

# **Data Modeling and Databases: Project Phase 2**

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## 1 Phase 2. Web-based User Interface.

### 1.1 Introducing

According to Project Phase2 requirements we had to develop a web-based graphical user interface on top of physical database that we had created at Phase 1.

After considering different high-level programming languages we decided to use Python because of its clean, straightforward syntax and great support for building web apps. And as it was suggested by instructors on piazza.com we used PostgreSQL for the database management system and Tornado web framework for the web-based GUI.

### 1.2 Setup Instructions

1. Install Python: <https://www.python.org/download/releases/3.4.0/>
2. Install PostgreSQL: <http://www.postgresql.org/download/>
3. Import dump: execute in cmd in folder:

```
".../PostgreSQL/9.4/bin/ psql -U 'input your database username here' -f  
'path to dump file' 'name of your database'
```

4. Execute query to add auth table:

```
...\src\sql\auth\create_auth.sql
```

5. Configure Settings.py - set your username and password
6. Install Tornado: execute in cmd in folder

```
C:\Python34\Lib\site-packages\easy_install.py tornado
```

7. Run in cmd webserver.py
8. Go to <http://localhost:8000>

### 1.3 Functionality

According to the Phase 2 requirements only authorized/registered users are allowed to use the interface that we have created. The table with usernames and passwords can be stored in another database but in our case we decided to store it at the main database, even it is not logically connected with it. Authorized/registered users can carry out all the specified functionality, including search, insert (add), update () and delete. All the search results can be ranged in ascending or descending order.

## 1.4 Site map

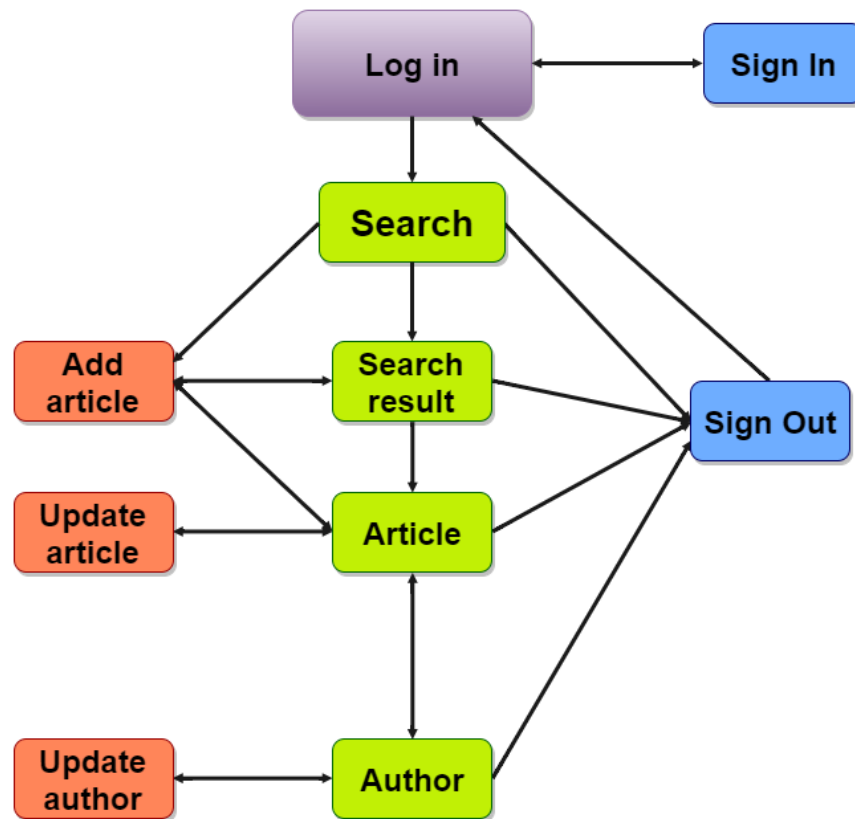


Figure 1: Site Map

## 1.5 Snapshots of the Interface

The screenshot shows the top header of the application with the text "DMD project Phase#2." on the left and a "Sign Out" link on the right. Below the header is the "innopolis university" logo. In the center, there is a login form with two input fields labeled "Username" and "Password". Below these fields are two buttons: "Log In" and "Sign In". At the bottom of the page, a footer bar contains the text: "Created by Chernyshov Alexey, Kravchenko Vladislav and Magomedov Murad. 2015 Innopolis University".

Figure 2: Log in or Sign in

The screenshot shows the same top header as Figure 2. Below the header, the "innopolis university" logo is on the left. In the center, there is a search form titled "Enter search criterias." in bold. The form contains six input fields labeled "Article id", "Article title", "Article author", "Article venue", "Article year", and "Keyword". Below these fields is a "Submit" button. At the bottom of the page, a footer bar contains the text: "Created by Chernyshov Alexey, Kravchenko Vladislav and Magomedov Murad. 2015 Innopolis University".

Figure 3: Search



## References

- [1] <https://www.python.org/> Python v.3.4
- [2] <http://www.tornadoweb.org> Tornado v.4.2.1
- [3] Introduction to Tornado. O'Reilly Media, Inc., 2012. ISBN: 978-1-449-30907-7
- [4] <http://www.postgresql.org/> Postgresql v.9.4.5
- [5] <https://pypi.python.org/pypi/psycopg2> Psycopg2 v.2.6.1