Abstract

The project entitled ‘News portal’ is a web-based project. This project has designed and implemented an application which enable admin to add and manages news, category. This system allow user to comment and rate on the news. This system uses rate-based algorithm to provide popular news that works according to rated value. In this system the backend is developed using PHP, the frontend using HTML, CSS, Bootstrap, and JavaScript. MYSQL is used as a database.

Keywords:-

HTML, CSS, PHP, Javascript.

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LIST OF ABBREVIATIONS

CSS – Cascading Style Sheet

DFD – Data Flow Diagram

ER(D) – Entity-Relationship (Diagram)

HTML – Hypertext Markup Language

HTTP – Hypertext Transfer Protocol

JS – JavaScript

SQL – Structured Query Language

UI – User Interface

UX – User Experience

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Chapter 1: Introduction

1.1. Introduction

The news portal is the system that provides digitalized news. This system has admins who insert, update, delete data to database and retrieve data from database. This system provides comment features where users express their thoughts about the news, but this feature is available only after logged in. Those users who don't login to the system won't be able to use these features. The admin in this system manages comment sections such as approving or rejecting comments. Only comments which are approved by admin will get retrieved and get displayed in user panel.

This system uses a rating-based algorithm for its popular news feature. The feature is based on user ratings, where users can rate up to five stars based on their interest. News that get the most views are displayed at the top. Users only be able to rate the news once. Also, the news portal provides users with the latest news feature so that they read news published recently. The feature works on the basis of the date provided by the admin when posting news. Users can view news according to their interests using this system's category feature. If they want sports-related news, they just need to click or go to the sports category, which is easiest and fastest.

The news portal provides registration feature where new user register with the required details and they login to the site after registration successful. The categories shown in the user panel are retrieved from a database which is inserted by the admin. If admin does any changes in databases than user panel also gets changed. The news feature also works the same as the category.

Nowadays, this era is an age of Information Communication and Technology. People can't think for a single moment without technology. From morning to night. People need help with technology. This is the revolutionary time of computer technology. Most of the work depends on a web application. For this reason, anytime, anywhere, anyone can access a website via the internet at a low cost and people find their expectable and most updated information from the website. At present information is one of the most valuable resources in the current world. This project was developed to be aware of the people. [1]

1.2. Problem Statement

Missing content in digital editions of contemporary newspapers: whilst vast amounts of content are available some is missing. This is particularly true of pictures that appear in newspapers and content by freelance journalists. Copyright is often retained by the freelancer and as a result digitized versions are not able to make the freelance content available. Most online versions of contemporary online newspapers do not retain formatting and layout: the vast majority of electronic versions of contemporary newspapers do not retain formatting and layout. They give you the text but do not show how it appears on the page. This can be a huge handicap, if you're interested in knowing how much prominence was given to a particular story. There are some exceptions to this as on slide.

The traditional way of getting news was that people either had to watch television, listen to the radio, or read the newspaper. But, in this modern era, people don't get enough time to do such time-consuming things and people have to wait for news release time. The problem of the existing traditional method of getting news can be summarized as follows:

- Watching television and listening to radio is time consuming.
- News cannot be stored for long time.
- Newspaper had chances of getting torn.

1.3. Objective

The objective of online BCA notes are follows:-

- To provides daily news.
- To provides popular news.
- To store news for long time.

1.4. Scope and Limitation

This System is designed to save everyone time by being able to provide digitalize news. This System provides news according to their category that means user can views news according to their interest by selecting different category and also this system provides popular news where user can read most viewed news and also they got to know about trending news.

This system includes some limitation that are listed below:-

- **i.** This system can only be used over the internet.
- **ii.** This system is only developed as web application.

1.5. Development Methodology

This project News Portal is developed by using the **Waterfall model** which is based on a linear sequential flow. This means that any phase in the development process begins only if the previous phase is complete. In this waterfall model, the phases do not overlap. This system contains predefined module which makes us suitable to use this model.

1.6. Report Organization

Chapter 1 consists of introduction, problem statements, objectives, scope and limitations regarding the project.

Chapter 2 contains background study and literature review.

Chapter 3 consists of requirement analysis which includes function and non-functional requirement, feasibility study includes technical, economical, operation and feasibility, Data modelling includes ER diagram, and Process modelling includes DFD diagrams.

Chapter 4 summarize on implementing and testing, tools used for preparation of the project. Testing includes unit testing and system testing.

Chapter 5 includes lesson learnt/outcome, conclusion and future recommendation.

Chapter 2: Background Study and Literature Review

2.1. Background Study

There are number of Online News Portal in Nepal. Some of them are nepaltvonline, ekantipur, onlinekhabar, RatoPati, Annapurna post etc. ekantipur is the nepali news site that delivers latest national and international to the users including political News, games, business, and entertainment News. From the site ekantipur.com you can access to other newspaper (The Kathmandu Post, Saptahik) and magazine (Nari, Nepal) of Kantipur Media group. The portal is both in Nepali and English language.Online Khabar delivers latest national News including business, political and sports news. From the portal know the public feedback, social issues and enjoy the great photos and videos. The OnlineKhabar is in the Nepali and English language. [2]

The number of online media registered in the country has increased lately. As of now, 2,325 online news portals have been registered in the country.According to the Department of Information and Broadcasting, 478 new online media have been registered in the country so far in the fiscal year 2020/21 that began mid-July 2020.In the previous fiscal year, a total of 550 online media were registered and 17 were re-registered. Likewise, 272 got renewed.The President of the Federation of Nepali Journalists (FNJ), Govinda Acharya, says the online portals have emerged as a mainstream media, hence they should pay attention towards maintaining trust and credibility.“The quality of some online media is still under question. Some online journalists are found publishing and disseminating news against the code of ethics,” he says, “It has to be well-regulated with the compliance of ethics.” [3]

2.2. Literature Review

The history of online news portals does not date to long time back. According to Carlson (2000), the Palo Alto Weekly in California is the first newspaper to publish regularly in the web on January 19, 1994. In the South Asian context, Nepal pioneered on availing news content on the web in South Asia. Kathmandu Post went on the web on September 1, 1995 is the first newspaper to avail its content into the web. In the beginning, its content was available at http://www.cen.uiuc.edu/~rshresth/ktmpost/. It was possible through the support from Mercantile Communications, one of the first ISP in the country

and Rajendra Shrestha. Later, Mercantile Communications began availing those contents from its portal [4]

In Nepal, Himal Southasian was first magazine to have its own domain in the web. It went on the web through www.himalmag.com in 1997. This website has been availing the archive of the magazine since March 1996. Nepalnews, started since November 1999, under domain www.nepalnews.com, is the first independent online that doesn't publish in hard copy or doesn't have any corresponding broadcast media. Firstly, it availed content of other news papers that were available in south-asia.com. Later it began posting its own news and features. Now it has grown into an independent and one of the most credible news portals in the country. It claims that it has been visited more than one hundred and ten million times in the nine years of its inception. There are over a dozen independent online news portal. [5]

Present scenario of the media more into the digital media or can say that news portals are the best example of the media convergence. As there are more approaches for the audience to gather the information regarding anything happing in the surrounding or world but for gaining that information people don't have that much time to spend in front of television or newspaper. So, in this case, news portal of different news channels and newspaper focus on making the place in the busy schedule of audience to gain more and more popularity. Apart the popularity of News portal, Newspaper and television channel lose the interest of audience in their content of news. Because news portal more focusing on viewership instead of content. As the broadcast main three objectives: entertainment, information and education, but the News portal are mainly working on entertainment only. The content of news portal is focusing on the advertising content. [6]

Chapter 3: System Analysis and Design

3.1. System Analysis

The project News portal was developed using waterfall model. This model is suitable for our project because the system requirement are already specified so there won't be any changes in development phase.

3.1.1 Requirement Analysis

i. Functional Requirement

System is considered as incomplete without fulfilling functional requirement. This system contains different functionality like register, login, commenting, managing etc.

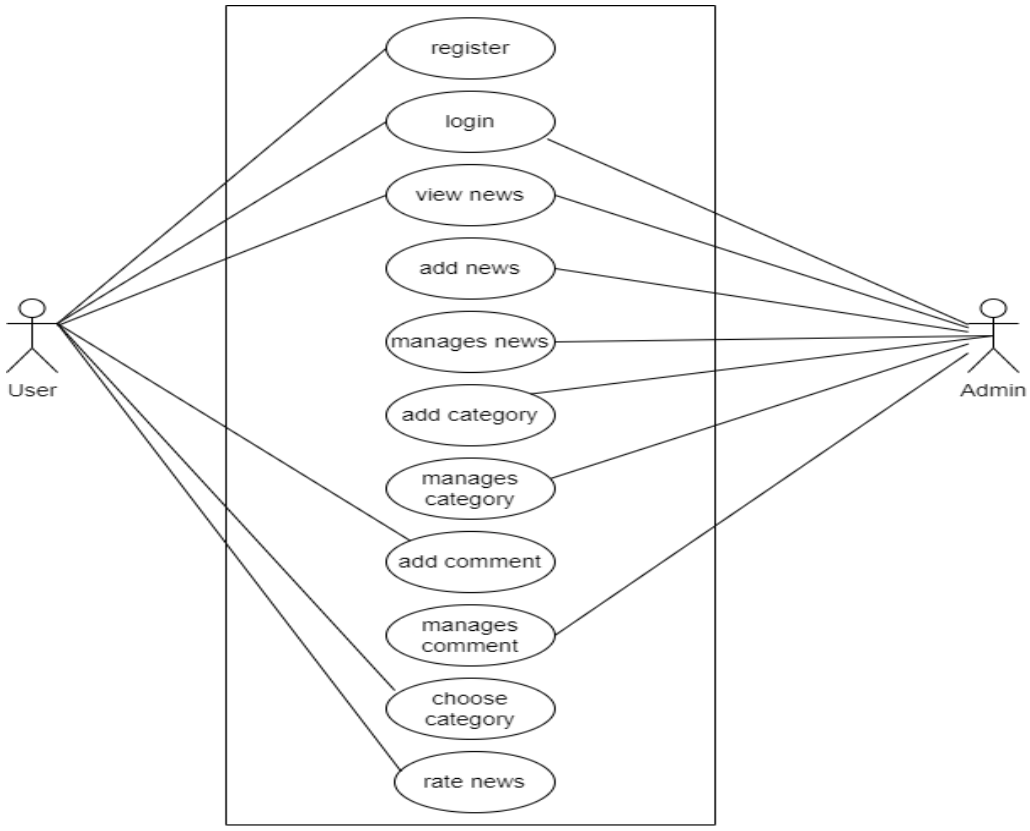


Figure 3.1 USE-CASE diagram of News portal

Figure 3.1 shows USE-CASE diagram of News portal. There are two actor user and admin. Above picture shows that user allowed to view news, register and login on the site and add comment to the post. Admin allowed to views news, add and manages news, add and manages category and manages comment.

ii. Non-functional Requirement

- **Availability:**

  This system is developed as web base application. This system is easily available in web with the use of internet.

- **Security:**

  This system is secured and user information won't be available to others for user's privacy. This system gives only right to admin for managing news which make the system more securable.

- **Performance:**

  The system is designed for smooth performance where users easily register and read news. And the admin easily manages news and comments.

3.1.2 Feasibility Analysis

A feasibility study, as the name suggests, is designed to reveal whether a project/plan is feasible. It is an assessment of the practicality of a proposed project/plan. Feasibility of a new system means ensuring that the new system, which we are going to implement, is efficient and affordable. There are various types of feasibility to be determined. They are mentioned in the next subsections.

i. Technical Feasibility

The technical requirement for the system is economic, and it does not use any other additional hardware and software. Users can operate this system with simple knowledge regarding the required technologies

ii. Operational Feasibility

The system working is quite easy to use and learn due to its simple but attractive interface. The users requires only basic training to operate this system.

iii. Economically Feasibility

The system is economically feasible as most of the tools and resources required are cheap and easily available.

3.1.3 Data modelling: ER Diagram

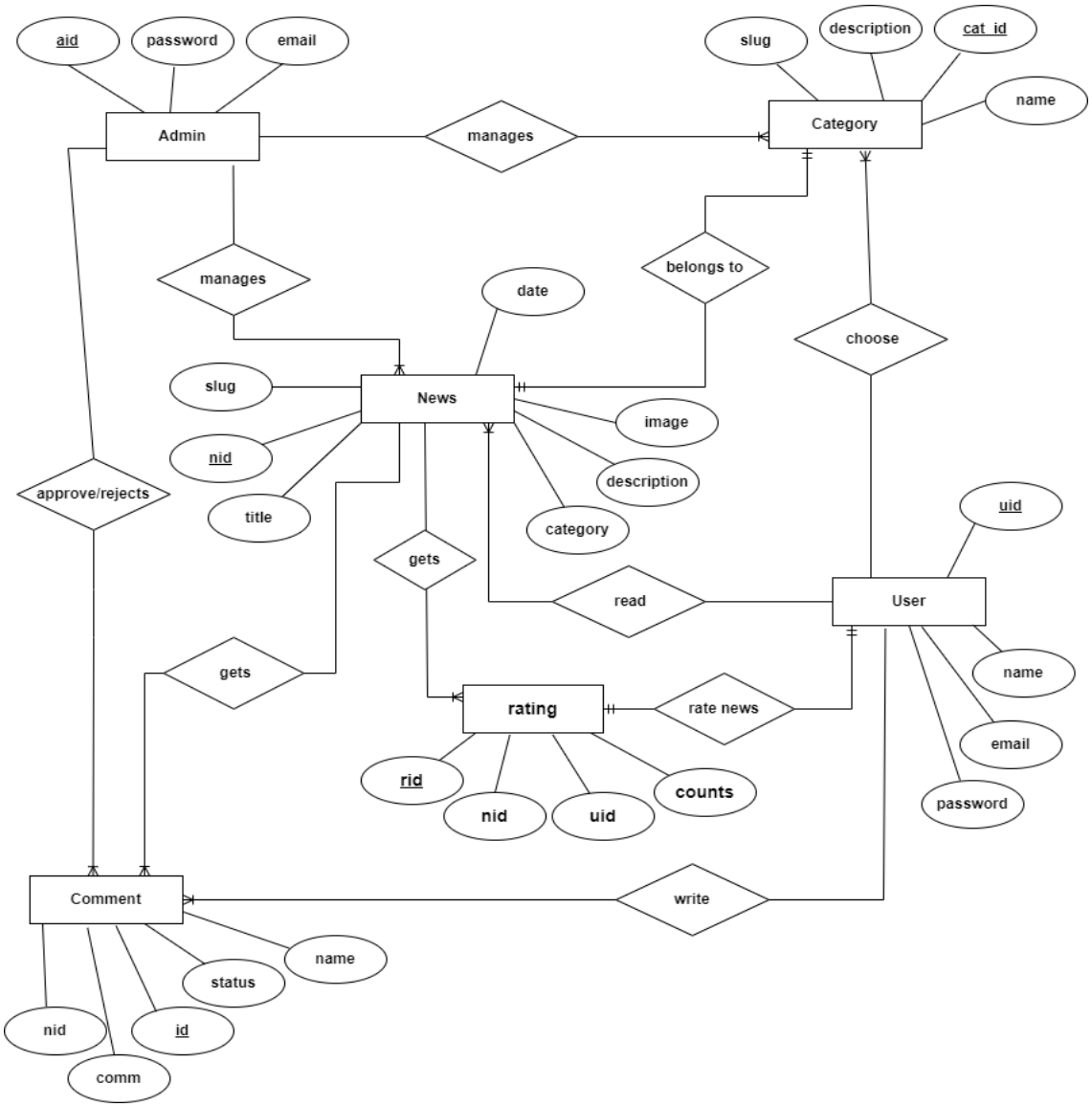


Figure 3.2 ER diagram of News portal

Figure 3.2 shows an entity relationship diagram of a news portal which contains six entities admin, category, user, comment, rating and news, where each entity has its attributes with one primary key. The diagram shows that each entity may have relationships with other entities where the admin has a one-to-many relationship with a comment, category and news, and the user also has a one-to-many relationship with a comment, news and category. News has a one-to-many relationship with comments and news and category have a one-to-one relationship. User have one to one relationship with rating.

3.1.4 Process Modelling: DFD

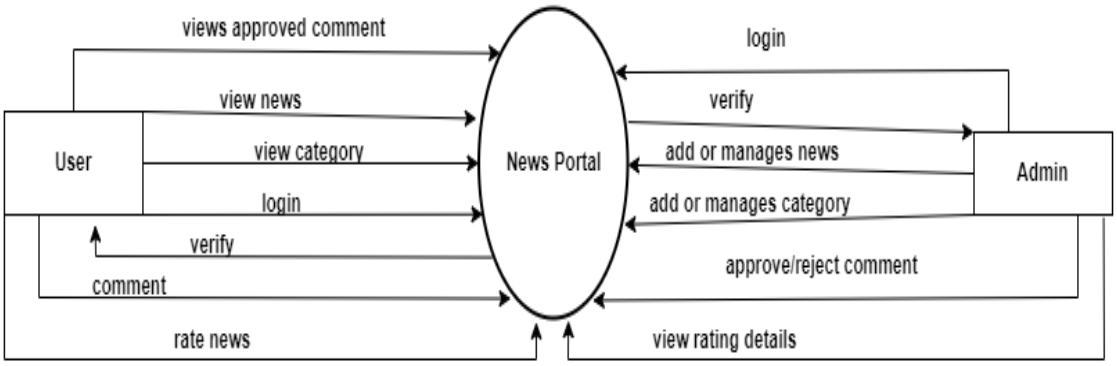


Figure 3.3 Context diagram of News portal

Figure 3.3 shows the context diagram of the news portal where there are two entities user and admin, and also there is one process named as a news portal. According to the diagram, the news portal displays or provides news and category to the user. The news portal displayed the comment to the user which has been approved by the admin. Users can comment on news only after logging in to the site. The admin must log in first to use this system where he/she manages news, manages category, and approve/reject comments. Manages means creating, updating, reading, and deleting the records of databases. Users can rate on news.

Figure 3.4 shows the admin and users data flow diagram of the news portal where there are two entity called admin and user and six processes named login system, news system, category system, comment system, rating system and also there are six databases named admin, news, category and comment, user, rating. The admin first logins to the login system which authorized the admin details, and if details are authorized then it redirects to the dashboard. The admin manages news in the news system which provides news details to the news table, and the admin manages the category in the category system which provides details to the category table. The admin approve or reject comment in the comment system which provides details to the comment table. The login system is not mandatory in the user panel to view news. But the benefit of login is that it unlocks the comment and rating feature for the user. The user can choose a category in the category system about what kind of news they want to read.

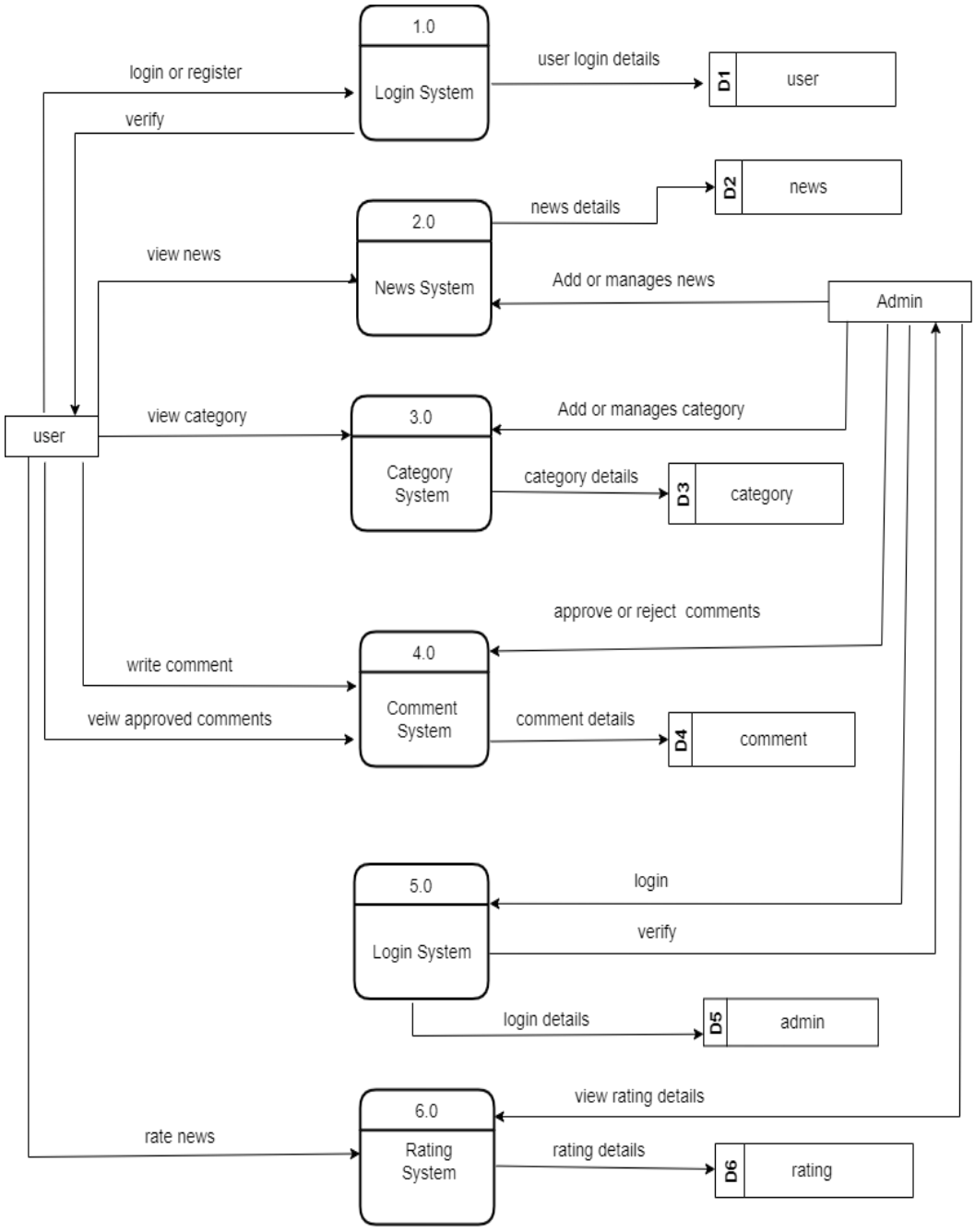


Figure 3.4 Level 1 DFD of News Portal

3.2 System Design

3.2.1 Architectural Design

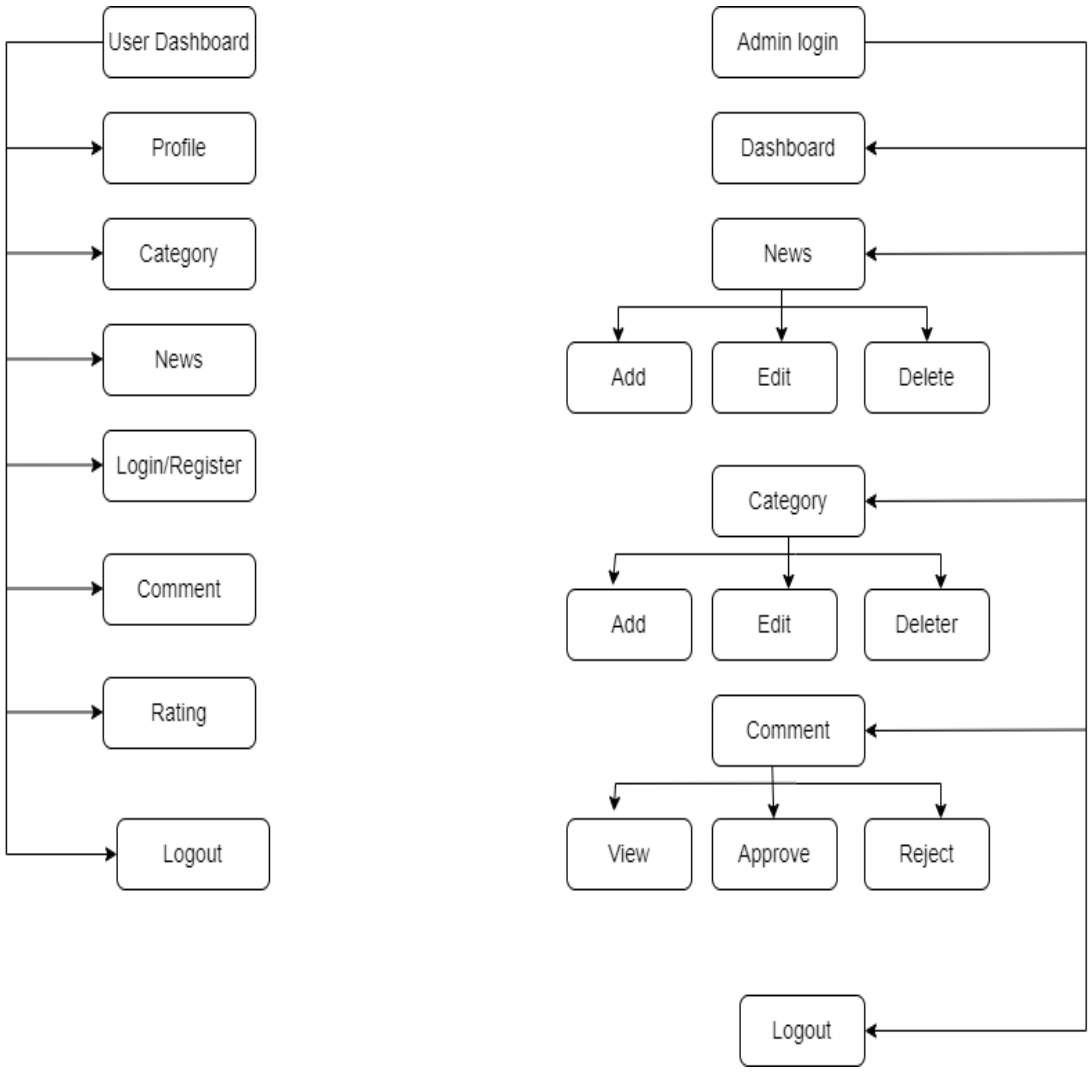


Figure 3.5 Architecture Design of News Portal

Architectural design is a creative process in which you design a system organization that will satisfy the functional and non-functional requirements of a system. There is no formulaic architectural design process

3.2.2 Database Schema Design

Figure 3.6 shows Schema diagram of News portal which contains five table named user, news, comment, category, rating and admin with their attribute. Each table has one primary key and also each table has relation with each other as shown in figure.

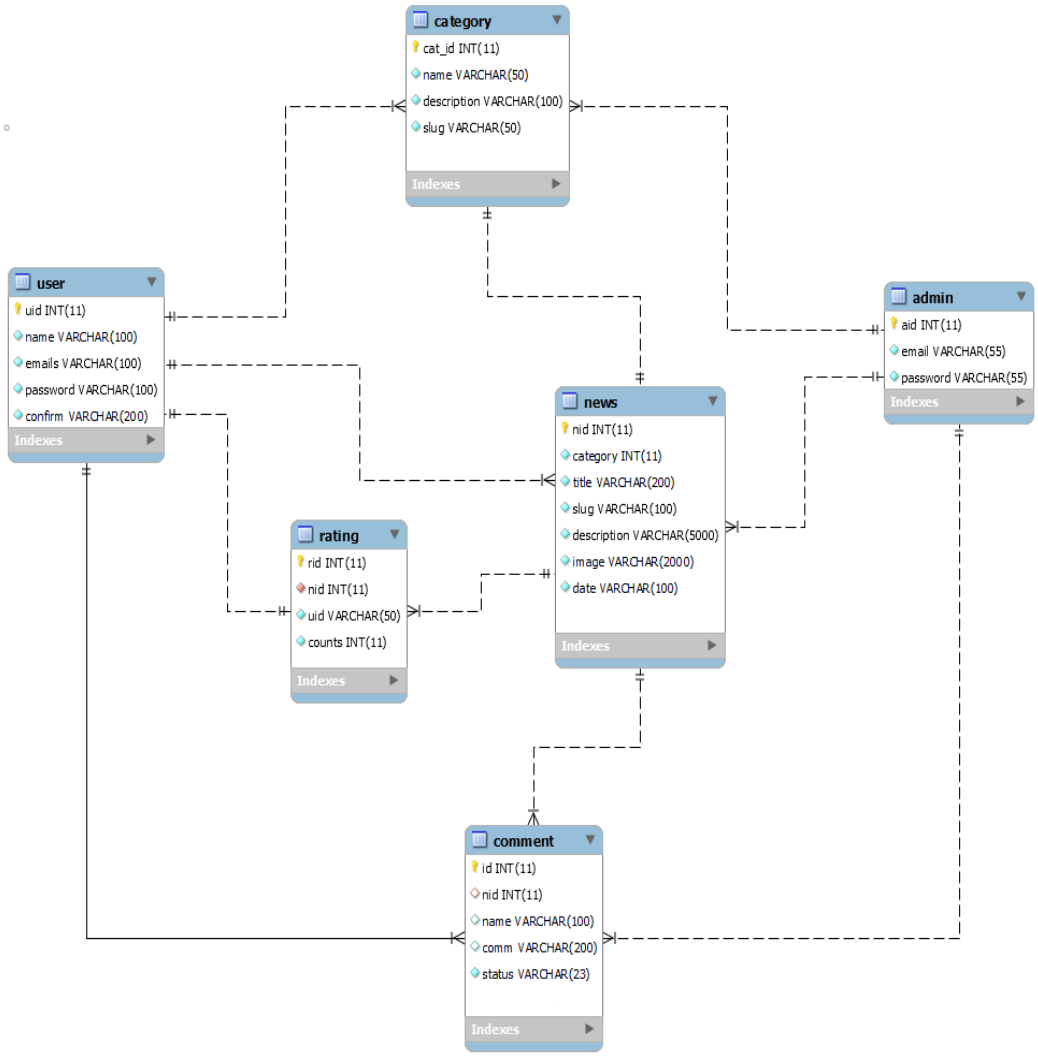


Figure 3.6 Schema Design of News Portal

3.2.3 Interface Design

Figure 3.7 Login interface design of News Portal

Figure 3.7 shows the login interface design of News portal where user and admin have to input email address in email field and input password in password field to get access to the user dashboard. If user don't have login email and password then user also can create account by clicking create account button.

Figure 3.8 User dashboard interface design of News Portal

Figure 3.8 shows user dashboard interface design which contains home, profile, search, logout, and different category button in the header of the webpage. And below navbar there are category like economic, political and sports listed in flow layout. There is latest posts where users view latest news title. And there is popular news where user views news get visited more times.

Figure 3.9 shows interface design of admin dashboard where user get into after logged in. There is a sidebar which listed items like Home, Add news, Manages news, Category and comment from where user add and manages news, add and manages category and manages comment. There are different design fields in home page of dashboard which show number of items in the respective fields.

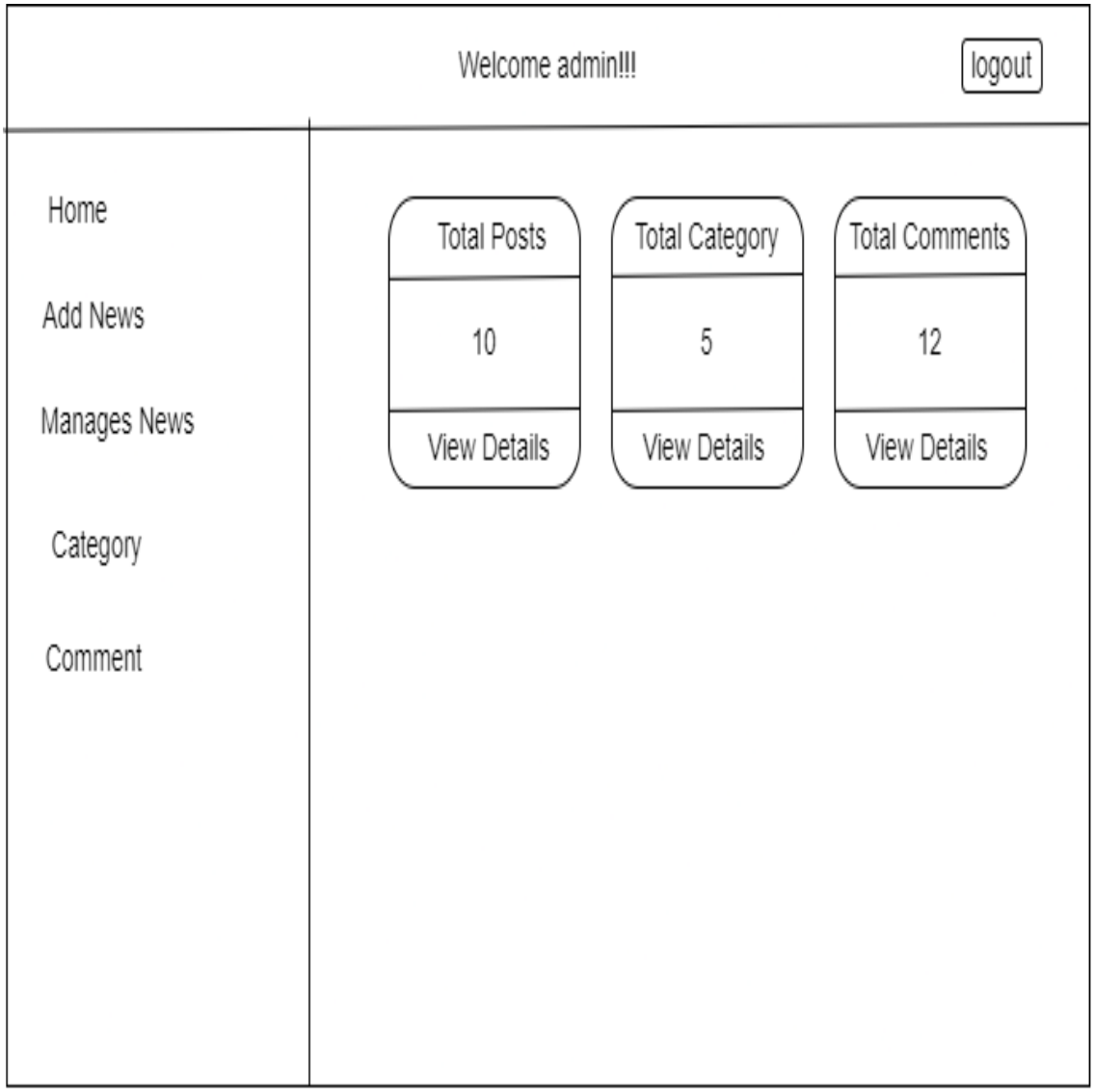


Figure 3.9 Admin dashboard interface design of News Portal

Figure 3.10 shows the physical DFD of Hotel Room Reservation System where there are two entity user and admin where admin must login first in the system to access their dashboard and user must login first to write comment on posts. But users are able to read news without login into system.

3.2.4 Physical DFD

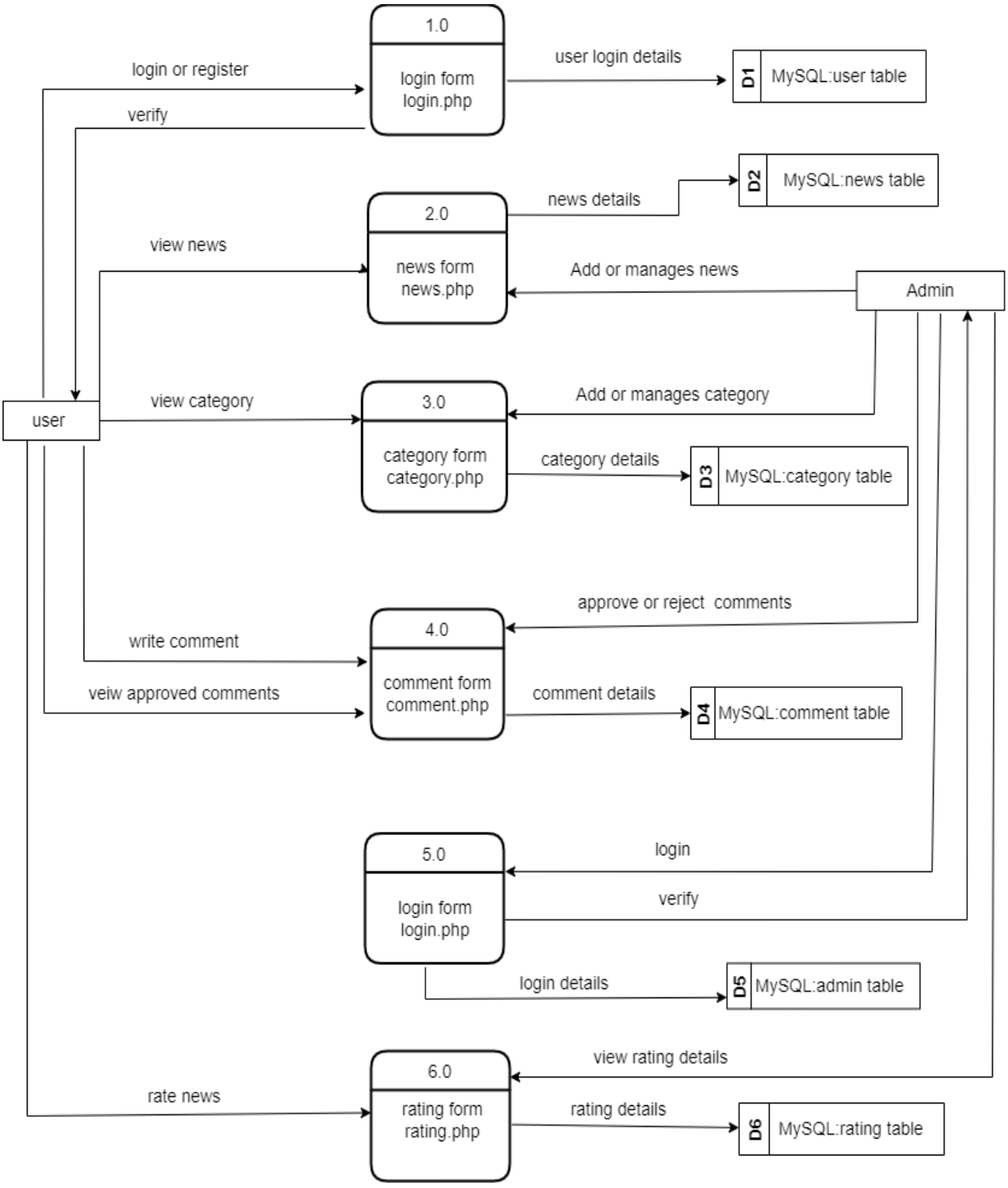


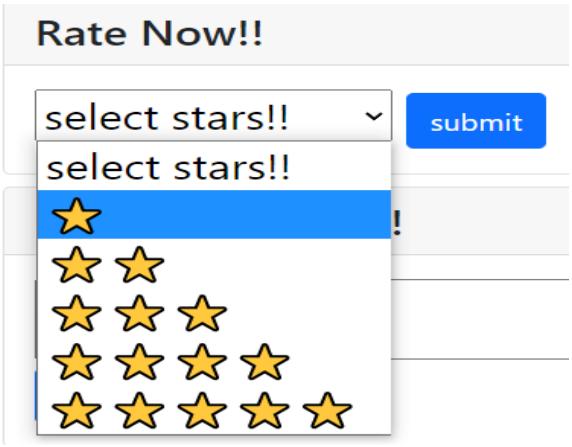
Figure 3.10 Physical DFD of News Portal

3.3Algorithm Details

Rating-Based Recommendations:

Rating based recommendations is one kind of recommendation method which recommends news based on user rating. How it works is that it calculate the value of rate given by user to news. Then its display's the news getting max value in descending order. Let's understand how this algorithm works. When user rates in news title, the value of news gets inserted into rating table. The user is only allowed to rate time in each news. User must login to rate news. The value of news rated by user is calculated using sum method of MySQL. The news getting maximum value has been listed in top.

Input:



Output:

Methods:

1. **To rate news**

Step-1: Start.

Step-2: Create a form having select option to pass rated value.

Step-3: Check for user login

```
if(isset($_SESSION[‘user’])):
        echo  “rate now ”
else:
        echo  “please login to rate ”
```

Step-4: Check if user already rated on news

```
If user already rated:
        echo “already rated”
else:
        $query="INSERT INTO  rating(nid,uid,counts)
            values('".$nid."','".$user."','".$rate."')";
```

Step-5: End

2. **To retrieve news getting maximum rate**

Step-1: Start

Step-2: Use sum method to get to value of each news

Ex: SUM(rating.counts)

Step-3: Retrieve data from database joining two table using foreign key

```
$sql= "SELECT news.nid,news.slug, news.title, SUM(rating.counts)
FROM rating INNER JOIN news ON rating.nid = news.nid GROUP BY
rating.nid, news.title ORDER BY SUM(rating.counts) desc LIMIT 5" ;
```

Step-4: Display news having maximum value in descending order in the list.

Step-5: End

Chapter 4: Implementation and Testing

4.1 Implementation

After the requirements and design activity is completed, the next phase of the Software Development Life Cycle is the implementation or development of the software. In this phase, developers start coding according to the requirements and the design discussed in previous phases.

4.1.1 Tools used

The different types of CASE tools used in the project are:

- **Diagram Tool:**

The components of the system, and the flow of the data and control between these components are demonstrated by diagram tools by using graphs. “Draw.io” and “Creately” are the diagram tool used in the project.

- **Web Development Tool**:

These tools assist in designing web pages with all aligned elements like forms, text, script, graphic and so on. Visual Studio Code is used as web development tools in the project. The different frontend tools used for the completion of the project:

- HTML 5
- CSS/Bootstrap
- Javascript

The different backend tools used in the project are:

- PHP
- Xampp Server 3.2.4

4.1.2 Implementation Details of modules

- **Logins Module:**

  This module is used for login process for the system. The logins models contains email and password field.

```
$sql= "SELECT * FROM admin WHERE email= '".$email."' AND password= '".$password."'";
  $result= $conn->query($sql);
  if($result->num_rows>0)
  {
  session_start();
  $_SESSION['user'] = $email;
  header('Location:index.php');
```

- **Rating module:**

  This module is used for rating process where user can rate into news which passes value to rate from which news getting maximum value listed in the top. Only user logged into the system are allowed to rate.

```
$sql="SELECT counts from rating where nid='".$nid."' AND uid='".$user."'";
$result=$conn->query($sql);
if($result->num_rows>0){
echo ("already rated");
}else{
$query="INSERT INTO rating(nid,uid,counts)
values('".$nid."','".$user."','".$rate."')";
$run=mysqli_query($conn,$query);
    echo "success";
}
```

- **Comment module:**

  This module is used for comment process where users are allowed to comment in news only after logged in to the system. Comment approved by admin got display in the system.

```
$slug=mysqli_real_escape_string($conn,$_GET['title']);
$posts="SELECT * FROM news where slug='$slug'";
$posts_run=mysqli_query($conn,$posts);
if(mysqli_num_rows($posts_run)>0){
foreach($posts_run as $postItems){
$nid=$postItems['nid'];
$sql= "SELECT news.title,comment.name,comment.comm,comment.id
        FROM comment INNER JOIN news ON comment.nid = news.nid
        WHERE comment.nid='".$nid."' AND status='approved';
                " ;
```

- **News module:**

  This module is used for news process where admin add or manages news details which get display in user panel.

```
 $sql="INSERT INTO news (title,category,slug,description,image,date)
 values('".$name."', '".$cat."','".$slug."','".$desc."','".$filename."',NOW())";
     if($conn->query($sql)){
       move_uploaded_file($_FILES['image']['tmp_name'],'image/'.$filename);
       echo "<script>alert('Your Record Sucessfully Inserted.');
       window.location = '../news.php';</script>";
     }else{
       echo '<script> alert("error on insertion")
       <window.location="../news.php";<script>';
     }
   }
```

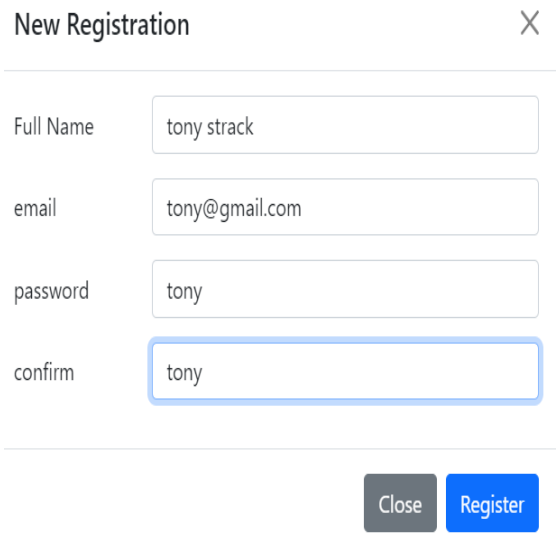
4.2Testing

4.2.1 Test cases for Unit Testing

Unit testing is a type of software testing where individual units or components of a software are tested. The purpose is to validate that each unit of the software code performs as expected. Unit Testing is done during the development (coding phase) of an application by the developers. Unit Tests isolate a section of code and verify its correctness. A unit may be an individual function, method, procedure, module, or object.

- **Check with register user**

  Test data input:



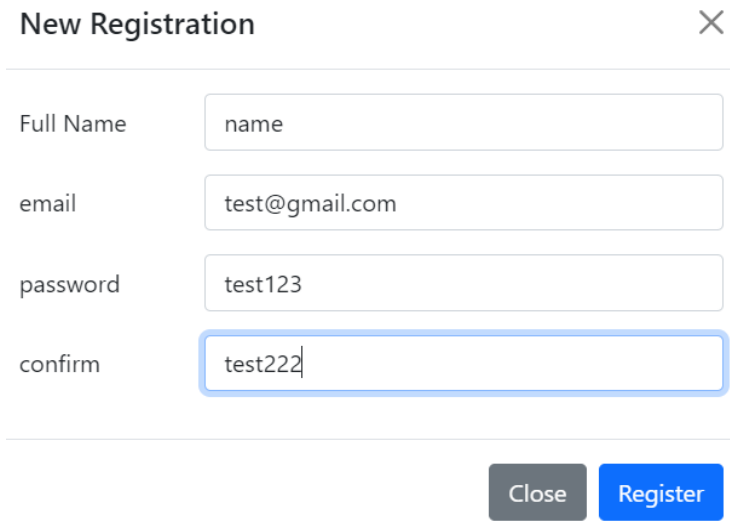
  Expected result: successful.

  Obtained result:

  Remarks: pass

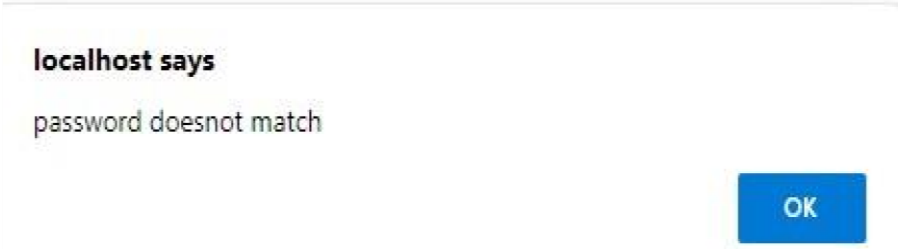
- **Check with password and confirm password**

  Test data input:



Expected result: Password and confirm password must be same.

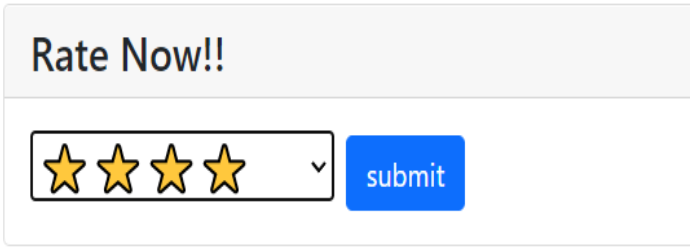
Obtained result:



Remarks: unsuccessful

- **Check with user rating**

  Test data input:



  Expected result: success

  Obtained result:

Rating Details

SN	Title	users	Rated value
1	hello it nice news	tony@gmail.com	4

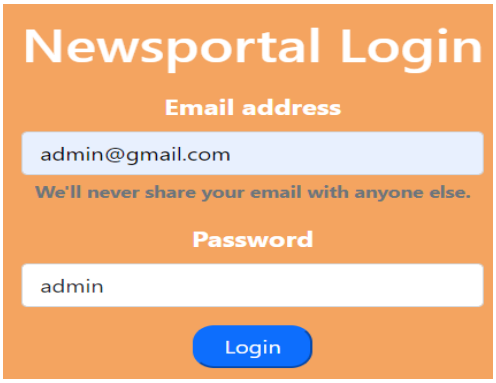
  Remarks: pass

4.2.2 Test cases for System Testing

System Testing is a type of software testing that is performed on a complete integrated system to evaluate the compliance of the system with the corresponding requirements. System Testing is carried out on the whole system in the context of either system requirement specifications or functional requirement specifications or in the context of both.

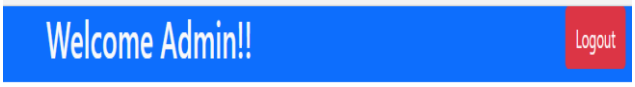
- **Check with admin login**

  Test data input:



  Expected result: open dashboard of users

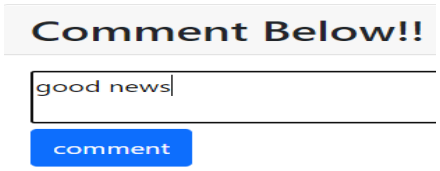
  Obtained result:



  Remarks: successfully login

- **Check with comment**

  Test data input:



  Expected result: retrieve data in comment table of admin panel.

  Obtained result:

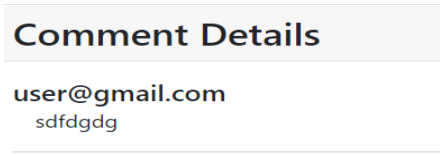
  Remarks: Comment successful

- **Check with approving comment**

  Test data input:

  Expected Outcome: shows approved comment details in of user and admin

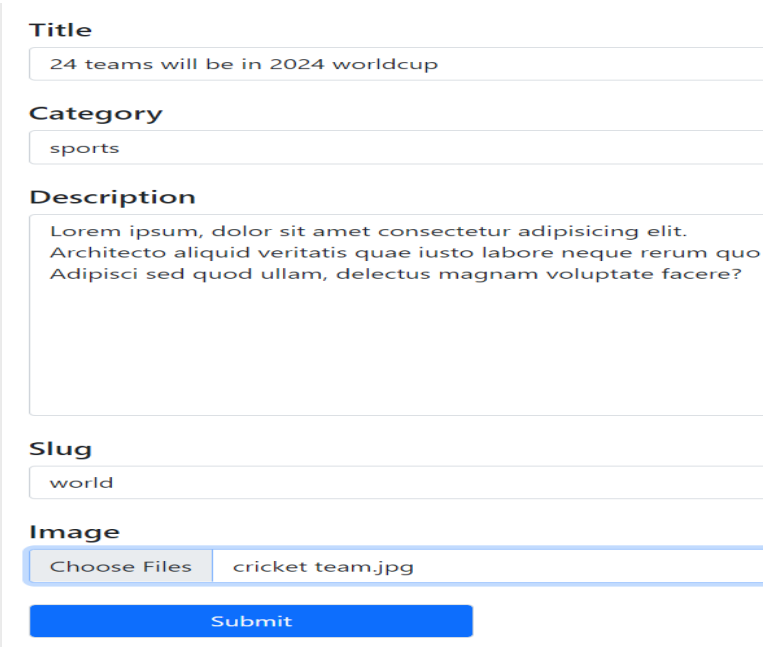
  Obtained result:



  Remarks: pass

- **Check with adding news**

  Test data input:



Expected result: insert data in database and retrieve in news table of admin and in user dashboard and inside category

Obtained result:

News Details

SN	Title	catid	description	slug	image	date	Action
1	kathmandu	2	kathmandu gets into the final	kath		2022-06-28 00:25:03	Edit Delete
2	rainy season	4	Rainy season started in nepal	rain		2022-06-29 00:38:03	Edit Delete
3	24 teams in 2024 worldcup	2	Lorem ipsum dolor sit amet consectetur adipisicing elit. Libero omnis repellendus velit facere fuga consectetur quae molestias, tempore ab cumque, delectus voluptates aliquam! Nihil esse eveniet labore vero, debitis placeat!	world		2022-06-29 00:39:13	Edit Delete

Remarks: Successfully added

Chapter 5: Conclusion and Future Recommendations

5.1 Conclusion

At the end of this project, the experience of working single has been got. The use and implementation of the web-based application has been learnt by this project. This project is developed using PHP, MySQL, and JavaScript in visual studio code.

With the completion of this project it has been possible to read news from anywhere with the use of the internet and also be able to see popular news. This system contains news and information about users. This system shows the comment field where users can express their views regarding news. This system displays only approved comments on comment details. Users of this system can edit their profiles. And also this system shows the news according to their category.

5.2 Lesson learnt/Outcome

This system is expected to be fully interactive, reliable, and efficient. This system also wants user's to fully trust and rely on this system. At the end of this project, the system would be fully functional that has meet our own expectation.

5.3 Future Recommendation

The system has limited features. In the future, we can add features like audio and video news and province-wise news.

Appendices

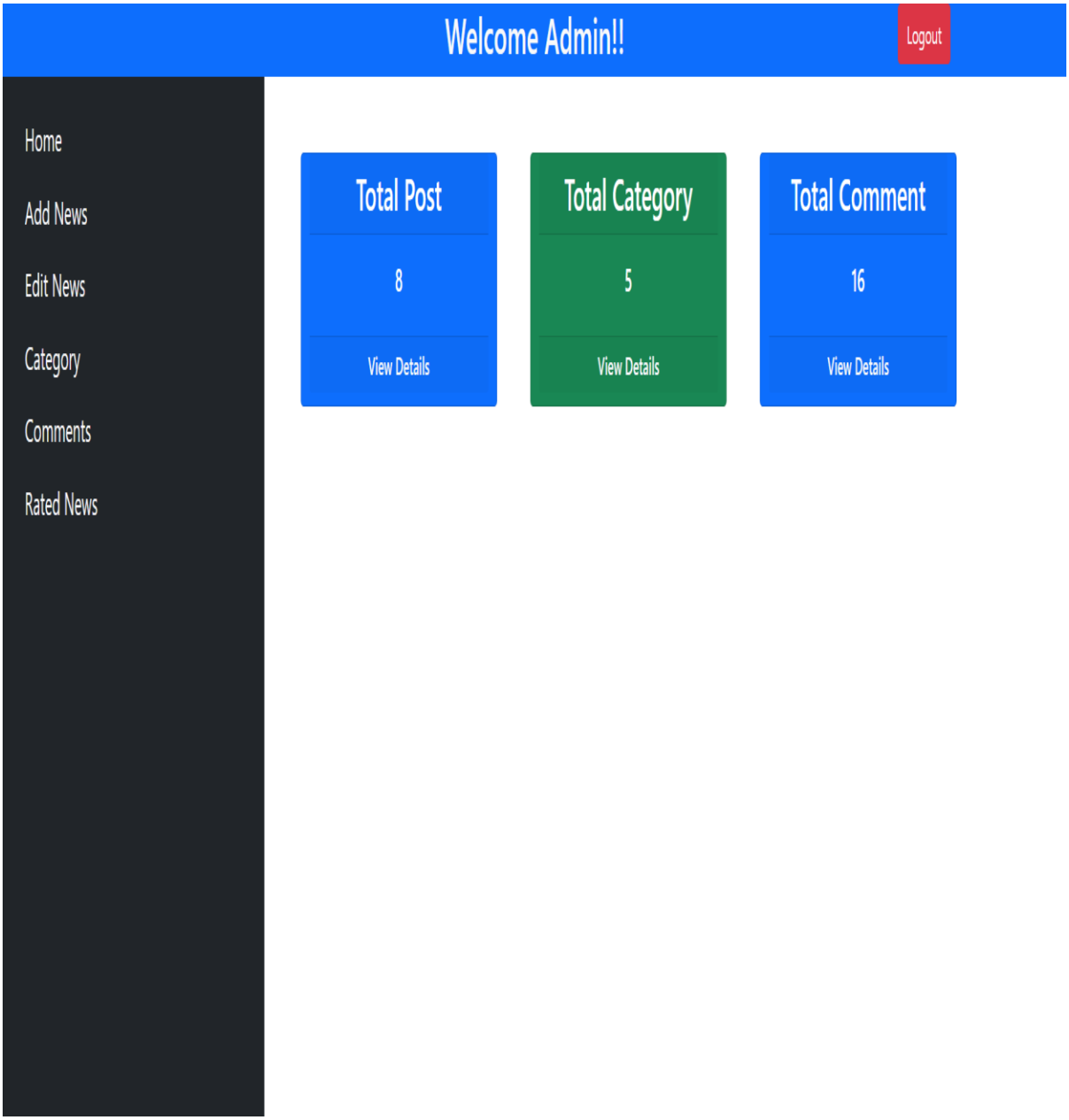


Fig 1: Admin Dashboard

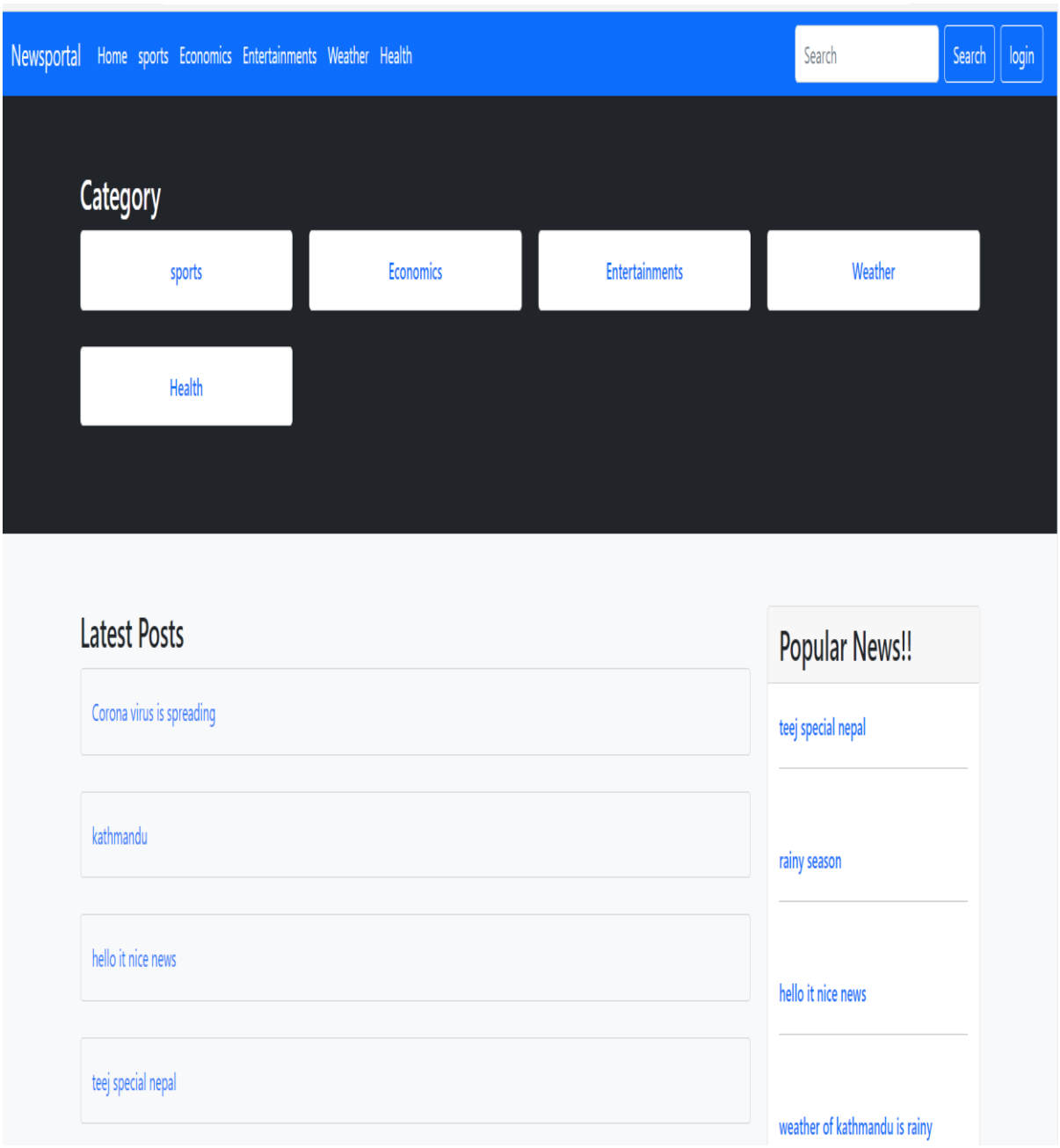


Fig 2: User Dashboard

Fig 3: User login

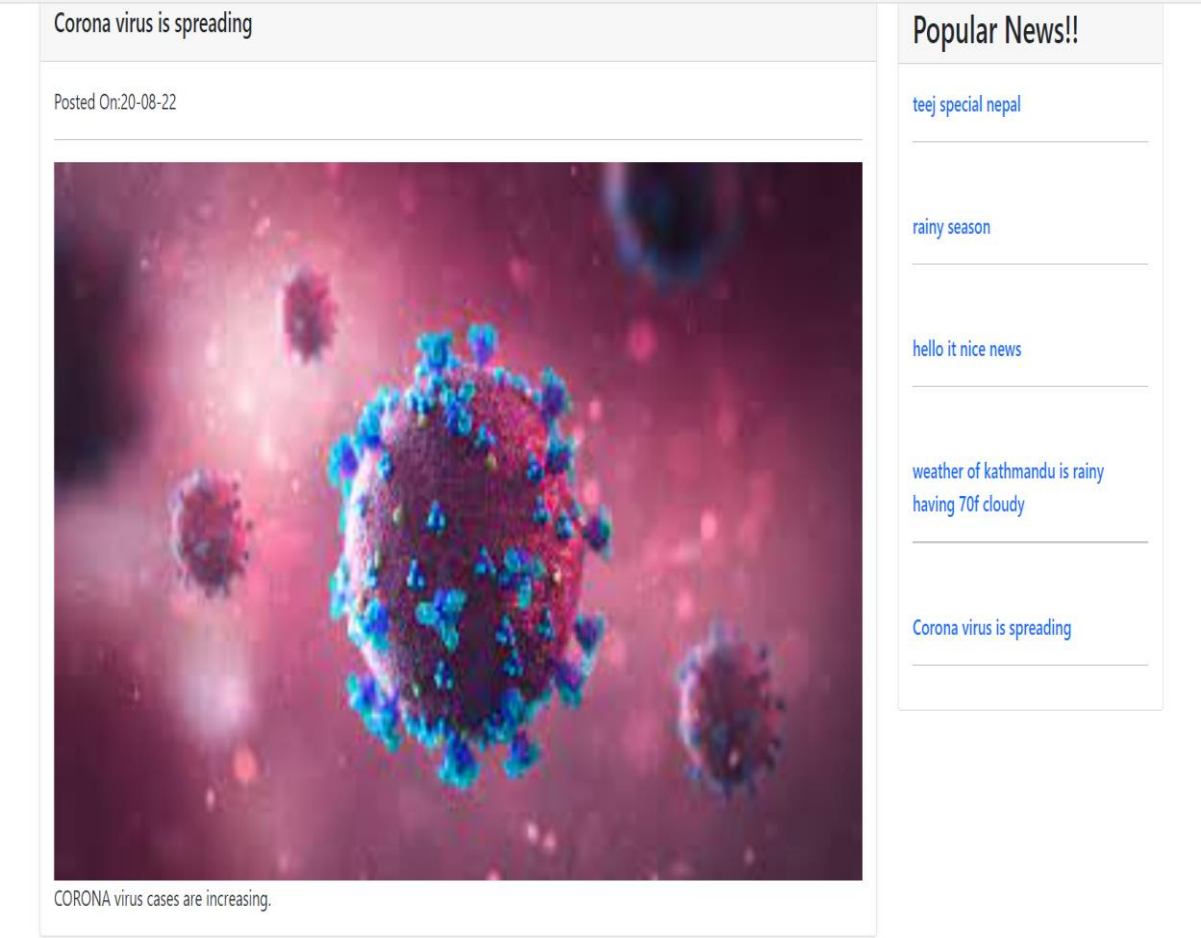


Fig 4: Post Dashboard

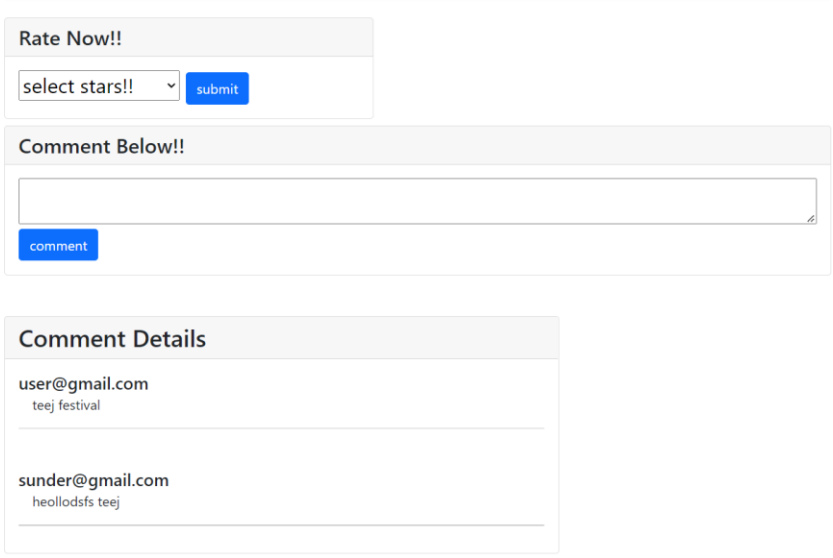


Fig 5: Rating and comment Dashboard

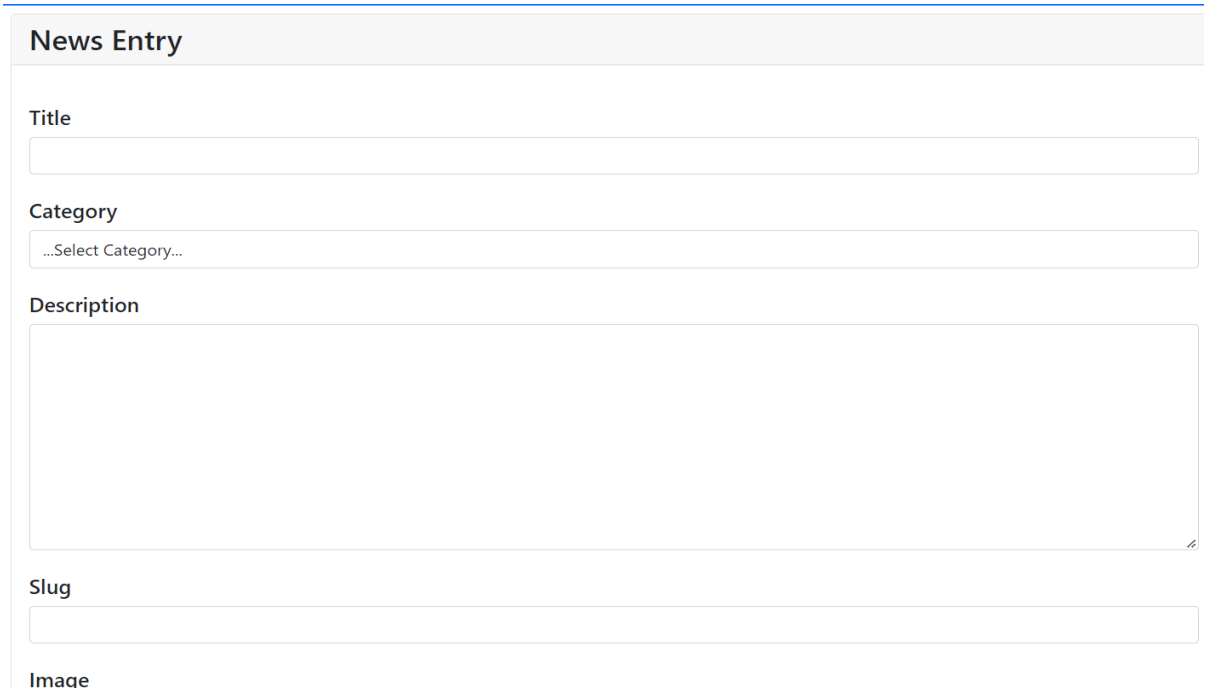


Fig 6: Admin Dashboard

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