**A**

**PROJECT REPORT**

**ON**

**IBDb**

**(Indian Book Database)**

**Carried Out at**



**CENTRE FOR DEVELOPMENT OF ADVANCED COMPUTING**

**KNOWLEDGE PARK, BANGALORE**

**UNDER THE SUPERVISION OF**

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**P.G DIPLOMA IN ADVANCED COMPUTING**

**C-DAC, BANGALORE.**

**PG-DAC FINAL PROJECT REPORT**

1. **What our project does?**

* IBDb (an acronym for Indian Book Database) is a web-application where end‐users will get the information related to Indian books including short description, name of author and user ratings.
* All the categories of the books will be displayed with a separate category card on the home page along with all the books card added in the database.
* Google Books API is also implemented in the primary search bar which will allow end user to find any book and read it online.
* End user can also use social platform such as ‘Login with Google’ instead of registering it separately.
* The project can further be upgraded where registered users have the ability to review and rate the books which are uploaded in the database.

1. **What are the system requirements for our project?**
   1. **Hardware Requirements**

|  |  |
| --- | --- |
| **Number** | **Description** |
| 1 | CPU 2.0 GHz or CPU (laptops) Core 2 |
| 2 | CPU (desktops) RAM 2 GB RAM |
| 3 | RPM6 GB or at least 10% free space (whichever is greater). |

* 1. **Software Requirements**

|  |  |  |
| --- | --- | --- |
| **Number** | **Description** | **Type** |
| 1 | Operating System | Windows 10 |
| 2 | Frontend | Angular 10, Bootstrap, HTML, CSS |
| 3 | Backend | JavaScript (Node.js Framework) |
| 4 | Database | MySQL |
| 5 | IDE | Visual Studio Code |
| 6 | Browser | Google Chrome |

1. **Explain flow of execution of the project?**

We follow the “three-tier architecture*”* in our project and to explain the flow of execution of our project we took a sample scenario mentioned below:

* 1. Take one *scenario*
  2. What happens in **presentation layer**?
  3. What happens in **service layer**?
  4. What happens in **DAO layer**?

**3.1** We are explaining a scenario “*how book category component works*” i.e., when we click on the category name how it shows all the books which falls under that particular category.

**3.2** In presentation layer we have one of the HTML file as ‘home.html’ which is responsible for how our home page will look. In this file we fetch all the categories we have along with images from database. Also, we show all the books that are present in database.

1. Make a function call when we click on particular category name.
2. That function navigates to ‘categories component’ in which all books from single category are listed.
3. Inside ‘categories.ts’ file we call service layer function (i.e., getSingleCategory () which takes category name as argument) inside ‘ngOnInit()’ method.

**3.3** In service layer:

1. We use get mode of request and pass string as an argument using http protocol to fetch data from server side.
2. ‘getSingleCategory (category: string)’ this service layer method returns list of books from single category in JSON form.
3. Get method which we are using in service layer is defined in DAO layer.

**3.4**  In DAO layer:

1. In get() method use predefined methods to fetch data from database in JSON form.
2. We make database reference or variable with the help of Mysqli.
3. Get category name from param, fetch all books from that particular category.
4. **Scenarios where we struck and how we overcome?**
   1. While working for component routing part in home.component.ts:

*Prob*: How we can call two service layer methods only in one click using inside ngOnInit() ?

*Ans*: We used logIt() method inside ngOnInit() where we called another service layer method that’s how we overcome.

* 1. On server side while using ‘mysqli’ package:

*Prob*: We didn’t write any raw command for scenarios such as :

* 1. how to sort data with bookd id…
  2. how to join tables…
  3. how to set conditions on coming data…

*Ans*: Instead, we used predefined methods to make our code more clean.

* 1. E-book content of all the books in our database:

*Prob*: How to provide e-book content to our users?

*Ans*: We implemented Google Books API in our search bar so that our users can easily read any book of their choice.

* 1. How to make registration part simpler for our end users?

*Prob*: Which social platform to use so that users can login directly?

*Ans*: We used Google Sign-In as it manages the OAuth 2.0 flow and token lifecycle, simplifying integration with Google APIs. A user always has the option to revoke access to an application at any time.

* 1. Simplifying our database operations:

*Prob*: Operations on database using MySql commands was time consuming.

*Ans*: We used phpMyAdmin as it’s a free software tool intended to handle the administration of MySQL over the Web. Frequently used operations (managing databases, tables, columns, relations, indexes, users, permissions, etc) can be performed via the user interface, while we still have the ability to directly execute any SQL statement.

1. **What we learnt during our project?**

While working on our project we learnt different technologies, modules, methods and API implementation as mentioned below:

**5.1** Angular

* 1. There are lots of module we used and understand how they work
     1. HttpClientModule, SocialLoginModule, RouterModule, AppRoutingModule, FormsModule and BrowserModule etc.
  2. Usage of methods like:
     1. Pipe(), map(), navigate() & then() etc.
  3. Node.js

a. We did not use any SQL commands instead, we used “mysqli” package.

b. We used predefined methods for all queries like:

* + 1. For select all🡪 getAll()
    2. For insert 🡪insert()
    3. For update 🡪update()
  1. Usage of packages like:
     1. jsonwebtoken & bcrypt etc.
  2. Implementation of Goole API’s for searching and user login.
  3. We learnt to use phpMyAdmin tool for database implementation.
  4. We learnt the usage of GitHub which we used to maintain our repository online and it helped us aalot.
  5. We also learnt to maintain our Scrum board which helped us in timely completion of project.

THANK YOU