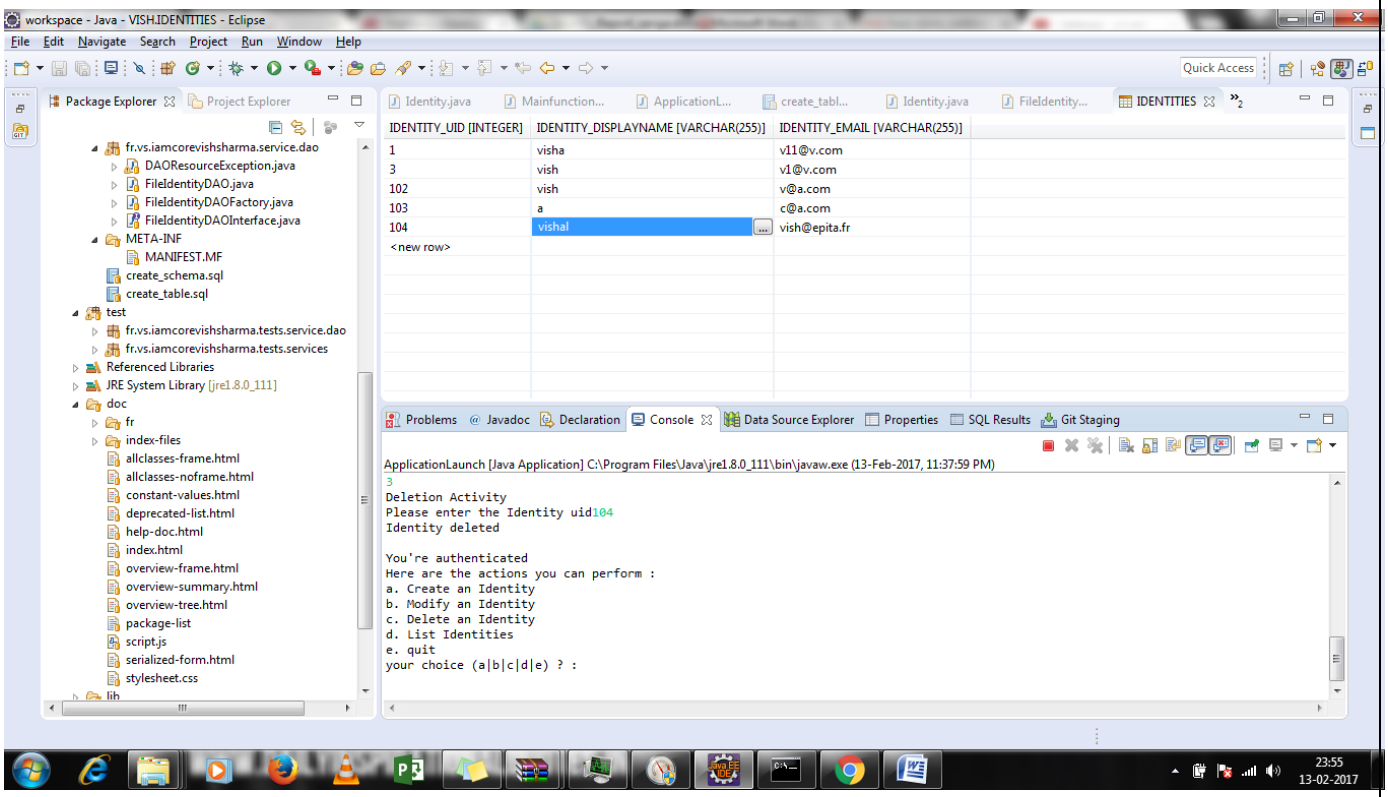
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Deletion Activity
Please enter the Identity uid104
Identity deleted
You're authenticated
Here are the actions you can perform :
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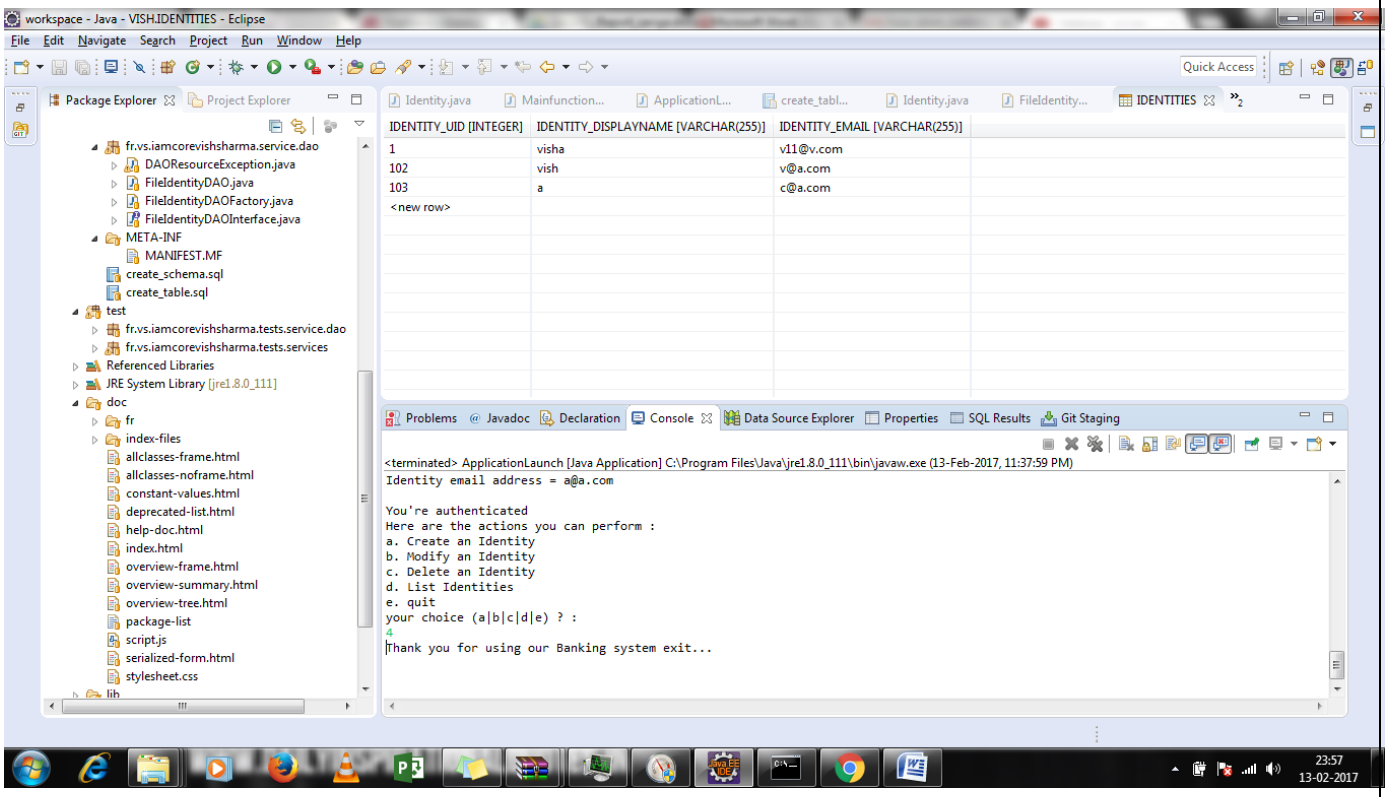
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IDENTITY_EMAIL [VARCHAR(255)]
1
visha
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102
vish
v@a.com
103
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c@a.com
<new row>
Problems
Javadoc
Declaration
Console
Data Source Explorer
Properties
SQL Results
Git Staging
<terminated> ApplicationLaunch [Java Application] C:\Program Files\Java\jre1.8.0_111\bin\javaw.exe (13-Feb-2017, 11:37:59 PM)
Identity email address = a@a.com
You're authenticated
Here are the actions you can perform :
a. Create an Identity
b. Modify an Identity
c. Delete an Identity
d. List Identities
e. quit
your choice (a|b|c|d|e) ? :
4
Thank you for using our Banking system exit...
23:57
13-02-2017

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