JAVA MINI-PROJECT
ASSIGNMENT-2

April 21, 2020

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S4 CSE
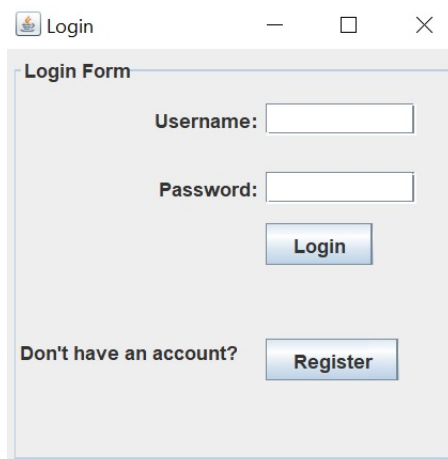
Roll No. 53

Contents

Chapter 1

Research Artefacts Access System

1.1 AIM

To create a Java AWT project to manage a Research Artefact Access system in a laboratory.

1.2 OUTPUT AND EXPLANATION

When the app is made to run, at first a login screen appears. However, unregistered users can register themselves by clicking on the 'Register' button on the bottom portion of the screen.

1.2.1 Registration

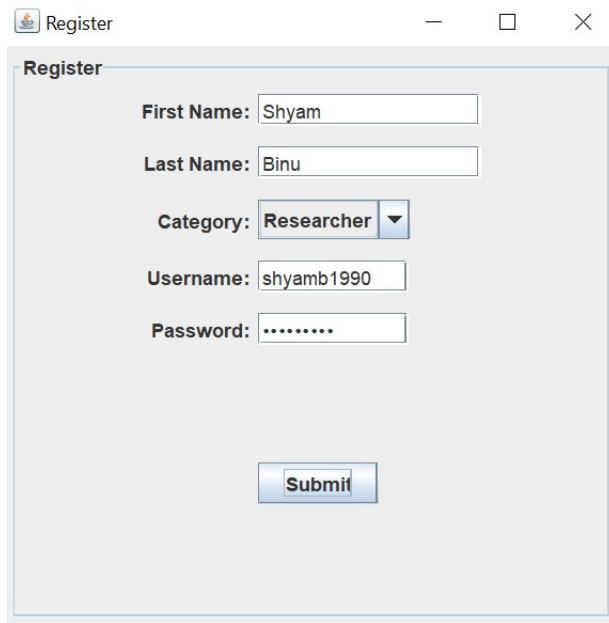A registration screen appears, into which the user can enter his/her details including name,position, username, password etc.
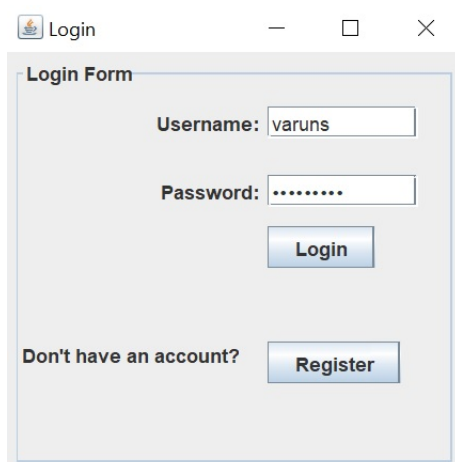

1.2.2 Logging into a Superior user

An account for a Superior user named 'Varun Sharma' is already made. We are logging into it

1.2.3 Assigning Researchers to Superiors

Currently, no dependant researchers are added to this superior's profile. We can add researchers by clicking on the 'Add more researchers' button.
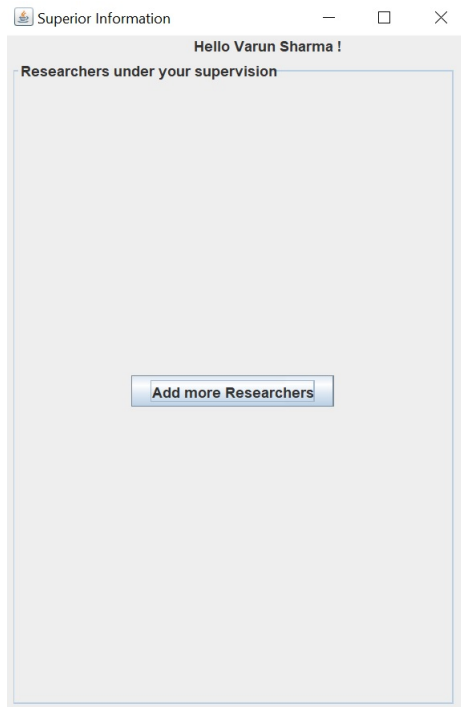
Upon clicking on the 'Add more researchers' button, the following dialog box appears from where we can researchers who haven't been assigned to any other superior yet.
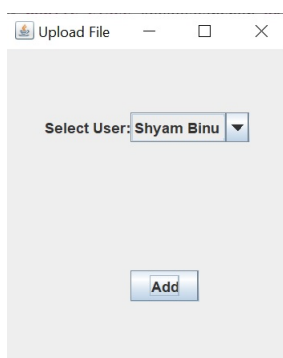
We select 'Shyam Binu', the researcher we just added.

Now, the profile of the superior 'Varun Sharma' which contains the names of the researchers working under him contains the name 'Shyam Binu'
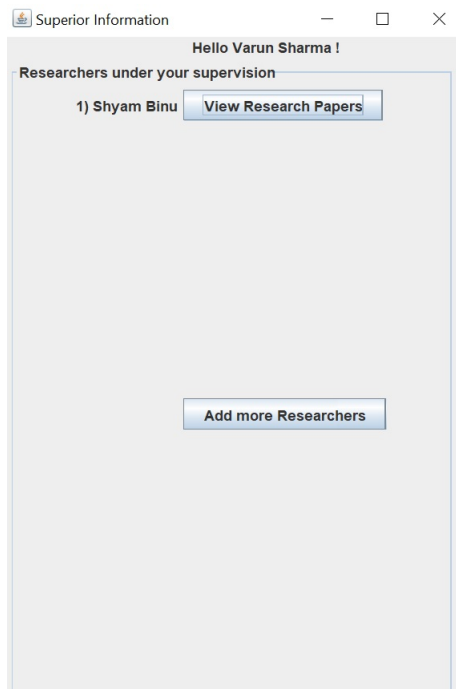
Now, let's login to another 'Superior user' named 'Ravi Kumar'
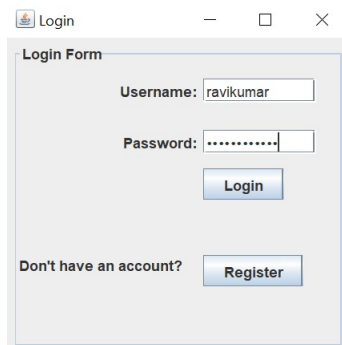
The profile for Ravi Kumar looks as follows, listing all the researchers working under him. In this case : Rohan Mathew and Ryan Mathew
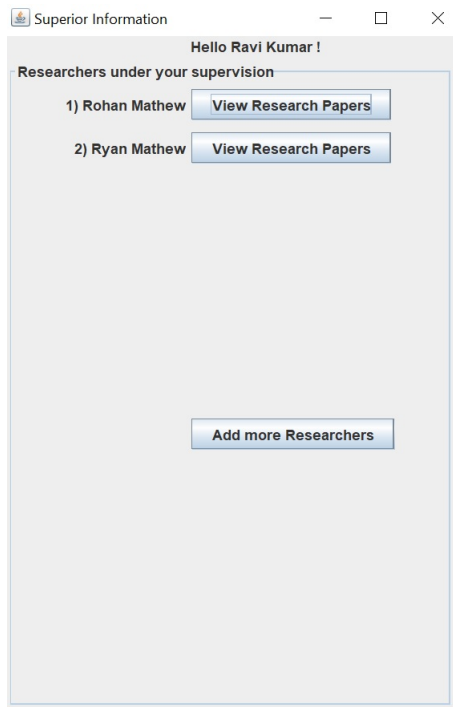
1.2.4 Selecting a researcher working under a superior

Upon the selecting a particular researcher by clicking on the 'View Research Papers' button beside him, we can view the names of all the research papers that the researcher has written.

Here,we are selecting 'Rohan Mathew', to view his research papers.
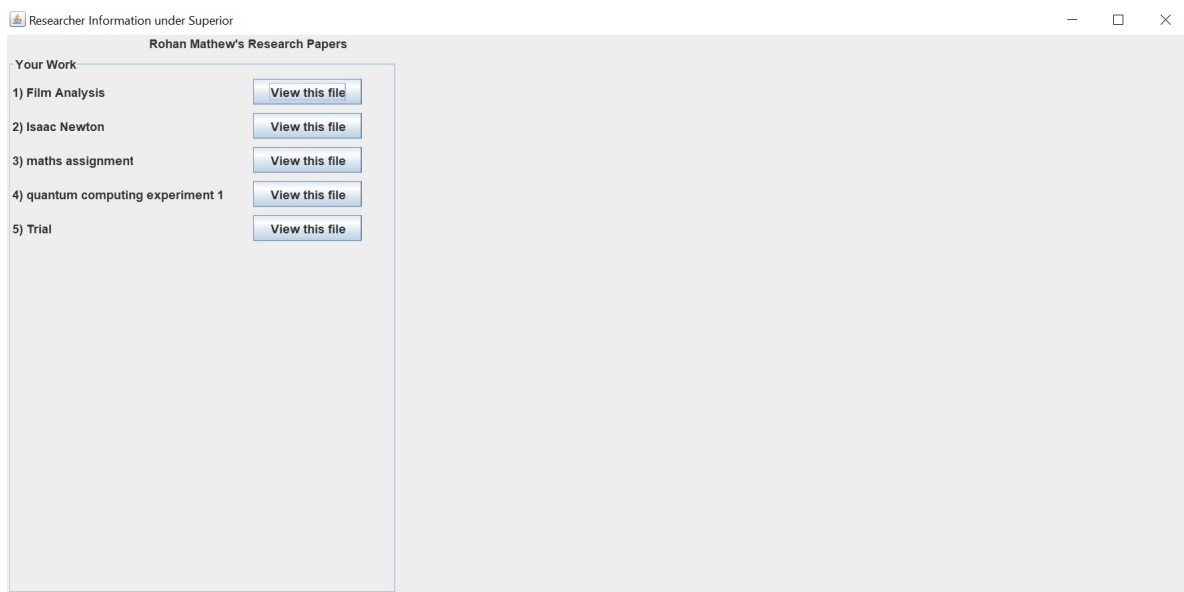
Now a screen opens up showing the list of research papers that 'Rohan Mathew' has published on the left hand part of the screen.

1.2.5 Viewing research papers of a dependant researcher

Upon clicking 'View file', the right hand part of the screen displays the corresponding research paper, as shown below. Let us select the research paper 'Film Analysis'.
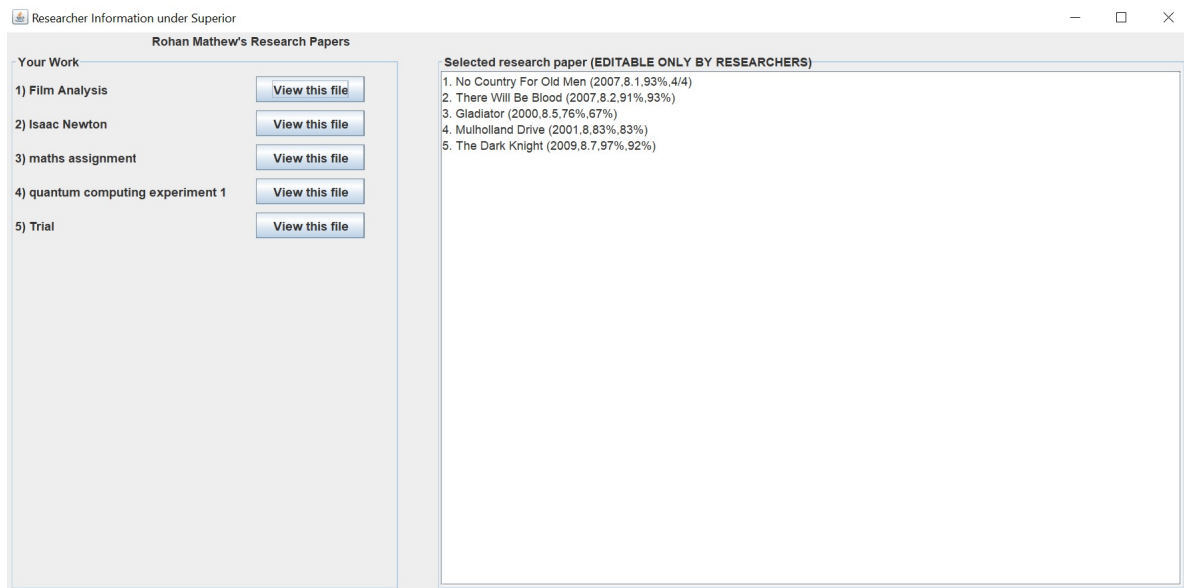
However, the superior cannot make any edits to the file being viewed.

1.2.6 Logging into a Researcher user

Now , let us view the profile of a researcher named 'Ryan Mathew', who has already been registered.
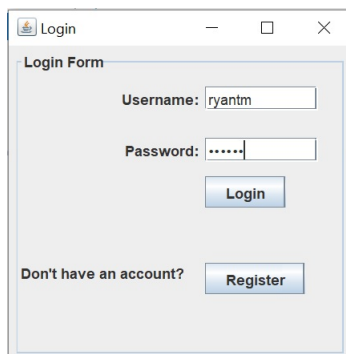
The profile of the researcher 'Ryan Mathew', shows the list of all the research papers that

he has done on the left hand side.
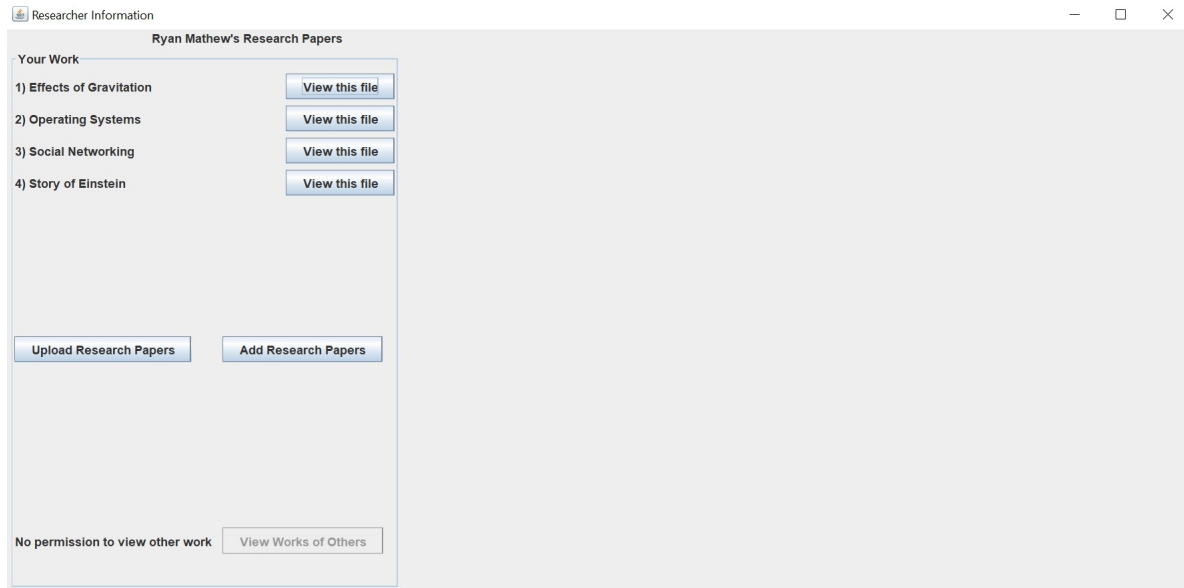
1.2.7 Viewing and Editing Research Papers

Upon clicking 'View file', the left hand part of the screen displays the corresponding research paper, as shown below. Let us select the research paper named 'Operating Systems'
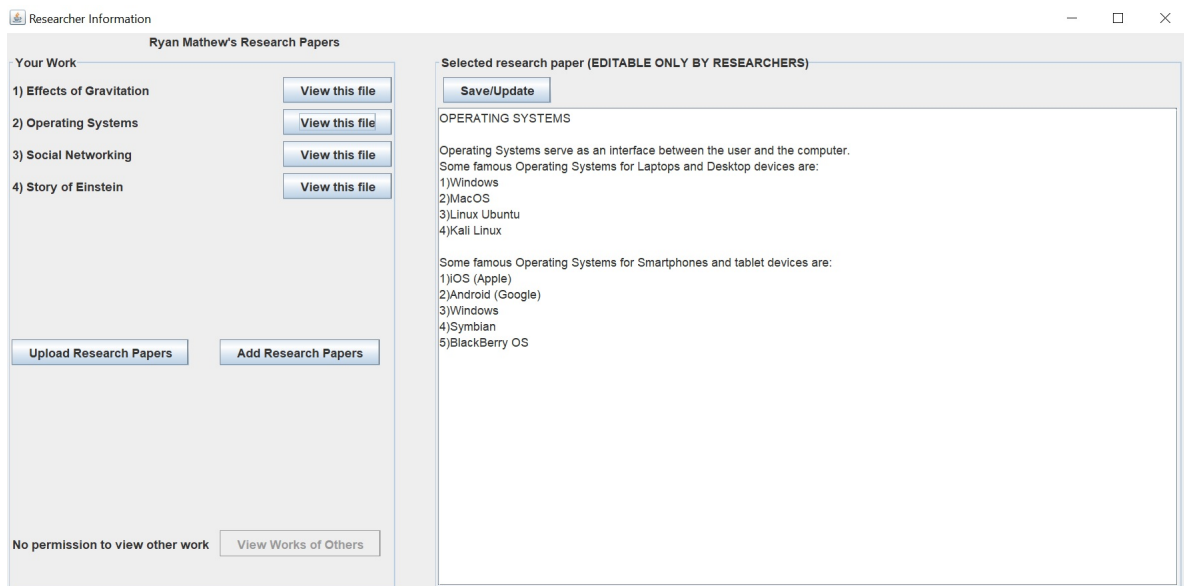
The research paper can also be edited by the researcher within the application (superiors and other researchers don't have that privilege. Let us remove the last paragraph of the

'Operating Systems' file to show this.
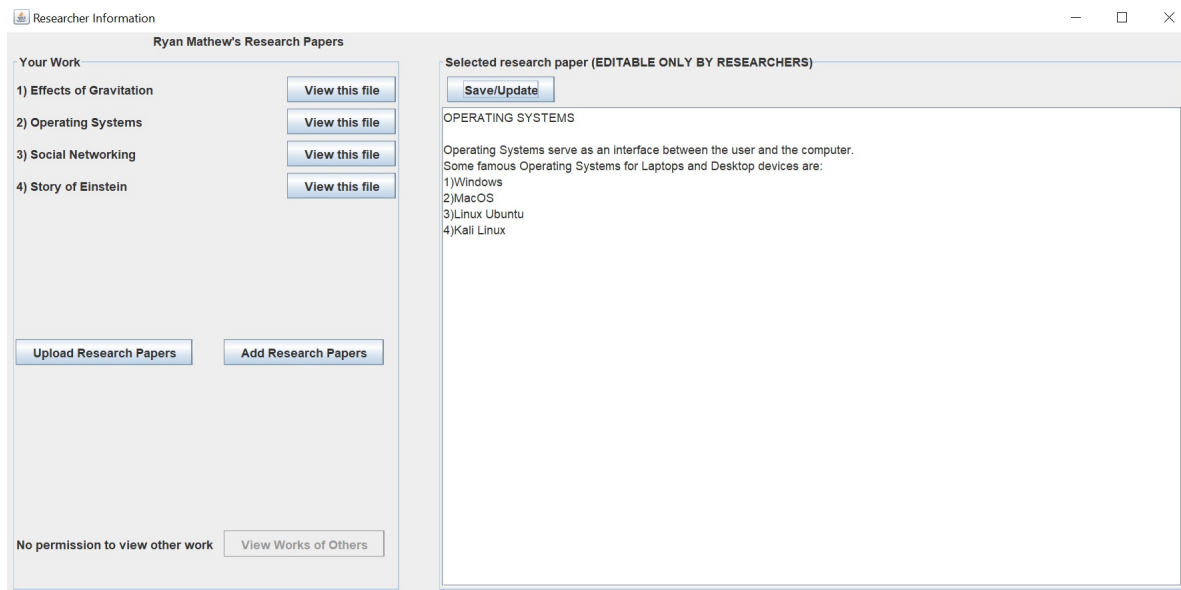
1.2.8 Uploading a Research Paper from the Computer

By clicking on the Upload Research Paper button, the researcher can upload a new research paper to his profile.
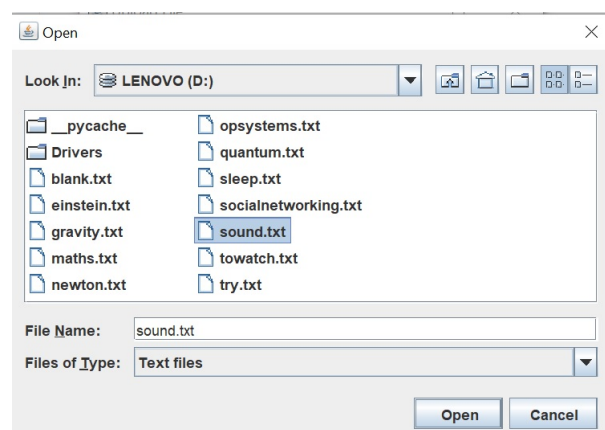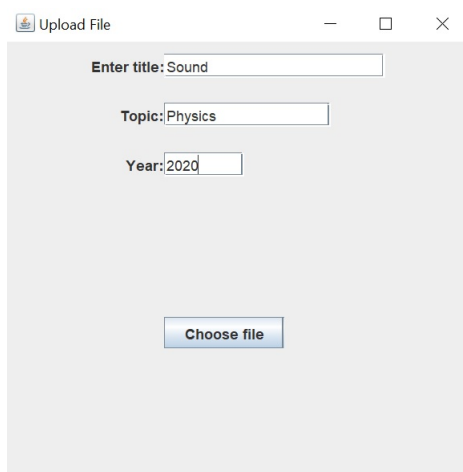
After uploading the research paper named 'Sound', the list of research papers looks like this:
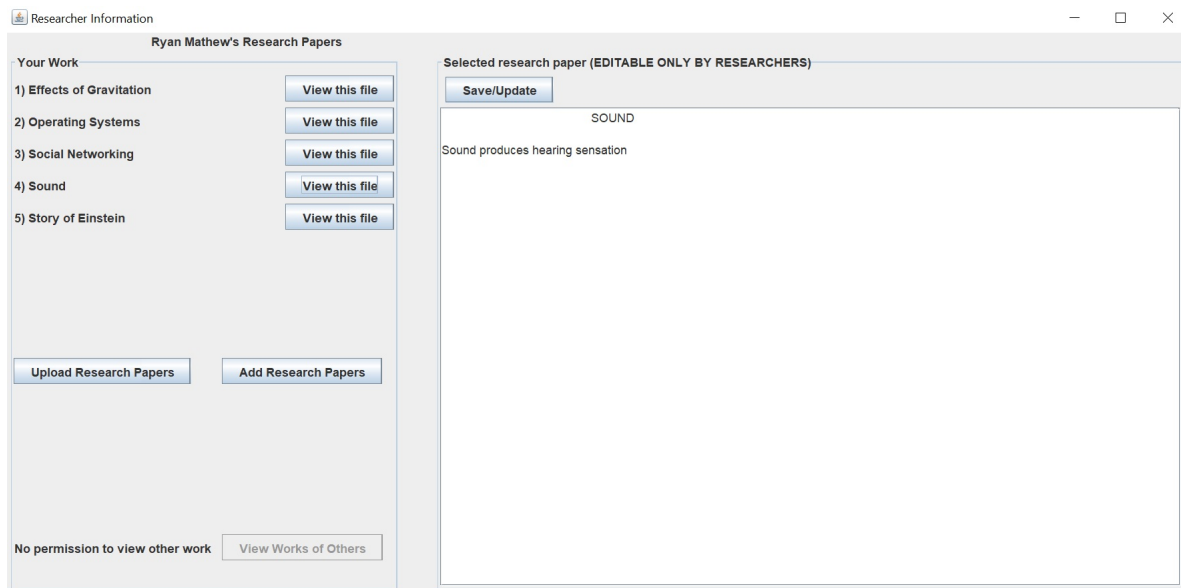
1.2.9 Adding a Research Paper without Uploading

Upon clicking 'Add Research Papers' the following window appears:

Now the list of research papers looks as shown below with the research paper 'Database' in it:
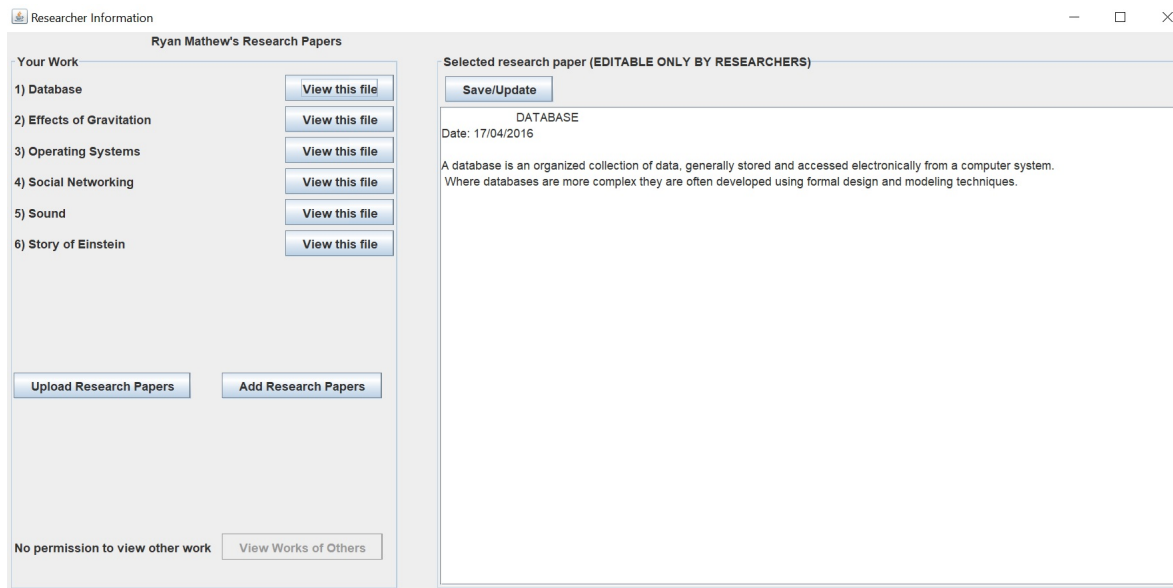
1.2.10 Viewing the works done by another Researcher

As we can see from the above screenshot, the researcher 'Ryan Mathew' has not been given permission by his superior to access the work done by other researchers. Hence the 'View Works of Others' button in disabled.

Let us login to another researcher named 'Rohan Mathew'
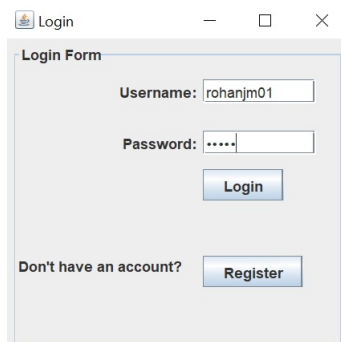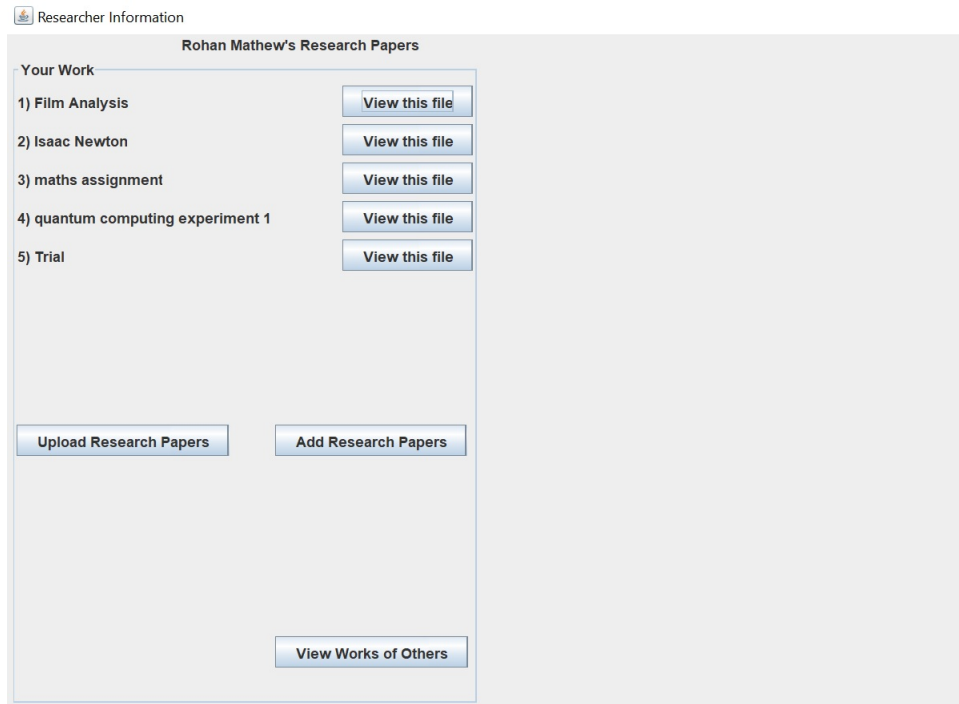
The papers published by Rohan Mathew are visible on the left hand side of the screen. In this, case we see that the user is given permission to view the research papers published by others. Hence the 'View Works of Others' button is enabled. Upon clicking 'View Works of Others', the following screen appears.
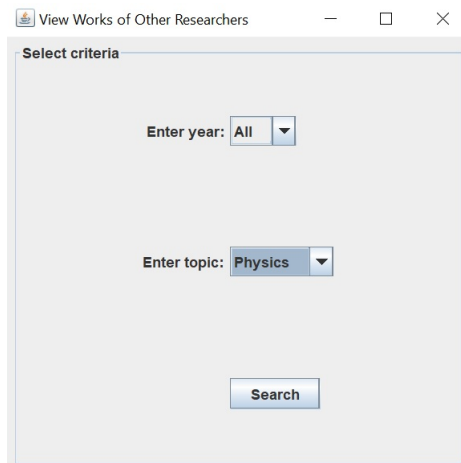
Selecting all years and topic as 'Physics', we get the following research papers:
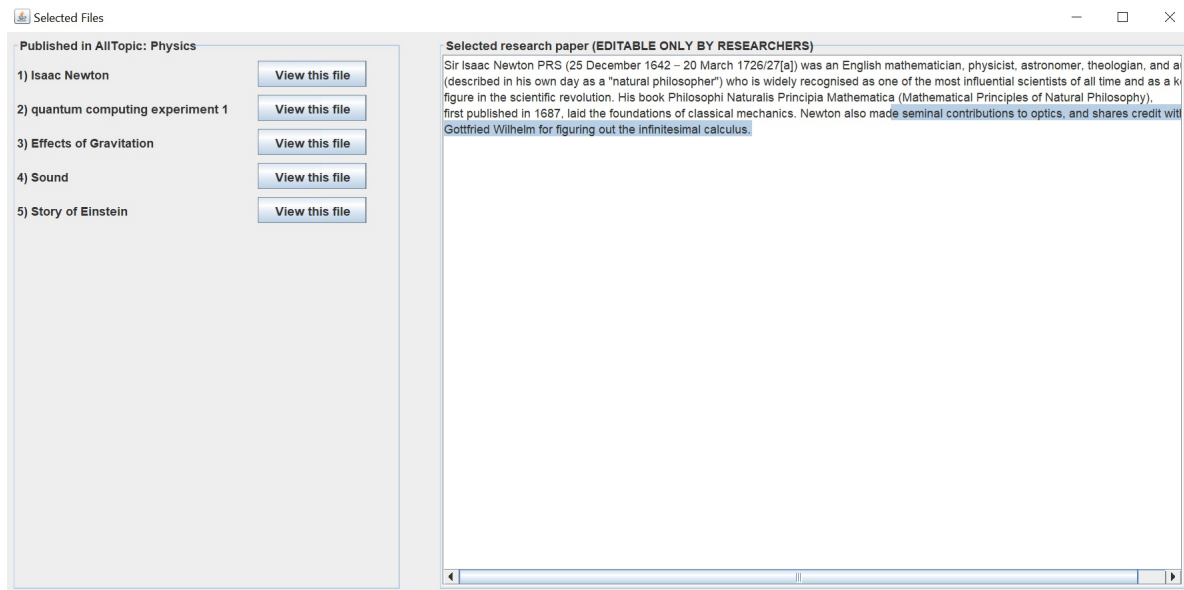
1.3 Tables in the database

1.3.1 User

This table stores the login credentials of each user:

- Primary key: username

1.3.2 Researchers

This table stores data concerning researchers including name, username and advisor approval.

```
mysql> select * from researchers;
+----+-----------+----------+-----------+----------------+
| id | firstname | lastname | username  | AdvisorApproval |
+----+-----------+----------+-----------+----------------+
|  1 | Rohan     | Mathew   | rohanjm01 |              1 |
|  2 | Ryan      | Mathew   | ryantm    |              0 |
|  5 | Shyam     | Binu     | shyamb1990|              1 |
+----+-----------+----------+-----------+----------------+
```

- Primary key: id

- Foreign key: 'username' referencing user(username)

1.3.3 Superior

This table stores data concerning superiors including name and username.

```
mysql> select * from superior;
+----+-----------+----------+-----------+
| id | firstname | lastname | username  |
+----+-----------+----------+-----------+
|  1 | Ravi      | Kumar    | ravikumar |
|  3 | Varun     | Sharma   | varuns    |
+----+-----------+----------+-----------+
```

- Primary key: id

- Foreign key: 'username' references user(username)

1.3.4 Superior_Researcher

This tables contains information concerning which researchers work under each superior.

```
mysql> select * from superior_researcher;
+-----------+------------+
| superior  | researcher |
+-----------+------------+
| ravikumar | rohanjm01  |
| ravikumar | ryantm     |
| varuns    | shyamb1990 |
+-----------+------------+
```

Foreign keys:

- 'superior' references superior(username)

- 'researcher' references researcher(username)

1.3.5   Researcher_Works

It shows the details of the papers published by each researcher.

```
mysql> select * from researcher_work;
+------------+-------------------------------+----------------------+------+----------+
| researcher | title                         | filename             | year | topic    |
+------------+-------------------------------+----------------------+------+----------+
| rohanjm01  | Film Analysis                 | towatch.txt          | 2013 | Arts     |
| rohanjm01  | Isaac Newton                  | newton.txt           | 2007 | Physics  |
| rohanjm01  | maths assignment              | maths.txt            | 2019 | Maths    |
| rohanjm01  | quantum computing experiment 1 | quantum.txt         | 2019 | Physics  |
| rohanjm01  | Trial                         | try.txt              | 2019 | Maths    |
| ryantm     | Database                      | database.txt         | 2016 | Computer |
| ryantm     | Effects of Gravitation        | gravity.txt          | 2013 | Physics  |
| ryantm     | Operating Systems             | opsystems.txt        | 2019 | Computer |
| ryantm     | Social Networking             | socialnetworking.txt | 2010 | Computer |
| ryantm     | Sound                         | sound.txt            | 2020 | Physics  |
| ryantm     | Story of Einstein             | einstein.txt         | 2007 | Physics  |
+------------+-------------------------------+----------------------+------+----------+
```

- Foreign key: 'researcher' references researcher(username)

1.4   RESULT

A Research Artefacts Access System was successfully created using Java AWT/Java Swing.