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Java Fundamental Project

The IAM_Core



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Description

Introduction

The I am core project is the final project presented to the students of the Java Fundamentals class of Msc Fall students 2017. This project is the implementation of a user's Management system. This application does the CREATE, UPDATE DELETE and SEARCH Operations, the project was partially developed during the semester's class and has been completed during the last week after the end of the semester.

The goal of this project is to understand how to program in Java like creating and using the Java Developer Kit APIs, and also to persist data in databases, or executing an application on a Java application Server. This Identity Management software is quite basic. The main goal is to manage users of an Information System.

- Access, create and modify user information
- Persist user's data in a database.
- Be robust, capable of good performance

Purpose

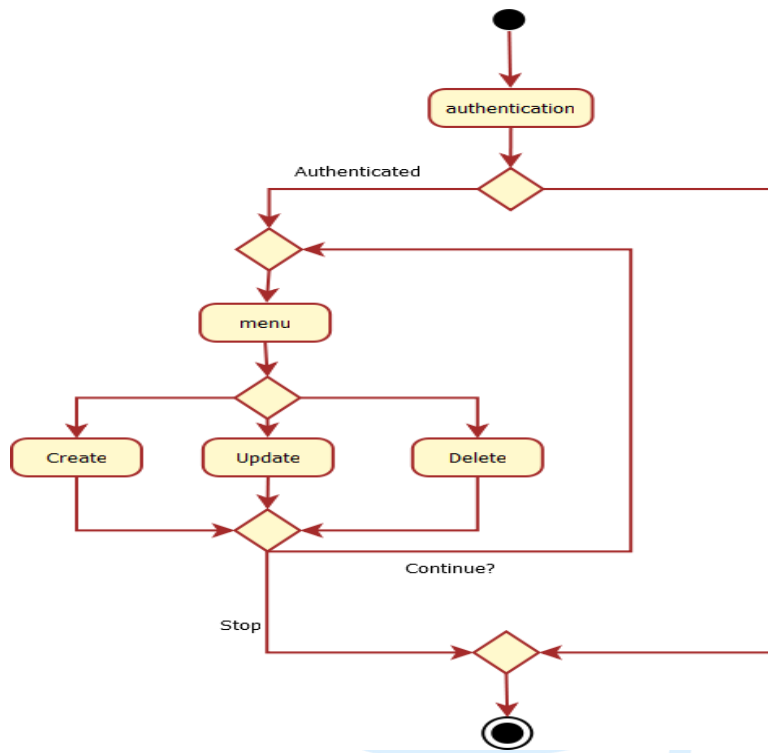
The document is to make the user understand the project and to show the end to end specifications of the project.

Analysis

overview of project

The user will be asked to enter the login details, if the credentials are correct the user gets to do the CRUD operation. If the login details are wrong the user will not be allowed to enter into the system but will generate the user-defined exceptions that are user-friendly. Once the Login is successful, the console application will show three options 1. Create, 2. Search 3. Update, 4. Delete 5. Create user for the login purpose, 6. Logout or exit.

Flow chart for global activity diagram



Major Features

This project has many major features,

1. Authentication: A User can be able to login into system by using some credentials A user cannot log in if the user id and password is wrong
2. CRUD Operations Create, Update and Delete
3. Validations and User-friendly exceptions.

Application Feasibility

With the knowledge obtained from the Java class during the semester and taking into account the development done in class, we can easily see that this application is completely feasible under the Java platform. Also, we can clearly see the utility of building such an application that allows us to clearly see the process of managing entities.

Environment

Operating System: Windows 10

Language: Java

Frame work: Eclipse

CRUD Operations

Login

Desired user can login with his unique credentials. If the credentials are wrong the user cannot login. This is mainly for the authentication purpose.

```
Main (1) [Java Application] C:\Program Files\Java\jre1.8.0_152\bin\javaw.exe (21-Feb-2018, 12:27:13 PM)
-----Welcome to IAM Core-----
please enter Username and Password
User Name : dimple
Passowrd : dimple
--_-----Successfully Logged In-----_---
1. Create Identity
2. Search, Update & Delete Identity
3. Create User (for login purpose)
4. Logout or Exit
your choice :
```

User Creation

For login, user needs a user name and password, so he can create a user name and password, it comes only when authentication fails. Therefore, the user can create his credentials and will be navigated to the login page again if creation is successful.

```
Main (1) [Java Application] C:\Program Files\Java\jre1.8.0_152\bin\javaw.exe (21-Feb-2018, 12:27:13 PM)
-----Welcome to IAM Core-----
please enter Username and Password
User Name : dimple
Passowrd : dimple
--_-----Successfully Logged In-----_---
1. Create Identity
2. Search, Update & Delete Identity
3. Create User (for login purpose)
4. Logout or Exit
your choice : 3
-----User Creation
please enter User
Username : sandeep
password : sandeep
User Successfully Created.
1. Create Identity
2. Search, Update & Delete Identity
3. Create User (for login purpose)
4. Logout or Exit
your choice : |
```

Main (1) [Java Application] C:\Program Files\Java\jre1.8.0_152\bin\javaw.exe (21-Feb-2018, 12:35:14 PM)

```

-----Welcome to IAM Core-----
please enter Username and Password
User Name : sandeep
Passowrd : sandeep
|--_-----Successfully Logged In-----_---
1. Create Identity
2. Search, Update & Delete Identity
3. Create User (for login purpose)
4. Logout or Exit
your choice :

```

User Search, Deletion and Update

User can search all the identities available. User can only update his password and the user name and user can be deleted. This can be only done when the respective user logs into the system and for authentication purpose the user needs to login again.

Main (1) [Java Application] C:\Program Files\Java\jre1.8.0_152\bin\javaw.exe (21-Feb-2018, 12:35:14 PM)

```

Passowrd : sandeep
--_-----Successfully Logged In-----_---
1. Create Identity
2. Search, Update & Delete Identity
3. Create User (for login purpose)
4. Logout or Exit
your choice : 2
-----Search Identity-----
--Available Identities :
-----
      Id : 21      Name : Dimpi      Email : dimpi@mail.com
-----
      Id : 10      Name : sandeep      Email : sandeep@mail.com
-----
      Id : 4       Name : dimple      Email : dimple@gmail.com
-----
      Id : 34      Name : bharath      Email : bharath@gmail.com
-----
      Id : 123456789      Name : srinivas      Email : srinivas@gmail.com
-----
1. Delete
2. Update
3. Go Back <-|
please enter your choice :1
-----Delete Identity-----
For exit press "E"
please enter a UID from the above listed Identities :
34
Identity delete successfully

```

```

-----
1. Delete
2. Update
3. Go Back <-|
please enter your choice :2
-----Update Identity-----
For exit press "E"
please enter a UID from the above listed Identities :
123456789
please enter Identity :
Name :
sandeep
Email :
srinivas@gmail.com
Identity update successfully
1. Delete
2. Update
3. Go Back <-|
please enter your choice :2
-----Update Identity-----
For exit press "E"
please enter a UID from the above listed Identities :
123456789
please enter Identity :
Name :
vadlamudi
Email :
srinivas@gmail.com
Identity update successfully
1. Delete
2. Update
3. Go Back <-|
please enter your choice :3

```

Functional Specifications

Classes

A class is nothing but a blueprint or a template for creating different objects which defines its properties and behaviors. Java class objects exhibit the properties and behaviors defined by its class. A class can contain fields and methods to describe the behavior of an object.

```

\ > iam-core-ref [2017s2_fundamental_a master]
\ > JRE System Library [JavaSE-1.8]
\ > src
\ > fr.epita.iam.datamodel
\ > Identity.java
\ > User.java
\ > fr.epita.iam.exceptions
\ > IdentityCreationException.java
\ > IdentityDataException.java
\ > IdentityDeleteException.java
\ > IdentitySearchException.java
\ > IdentityUpdateException.java
\ > fr.epita.iam.launcher
\ > Main.java
\ > fr.epita.iam.services
\ > IdentityXMLDAO.java
\ > fr.epita.iam.services.configuration
\ > ConfigurationService.java
\ > fr.epita.iam.services.dao
\ > IdentityDAO.java
\ > IdentityFileDAO.java
\ > IdentityJDBCDAO.java
\ > LoginDAO.java
\ > LoginJdbcDAO.java
\ > test
\ > Referenced Libraries
\ > lib
\ > sql
\ > configuration.pptx
\ > Rapport.doc
\ > readme.md
\ > test.xml
\ > vocabulaire.md

```

Launcher Class

When the public static void main() method in the Main class is invoked (by the Java launcher), it searches and loads an instance of class demo.launcher.AppLauncher which implements Launcher. Then, the code calls Launcher.launch() to delegate the execution of the rest of the application by passing in a String parameter.



launcher.java



Exceptions

An exception is an event, which occurs during the execution of a program, that disrupts the normal flow of the program's instructions. When an error occurs within a method, the method creates an object and hands it off to the runtime system. This block of code is called an exception handler.



IdentityCreationException.java



IdentityDataException.java



IdentityDeleteException.java



IdentitySearchException.java



IdentityUpdateException.java

Data Model Classes

DataModel is an abstraction around arbitrary data binding technologies that can be used to adapt a variety of data sources for use by JavaServer Faces components that support per-row processing for their child components (such as UIData)



Services



Database Framework

Table Identities

Column	Type	Null	Default
IDENTITY_UID	Int (11)	No	-
IDENTITY_EMAIL	Varchar (255)	Yes	Null
IDENTITY_DISPLAYNAME	Varchar (255)	Yes	Null

Table Login

Column	Type	Null	Default
Username	Varchar (20)	No	-
Password	Int (20)	No	-

The project uses derby client which is provided in the lib folder



derbyclient.jar

Parameters

The parameters used in this project are user name and password for login credentials and UID for user identification

Field	Component	Alphabet	Number
User Name	Text	Yes	Yes
Password	Text	Yes	Yes
Email	Text	Yes	Yes
UID	Text	Yes	Yes

User can Create, Search, Update and Delete all the above parameters.

Example Output

Main (1) [Java Application] C:\Program Files\Java\jre1.8.0_152\bin\javaw.exe (21-Feb-2018, 12:27:13 PM)

-----Welcome to IAM Core-----

please enter Username and Password

User Name : dimple

Passwowrd : dimple

--_-----Successfully Logged In-----_---

1. Create Identity
 2. Search, Update & Delete Identity
 3. Create User (for login purpose)
 4. Logout or Exit
- your choice :

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Main (1) [Java Application] C:\Program Files\Java\jre1.8.0_152\bin\javaw.exe (21-Feb-2018, 12:27:13 PM)

-----Welcome to IAM Core-----

please enter Username and Password

User Name : **dimple**

Passowrd : **dimple**

--_-----Successfully Logged In-----_---

1. Create Identity
2. Search, Update & Delete Identity
3. Create User (for login purpose)
4. Logout or Exit

your choice : **3**

-----User Creation

please enter User

Username : **sandeep**

password : **sandeep**

User Successfully Created.

1. Create Identity
2. Search, Update & Delete Identity
3. Create User (for login purpose)
4. Logout or Exit

your choice : |

Main (1) [Java Application] C:\Program Files\Java\jre1.8.0_152\bin\javaw.exe (21-Feb-2018, 12:35:14 PM)

-----Welcome to IAM Core-----

please enter Username and Password

User Name : **sandeep**

Passowrd : **sandeep**

|--_-----Successfully Logged In-----_---

1. Create Identity
2. Search, Update & Delete Identity
3. Create User (for login purpose)
4. Logout or Exit

your choice :



VD Sowmya/DS Srinivas Java Fundamental Project

Main (1) [Java Application] C:\Program Files\Java\jre1.8.0_152\bin\javaw.exe (21-Feb-2018, 12:35:14 PM)

Password : sandeep

--_-----Successfully Logged In-----_--

1. Create Identity
2. Search, Update & Delete Identity
3. Create User (for login purpose)
4. Logout or Exit

your choice : 2

-----Search Identity-----

--Available Identities :

Id : 21	Name : Dimpi	Email : dimpi@mail.com
Id : 10	Name : sandeep	Email : sandeep@mail.com
Id : 4	Name : dimple	Email : dimple@gmail.com
Id : 34	Name : bharath	Email : bharath@gmail.com
Id : 123456789	Name : srinivas	Email : srinivas@gmail.com

1. Delete
2. Update
3. Go Back <-|

please enter your choice :1

-----Delete Identity-----

For exit press "E"

please enter a UID from the above listed Identities :

34

Identity delete successfully

Main (1) [Java Application] C:\Program Files\Java\jre1.8.0_152\bin\javaw.exe (21-Feb-2018, 12:44:20 PM)

1. Delete
2. Update
3. Go Back <-|

please enter your choice :2

-----Update Identity-----

For exit press "E"

please enter a UID from the above listed Identities :

123456789

please enter Identity :

Name :

sandeep

Email :

srinivas@gmail.com

Identity update successfully

1. Delete
2. Update
3. Go Back <-|

please enter your choice :2

-----Update Identity-----

For exit press "E"

please enter a UID from the above listed Identities :

123456789

please enter Identity :

Name :

vadlamudi

Email :

srinivas@gmail.com

Identity update successfully

1. Delete
2. Update
3. Go Back <-|

please enter your choice :3

Bibliography

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2. <http://www.codejava.net/java-se/jdbc/jdbc-tutorial-sql-insert-select-update-and-delete-examples>
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5. <https://www.javacodeexamples.com/>
6. <https://www.javatpoint.com/example-to-connect-to-the-mysql-database>

