



# East West University

(Department of Computer Science and Engineering)

## Online News Portal Project Report

**Course Name:** Software Engineering & Information System Design

**Course Code:** CSE 411

**Section:** 02

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# **1. Introduction & Objectives**

## **1.1 Introduction**

The purpose of the Online News Portal is to develop an internet based online live news Portal system and provides news for the general people. All the news collected by local or other corresponded will be sent to portal news authority. The administrator board verify the news authenticity and then the publisher publish the news. The admin can manage or delete the news after the news publication. Readers can view the news headline or full news article and also can share news and readers opinion to his/her Facebook profile. The project is developed by using PHP framework and MySQL to handle the database in the back end. For the front end, HTML5 is used. Bootstrap and CSS is used to design the website.

## **1.2 Project Motivation**

a) The first motivation is to create a dynamic digital newspaper system which will be helpful for all. A dynamic web-based news portal mainly for the viewers. Searching news of any date, any topic makes easier to the reader.

b) Another motivation is to stop using paper to read news. That will reduce the pollution of the world.

## **1.3 Objectives**

i) To introduce a new dynamic website for online news portal. Which is easy to use for the publisher and also for the readers.

ii) To get the details news instantly, People doesn't have to wait for next day morning for the newspaper. To read the in details.

iii) Developing the article share on Facebook instead of portal comments. That makes the portal bullying free the portal. Anyone can share his/her opinion to Facebook with their own responsibility.

# **2. Software Development Life Cycle (SDLC)**

## **2.1 SDLC**

In software engineering , Software Development Life Cycle (SDLC) is a structured sequence of stages to develop the software product. These sequence of stages is also well defined. It is nothing

but a series of steps, which is followed to develop the product efficiently. The SDLC framework includes the following steps:

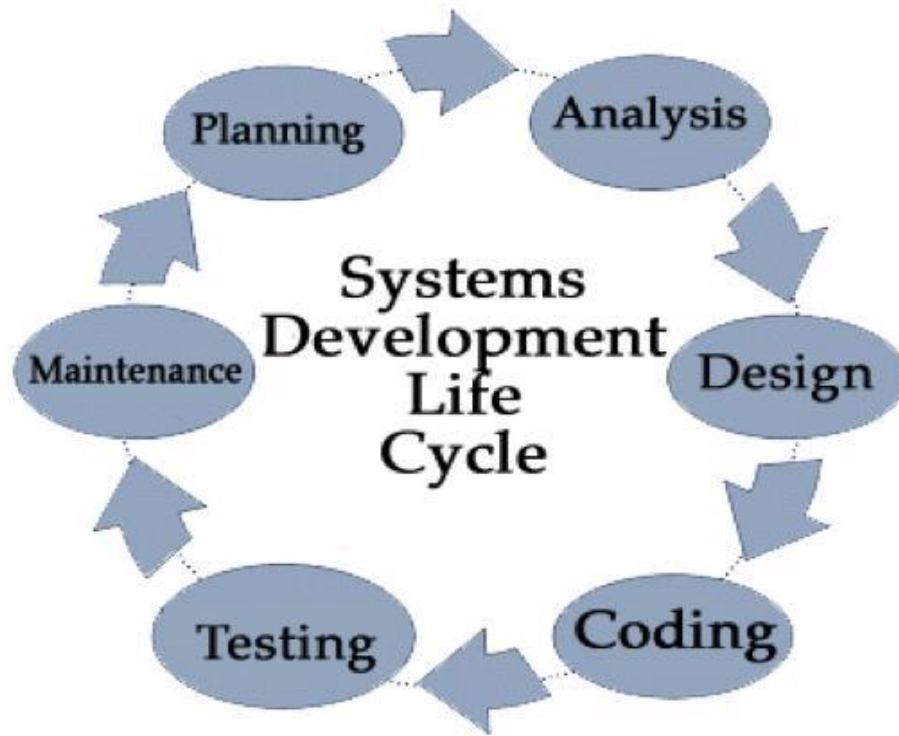


Fig 2.1: SDLC

## **2.2 SDLC Models**

There are different types of SDLC model. Different types of models followed different type problem solution. It is selected by the developer organization to solve the specific problem. Each process model maintains a series of unique steps to ensure the software quality, customer/user satisfaction, time and budget limitations and all other challenges of developing the software product.

There are some popular and most important models that follows in the industry:

- Waterfall Model
- Iterative Model
- V-Model
- RAD Model
- Incremental Model
- Big Bang Model
- Spiral Model
- Agile Model

### **2.3 WATERFALL MODEL DESIGN**

Waterfall approach used widely in software engineering, and it was first SDLC model which used to ensure the success of the project. In this model the whole process is divided into specific phases. Typically, the outcome of one phase is the input of next phase. It occurs sequentially.

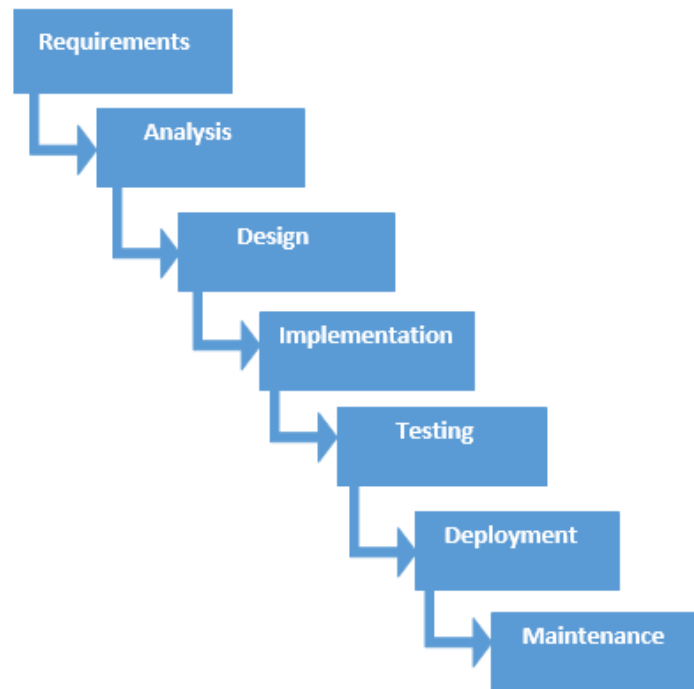


Fig 2.2: Water Fall Model

#### **2.3Feasibility study:**

##### **1. Technical:**

Technically all the software and tools are avail in the internet and all of these tools are totally free to use. Skills which is required to complete the project is also manageable. So our software is technically feasible.

##### **2. Operational:**

The News publisher can easily create any article with photograph and then upload it to the server. And reader can read the news by viewing headline and short description and full article also

Without sharing their data and if reader wants reader can be a registered to person to achieve more features. By the means of Facebook API viewers can share the news article and also his opinion. So it is operationally feasible

### **3. Economical:**

It is a fully web application system, so it needs hosting. Now days there many free webhosting service to test and cheap hosting package is available in local market which provide more bandwidth, storage and less limitation. For security purpose Facebook accept only WOT or similar organization verified domains. For this a real domain is required. This also available in two versions, free and premium. For testing purpose we used a free domain name to work the Facebook API correctly. Our estimated cost on this project is negligible. Besides all the tools we need is free so our software have economic feasibility.

## **2.4 Requirements Modeling & Specification**

### **2.4.1 Requirement analysis:**

Requirement analysis is a software engineering task that fill the gap between software design and system level software allocation. It specify the software function and software interface with the other system channels. It helps to software designer to represent the information about the function which translate to the data and architectural and procedural design.

### **2.4.2 Functional Requirement**

**1. View News:** The Home Page of the website contains all published news with headline named title, picture, and short description. News is showing descending order according to published/upload date. By selecting a news they can view full article. News is visible to user instantly after posted a new news.

**2. Search News:** Any person registered, or guest user can search the news with any word or phrase. This system searches the news on title and description.

**3. Registration:** User can sign up by filling up username, email and password form. Then the user can sign in to get extra feature of news portal. For security purpose system store password after encryption. Before completing the registration system check the email, if the user already registered. If any error occurs in time of registration system can be notify specifically about the error, that makes the user to understand about the input error.

**4. View Full Article:** Full article or description of a user selected news should be shown in a single full page. That is user can read the news easily and elaborately.

**5. Log In:** User can sign in using email and password. The email and password verify with data provided in time of registration. After log is User can see the news as category as extra feature. In case of authorization fails system notify about the error

**6. Log In as Admin:** Admin user can't register himself as admin. The admin log in credentials store the database manually. After authentication Admin can use admin dashboard. If authorization failed then system notify about the error.

**7. Manage News:** Admin can add new news. Modify existing news and delete already existed news using admin dashboard. After any changes made system give prompt or confirmation to the user

**8. Manage Category:** Admin can add new category, Delete already existed category from admin dashboard. Confirmation should be shown to the admin user.

**9. Admin Info Change:** From admin dashboard, admin can change admin log in credentials and other info. Admin info is shown in the top of

**10. Authorization:** The system should be designed in such a way, non-registered user cannot enter into the registered user section without his/her email and password, not even admin. All of the email and password will be saved in the database. If authorization fails system notify about what kind of error occur.

### **2.4.3 Non-Functional Requirements:**

1. **Efficiency requirement:** The implementation of this online news portal would efficient enough to the reader to read and find the news easily. Administrator can easily manage the news. The system is efficient enough in both side to publish and read the news.
2. **Reliability Requirement:** The system is reliable as the management of the news is handle by the authorized admin only. So the news is verified by publication board. Admin session and page is hidden from the user side. The user and admin sensitive data like password is stored in database after encryption using md5 hash algorithm. Thus no one can see the exact password even from database.
3. **Availability Requirement:** The portal is 24 hours live on the server. User can read the news anytime any day when they want. People can get the news instantly as soon as the admin publish the news.
4. **Usability Requirement:** The system user interface (UI) is very user-friendly. Reader can read and share the news in his Facebook timeline easily. It runs on any internet connected device which has internet browser. Admin can easily manage the news

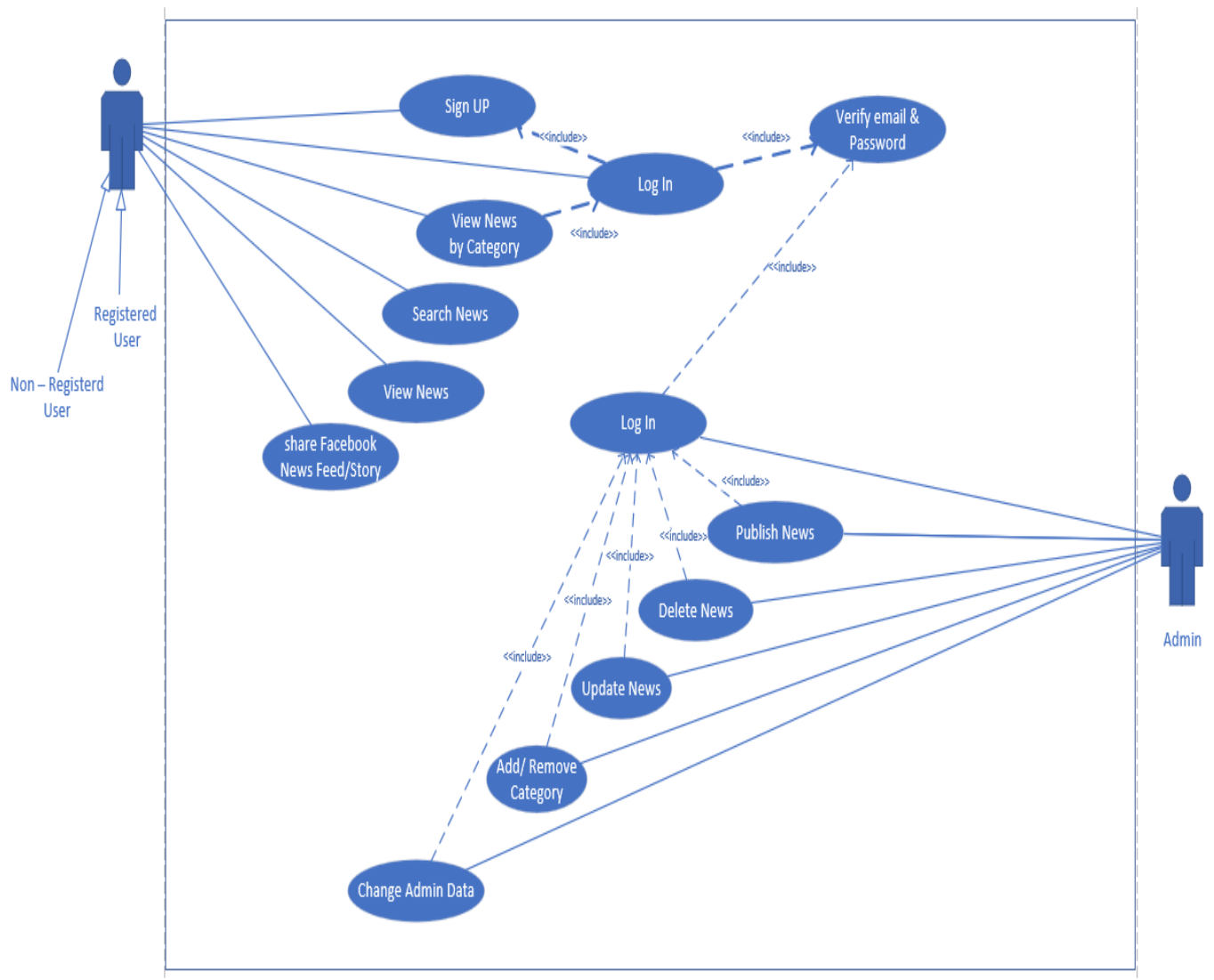
without any hassle, even when he is out of office even mid night if he want to publish a new news or article.

#### 2.4.4 Performance Requirements

Performance Requirements define the response time for system function that can Be accepted. The loading time of the user interface should not long than two seconds.

The Log in and other queries should be completed and give result within five seconds.

### Use Case Diagram



**Use Case Description:**

|                          |  |
|--------------------------|--|
| Use Case (1)             | Sign UP  |
| Goal in Context          | This use case registered a non-registered reader                                 |
| Precondition             | Users just have to click on Log in then click sign up                            |
| Success End Condition    | Users can get registered to achieve extra feature                                |
| Failed End Condition     | Error in Input data  |
| Primary Actor            | Non-Registered user  |
| Secondary Actor          | None   |
| Trigger                  | Click on Sign In then click Sign Up for Registration                             |
| Description              | Users have to provide username, email, password.                                 |
| Extensions or Variations | 1. Password error if not fulfill requirements<br>2. Email error if already exist |

|                          |   |
|--------------------------|---|
| Use Case (2)             | User Log In   |
| Goal in Context          | This use case sign in to the registered user                      |
| Precondition             | Users must be registered before log in                            |
| Success End Condition    | Users can enter user dashboard and get extra feature              |
| Failed End Condition     | Failed in Authorization   |
| Primary Actor            | Registered user   |
| Secondary Actor          | None  |
| Trigger                  | User have click on Log In option shown in header left side        |
| Description              | Users have to provide, email, password.                           |
| Extensions or Variations | 1. Password error if not matched<br>2. Email error if not matched |



|                          |   |
|--------------------------|---|
| Use Case (3)             | View News by category   |
| Goal in Context          | This use case show all the news by category   |
| Precondition             | Users must be logged in and in session  |
| Success End Condition    | Users can view all published news category wise   |
| Failed End Condition     | Session End or Logged out   |
| Primary Actor            | Registered user   |
| Secondary Actor          | None  |
| Trigger                  | Click Log In and provide log in credentials   |
| Description              | User can see all the category wise news in short can view by clicking read more button. |
| Extensions or Variations | none  |

|                          |  |
|--------------------------|--|
| Use Case (4)             | Search News  |
| Goal in Context          | This use case show all the searched news in the home page                                |
| Precondition             | Users just go to the link and search with a word or phrase                               |
| Success End Condition    | Users can view all news that matched with the word of phrase in the title or description |
| Failed End Condition     | Not matched with any news  |
| Primary Actor            | Registered & Non-Registered user   |
| Secondary Actor          | None   |
| Trigger                  | Click the search button and input the word   |
| Description              | User can see all the news in short can view which matched with the published news        |
| Extensions or Variations | None   |

|                          |   |
|--------------------------|---|
| Use Case (5)             | View News   |
| Goal in Context          | This use case show all the news in the home page  |
| Precondition             | Users just go to the link   |
| Success End Condition    | Users can view all published news   |
| Failed End Condition     | Network error   |
| Primary Actor            | Registered & Non-Registered user  |
| Secondary Actor          | None  |
| Trigger                  | Go to the link directly   |
| Description              | User can see all the news Title, Image, short description. Details can view by clicking read more button. |
| Extensions or Variations | Connection not established.   |

|                          |   |
|--------------------------|---|
| Use Case (6)             | Read More and Share in Facebook Timeline  |
| Goal in Context          | This use case show full article/ description and share option   |
| Precondition             | Users just click read more button & Registered Facebook User if want to Share   |
| Success End Condition    | Users can view full article of published news and view the news in his/her Facebook Timeline  |
| Failed End Condition     | Network error or Facebook authorization faied   |
| Primary Actor            | Registered & Non-Registered user  |
| Secondary Actor          | Registered Facebook User  |
| Trigger                  | Click the share button if want to share   |
| Description              | User can view the full news view the counted number, that how many time it shared in Facebook. He can also share the news and his opinion about the news. |
| Extensions or Variations | News is also published in the Facebook  |

|                          |   |
|--------------------------|---|
| Use Case (7)             | Admin Log In  |
| Goal in Context          | This use case show log in interface for the admin   |
| Precondition             | Admin credentials must be stored in database by the system engineer or database administrator |
| Success End Condition    | Admin can see Admin dashboard   |
| Failed End Condition     | Credentials authorization failed.   |
| Primary Actor            | Authorized Admin  |
| Secondary Actor          | None  |
| Trigger                  | Admin can log on a specific page link   |
| Description              | Authorized person/admin can make necessary change in the news portal after log in             |
| Extensions or Variations | None  |

|                          |   |
|--------------------------|---|
| Use Case (8)             | Add News  |
| Goal in Context          | This use case shows Publication of New News                     |
| Precondition             | Admin must be logged in and true session                        |
| Success End Condition    | News has been published successfully                            |
| Failed End Condition     | Database error  |
| Primary Actor            | Administrator   |
| Secondary Actor          | None  |
| Trigger                  | Click on Manage news from Admin Dashboard                       |
| Description              | This way publisher can publish new news any time from anywhere. |
| Extensions or Variations | None  |

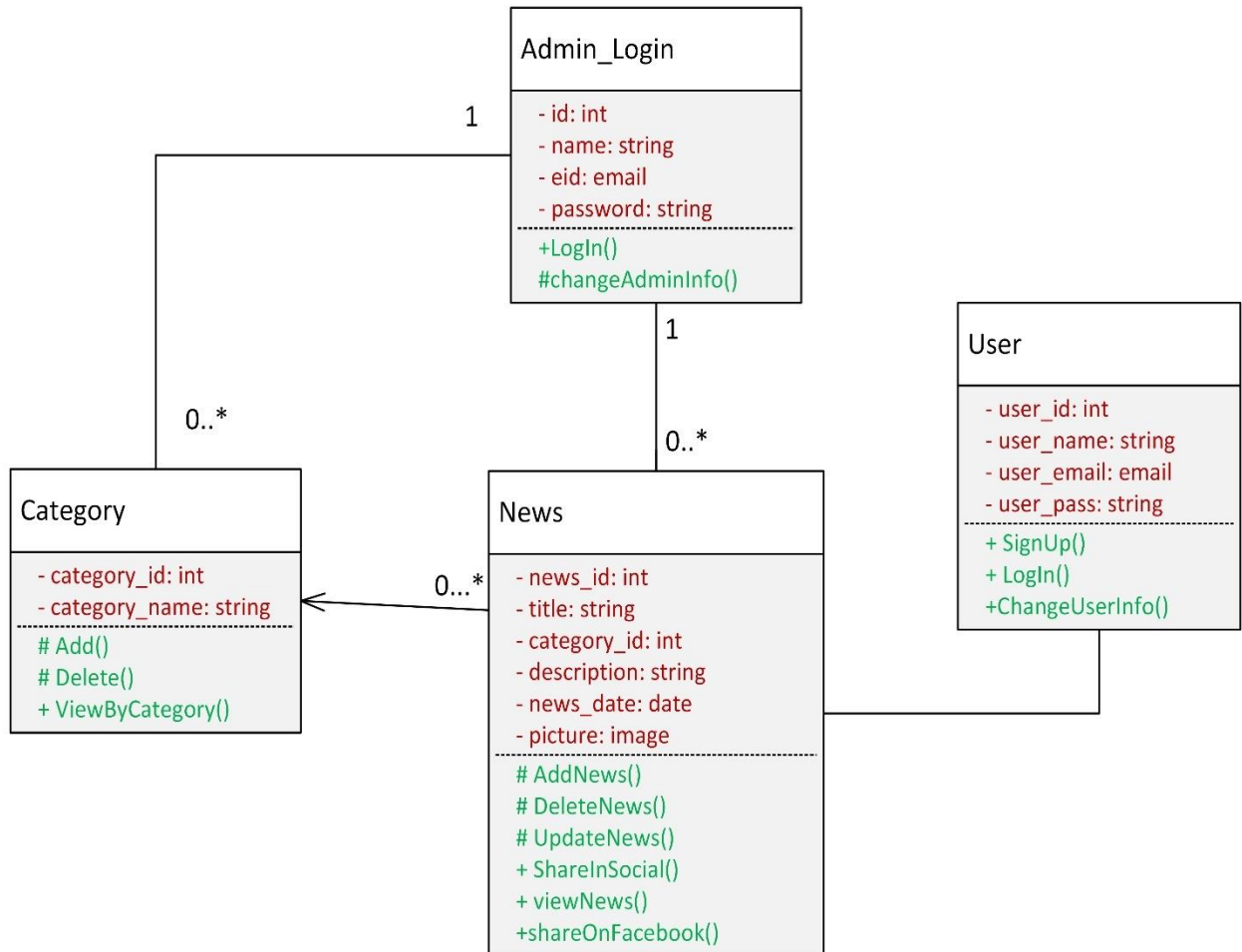
|                          |   |
|--------------------------|---|
| Use Case (9)             | Delete News   |
| Goal in Context          | This use case shows Delete already published news                     |
| Precondition             | Admin must be logged in and true session                              |
| Success End Condition    | News has been deleted successfully from the database                  |
| Failed End Condition     | Database error  |
| Primary Actor            | Administrator   |
| Secondary Actor          | None  |
| Trigger                  | Click on Manage news from Admin Dashboard                             |
| Description              | This way publisher can delete publish new news anytime from anywhere. |
| Extensions or Variations | None  |

|                          |   |
|--------------------------|---|
| Use Case (10)            | Update News   |
| Goal in Context          | This use case shows any changes already published news  |
| Precondition             | Admin must be logged in and true session  |
| Success End Condition    | News has been updated successfully from the database  |
| Failed End Condition     | Database error or failed to find specific news  |
| Primary Actor            | Administrator   |
| Secondary Actor          | None  |
| Trigger                  | Click on Manage news from Admin Dashboard   |
| Description              | This way publisher can make any change in image, title, description any published new news anytime from anywhere. |
| Extensions or Variations | None  |

|                          |   |
|--------------------------|---|
| Use Case (11)            | Add/ Remove Category  |
| Goal in Context          | This use case used for Category management                        |
| Precondition             | Admin must be logged in and true session                          |
| Success End Condition    | Category has been added or deleted successfully from the database |
| Failed End Condition     | Database error  |
| Primary Actor            | Administrator   |
| Secondary Actor          | None  |
| Trigger                  | Click on Manage Category from Admin Dashboard                     |
| Description              | Admin can make any change in news type named category             |
| Extensions or Variations | None  |

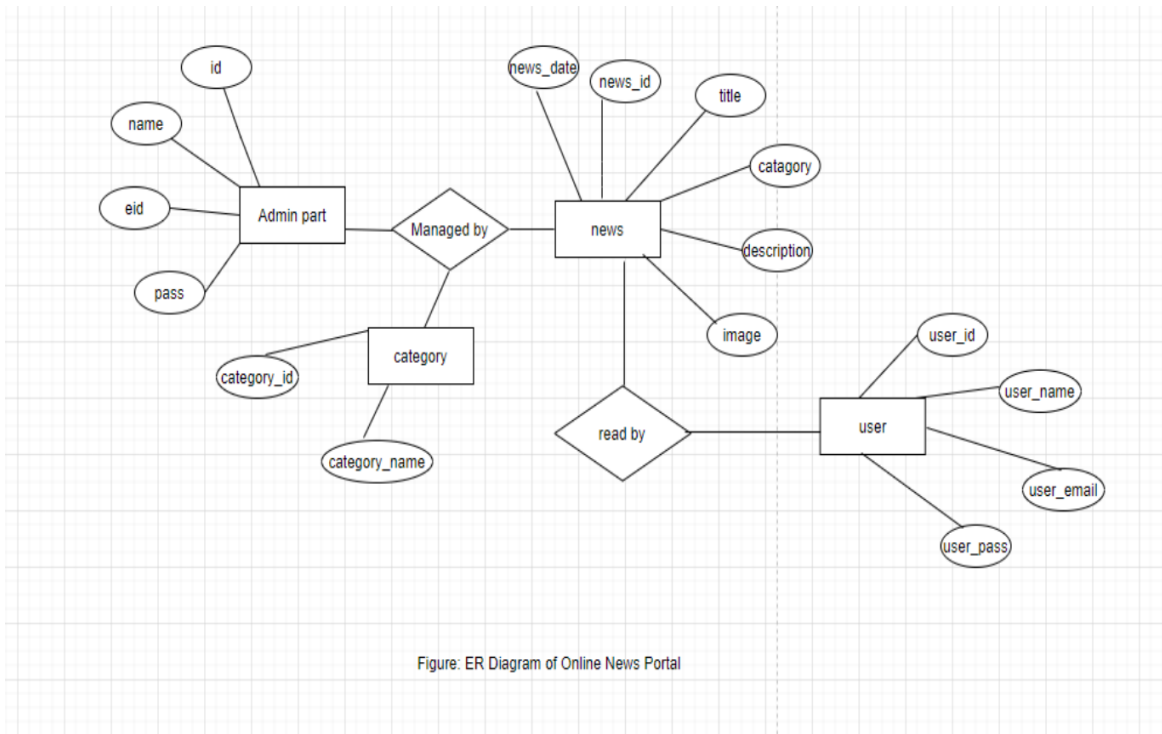
|                          |  |
|--------------------------|--|
| Use Case (12)            | Update Admin Info                                      |
| Goal in Context          | This use case shows admin information change           |
| Precondition             | Admin must be logged in and true session               |
| Success End Condition    | Specific admin information changes successfully        |
| Failed End Condition     | Database error   |
| Primary Actor            | Administrator  |
| Secondary Actor          | None   |
| Trigger                  | Change admin info from Admin Dashboard                 |
| Description              | Admin can make any change in admin email and password. |
| Extensions or Variations | None   |

## Class Diagram



## UML Class Diagram

## ER Diagram



ER diagram shows the table relationship between one another. There are two kind of relationship that's Managed by, Read by.

**Admin Part:** there has three attributes: ID, Name, Email ID is named 'eid' and a password.

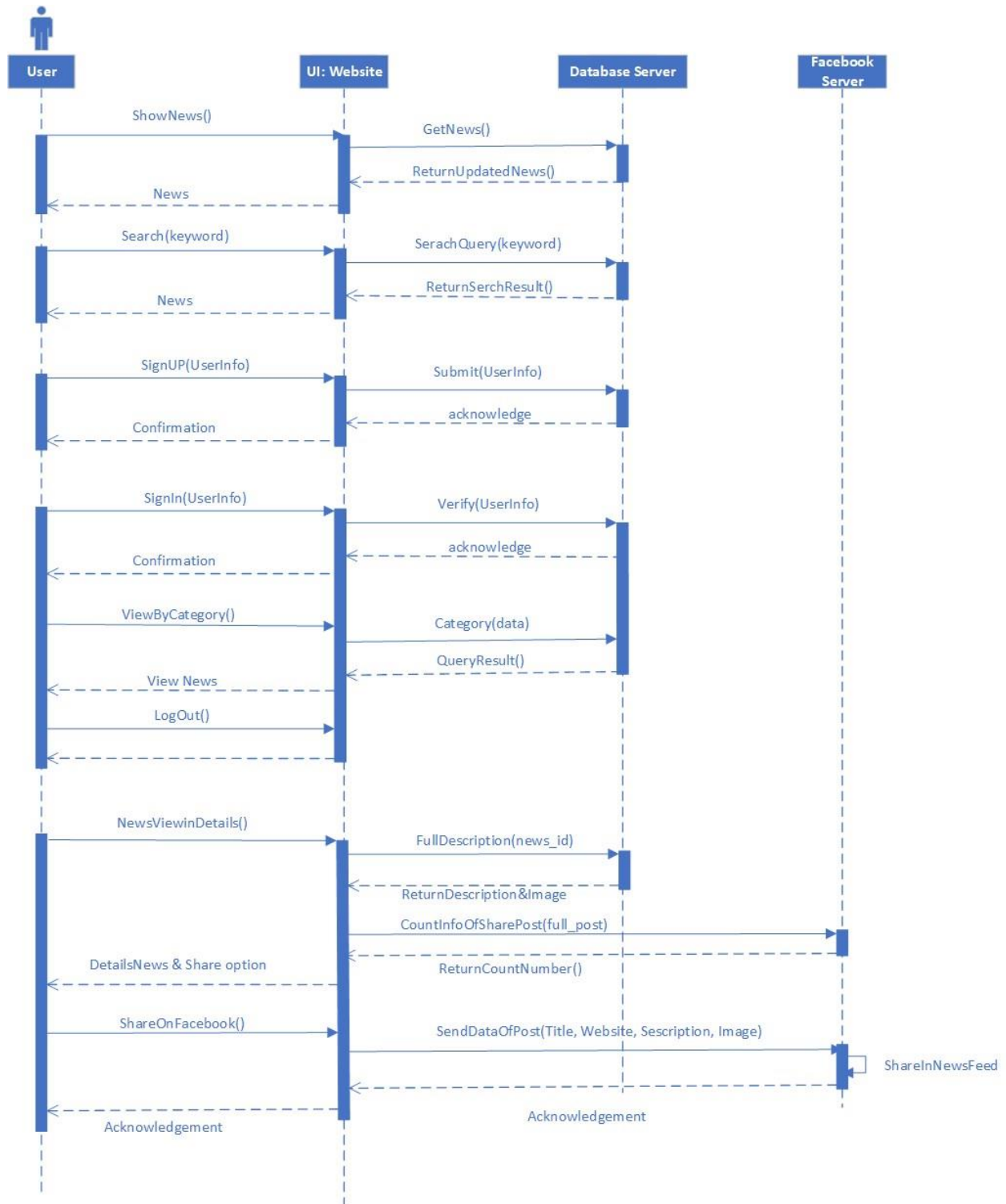
**News:** Six Attribute which are: News Publication Date, News ID, News Title as Headline, Category, Description – The main news body and Image.

**User:** Four attribute describe this relation: User ID, Username. User Email, User Password

**Category:** Category ID, Category Name. Which is just categorized the news to find the relative news easily from the reader end.

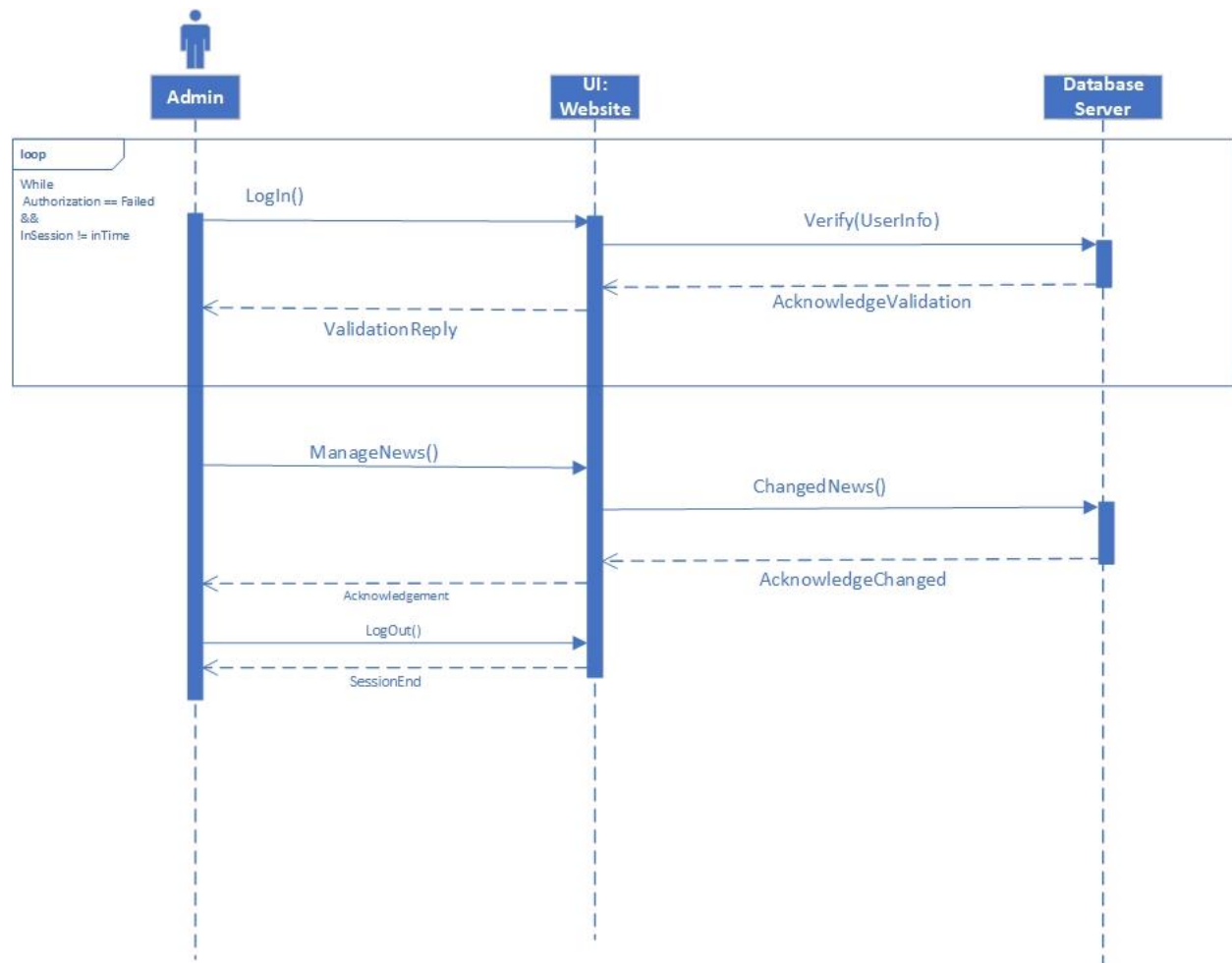
| Table       | Action                                    | Rows | Type   | Collation          | Size     | Overhead |
|-------------|---|------|--------|--------------------|----------|----------|
| admin_login | Browse Structure Search Insert Empty Drop | 4    | InnoDB | utf8mb4_general_ci | 16.0 KiB | -        |
| category    | Browse Structure Search Insert Empty Drop | 7    | InnoDB | utf8mb4_general_ci | 16.0 KiB | -        |
| news        | Browse Structure Search Insert Empty Drop | 11   | InnoDB | utf8mb4_general_ci | 16.0 KiB | -        |
| user        | Browse Structure Search Insert Empty Drop | 5    | InnoDB | utf8mb4_general_ci | 16.0 KiB | -        |
| 4 tables    | Sum                                       | 27   | InnoDB | utf8mb4_general_ci | 64.0 KiB | 0 B      |

## Sequence Diagram of User Interface

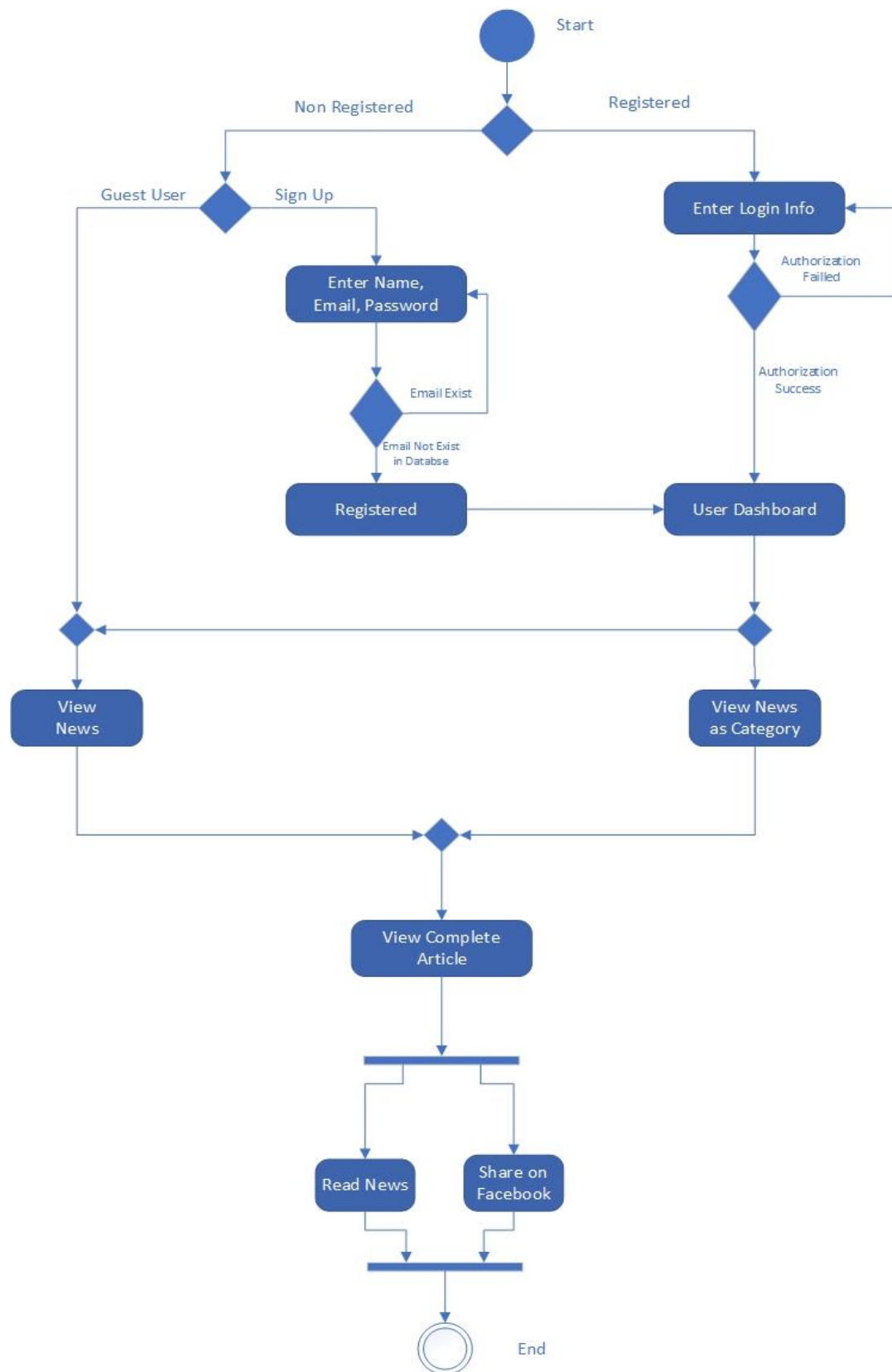




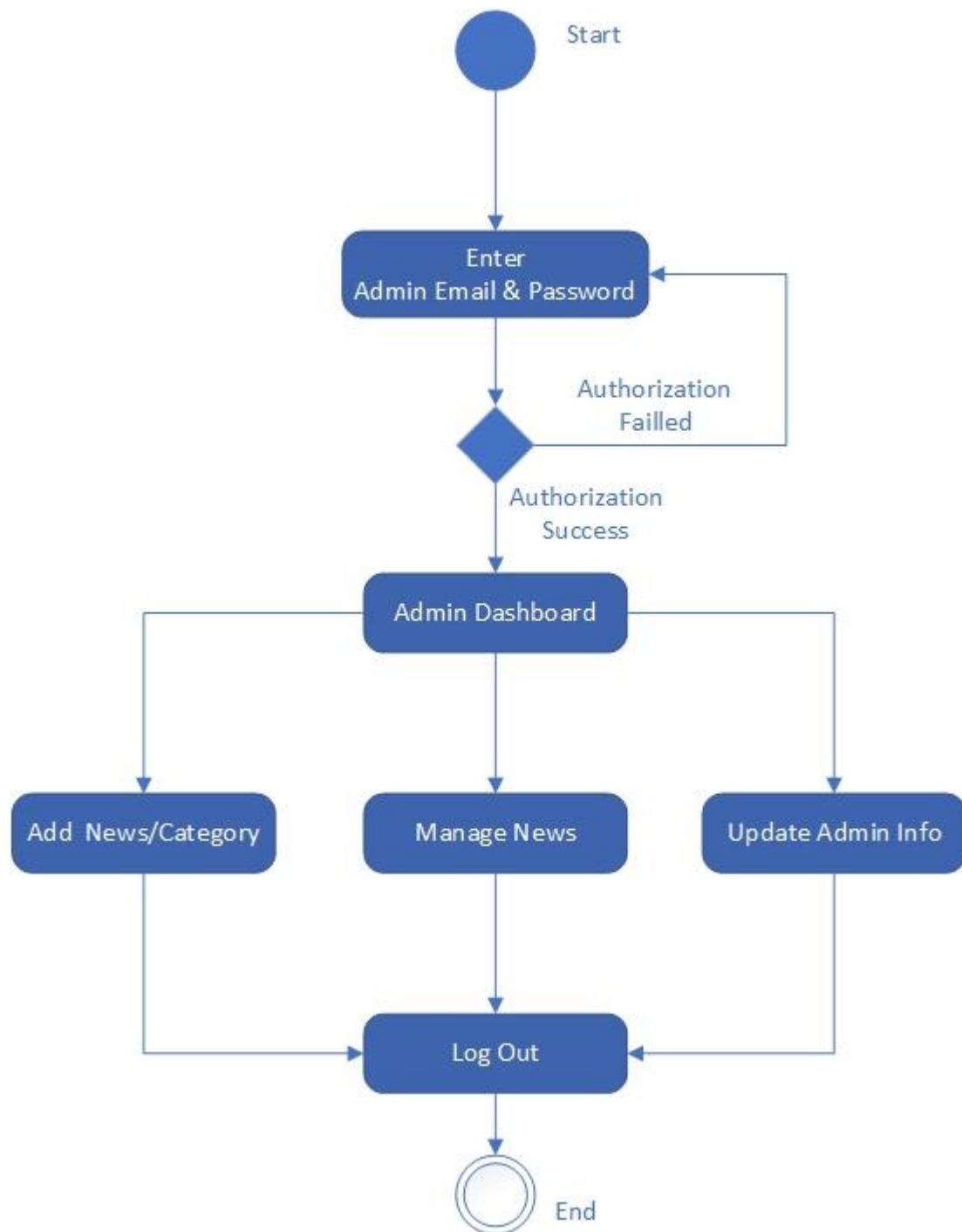
## Sequence Diagram of Admin Interface



## Activity Diagram of User Side



### Activity Diagram of Admin Side

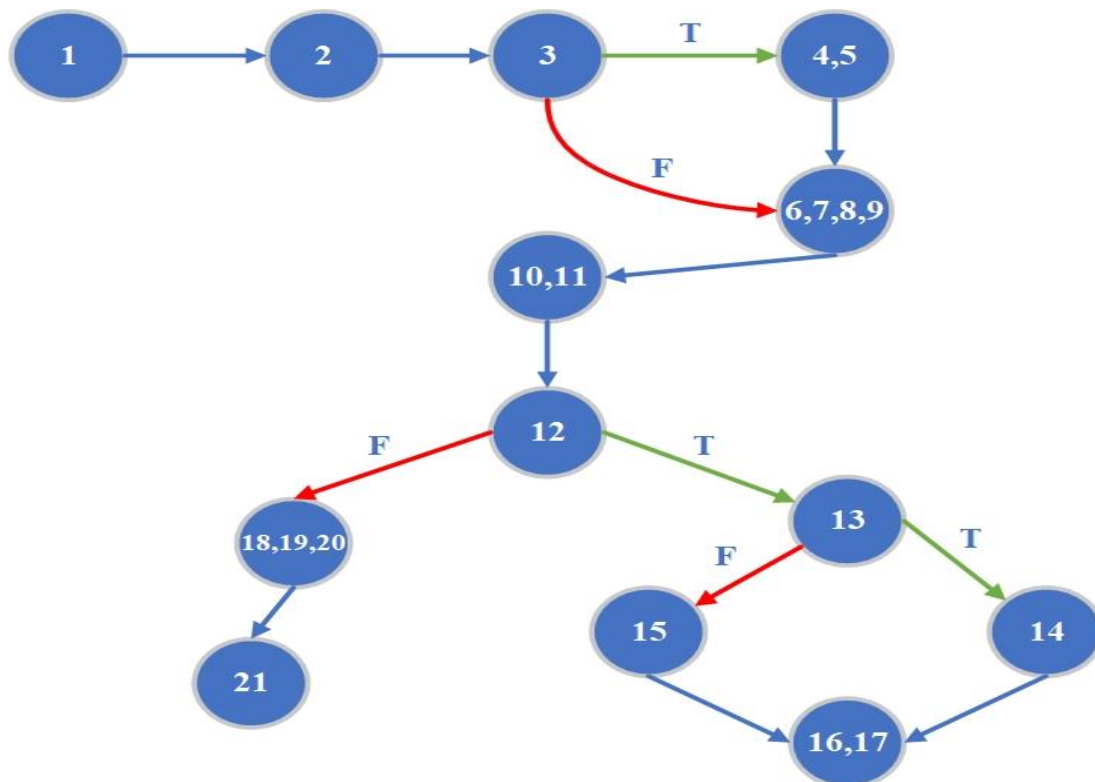


# Software Testing

## Test Case 1:

```
Test case 1 - Add News.php = x
1 <?php
2     include_once "../config.php";
3     if(isset($_FILES['image'])){
4         $image = $_FILES['image']['name']; // Get image name
5         $target = "upload/".basename($image); } // image file directory
6     $title = mysqli_real_escape_string($conn, $_POST['newstitle']);
7     $description = mysqli_real_escape_string($conn, $_POST['newsdescription']);
8     $category = mysqli_real_escape_string($conn, $_POST['category']);
9     $date = date('Y-m-d');
10    $sql = "INSERT INTO news(title, description, category, news_date, image)
11        VALUES ('{$title}', '{$description}', '{$category}', '{$date}', '{$image}')";
12    if(mysqli_query($conn, $sql)){
13        if (move_uploaded_file($_FILES['image']['tmp_name'], $target))
14        { echo "Image uploaded successfully";}
15        else{ echo "Failed to upload image";}
16        echo "<script> alert('News added');
17            window.location = 'add_news.php' </script>";}
18    else{ echo "<script> alert('News not added');
19        window.location = 'add_news.php'
20        </script>" }
21    ?>
```

## White Box Testing



Total Number of Nodes, **N** = 13

Total Number of Edges, **B** = 14

So,  $V(G) = E - N + 2 = 14 - 13 + 2 = 3$

Therefore **P** = 2

### Independent Program Path Data:

Path 1: 1-2-3-4-5-6-7-8-9-10-11-12-13-14-16-17

Path 2: 1-2-3-6-7-8-9-10-11-12-13-14-16-17

Path 3: 1-2-3-4-5-6-7-8-9-10-11-12-13-15-16-17

Path 4: 1-2-3-6-7-8-9-10-11-12-13-15-16-17

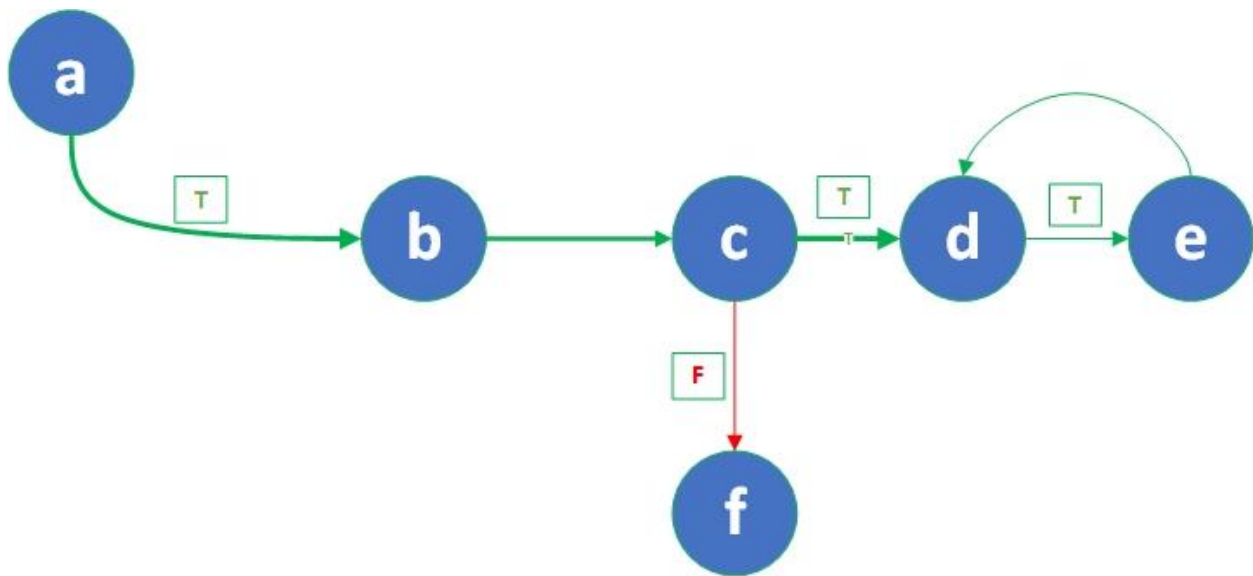
Path 5: 1-2-3-4-5-6-7-8-9-10-11-12-18-19-20-21

Path 6: 1-2-3-6-7-8-9-10-11-12-18-19-20-21

### Test Case 2:

```
Test case 2 - Search News.php ×
1  if(isset($_GET['search'])) {
2      $search = $_GET['search'];
3  }
4  <div class="mt-3 text-center alert alert-primary" role="alert">
5      <h4>You have searched: <?php echo $search; ?></h4>
6  </div>
7  <?php } ?>
8  <div class="container bg-link">
9      <div class="row">
10         <!-- Data collect -->
11         <?php
12             $result2 = mysqli_query($conn, "SELECT news.news_id, news.title, news.description, news.news_date, news.image, category.category_name FROM news
13                 LEFT JOIN category ON news.category = category.category_id WHERE news.title LIKE '%{$search}%' or news.description LIKE '%{$search}%' ORDER BY news.news_id DESC");
14             $count = mysqli_num_rows($result2);
15             if($count > 0) {
16                 while($data2 = mysqli_fetch_assoc($result2)) { ?>
17                     <div class="col-lg-4 mb-4">
18                         <div class="card" style="width: 18rem;">
19                             
20                             <div class="card-body">
21                                 <h5 class="card-title effect-underline text-center"><b><?php echo $data2['title']; ?></b></h5>
22                                 <p class="card-text text-center"><?php echo substr($data2['description'], 0, 170). " ..." ?></p>
23                                 <ul class="list-group list-group-flush">
24                                     <li class="list-group-item text-center"><?php echo $data2['category_name']; ?></li>
25                                     <li class="list-group-item text-center"><?php echo "Uploaded on: " . $data2['news_date']; ?></li>
26                                 </ul>
27                                 <a href="single_view.php?id=<?php echo $data2['news_id']; ?>" class="btn btn-primary">Read more...</a>
28                             </div>
29                         </div>
30                     </div>
31                 <?php } ?><?php }
32             else {
33                 <div class="text-center alert alert-secondary" role="alert">
34                     <h4>Sorry Nothing Found</h4>
35                 </div>; } ?>
36     </div>
37 </div>
```

## White Box Testing



### Here:

**a = 1**

**b = 2,3,4,5,6,7,8,9,10,11,12,13,14**

**c = 15**

**d = 16**

**e = 17,18,19,20,21,22,23,24,25,26,27,28,29,30,31**

**f = 32,33,34,35,36,37**

**Therefore,**

**N = 6**

**E = 6**

**so,  $V(G) = 2$  and  $P = 1$**

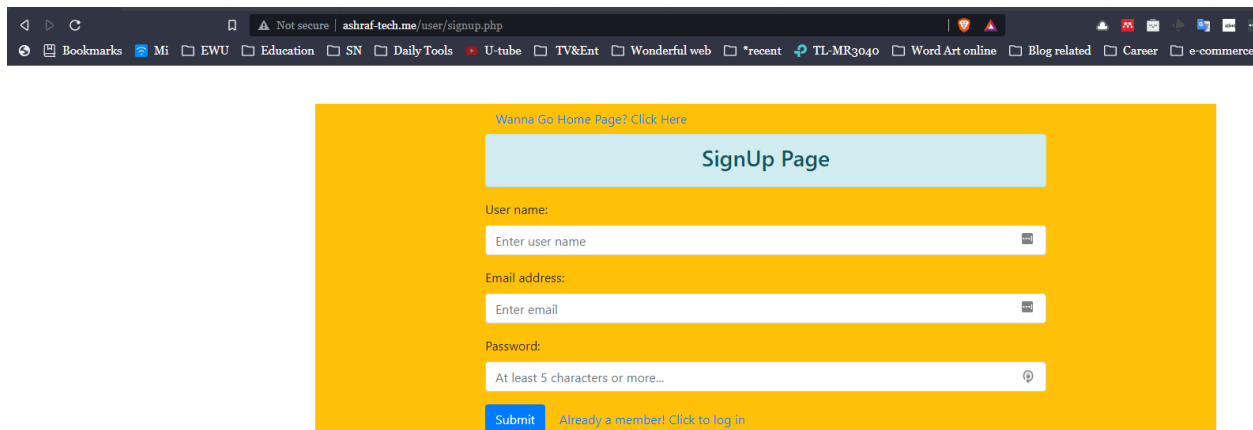
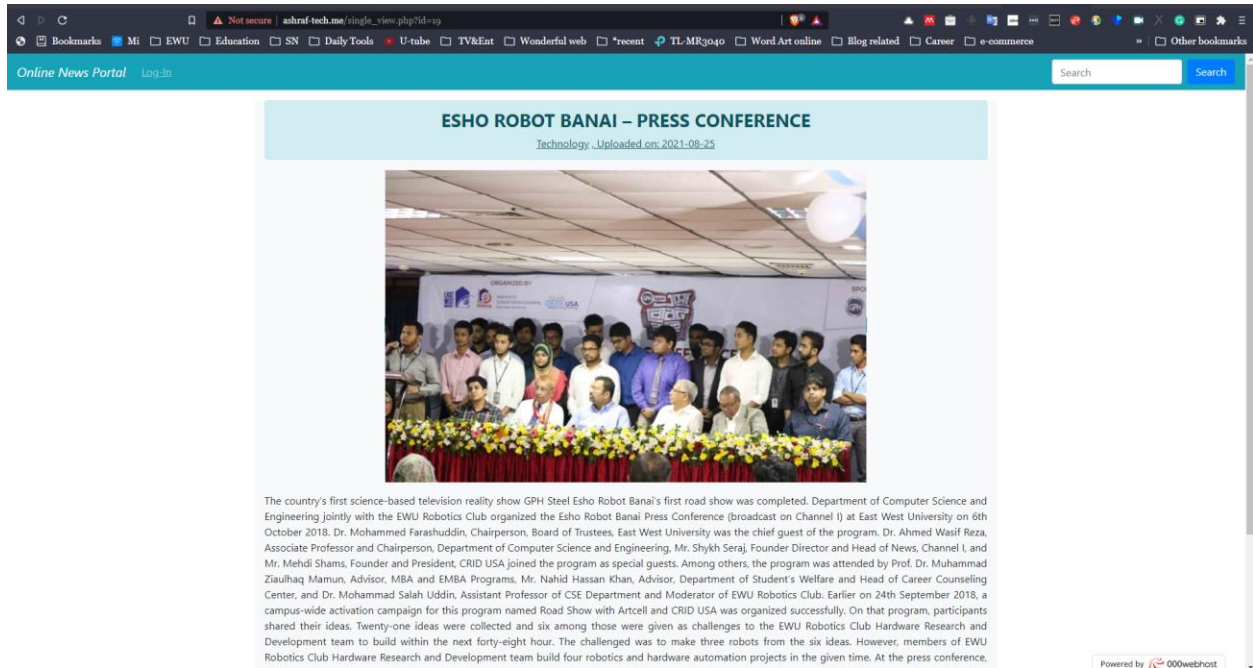
### Black Box testing:

The Project is live on : <https://www.ashraf-tech.me/>

or, <https://news-portal1.000webhostapp.com/>

So any one can log on this website and test the site.

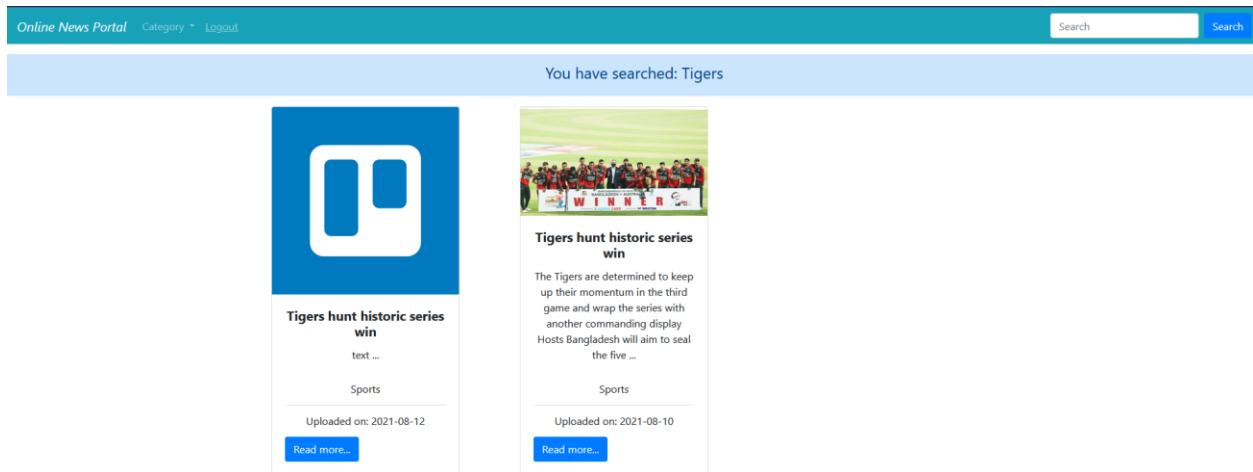
## Screenshot



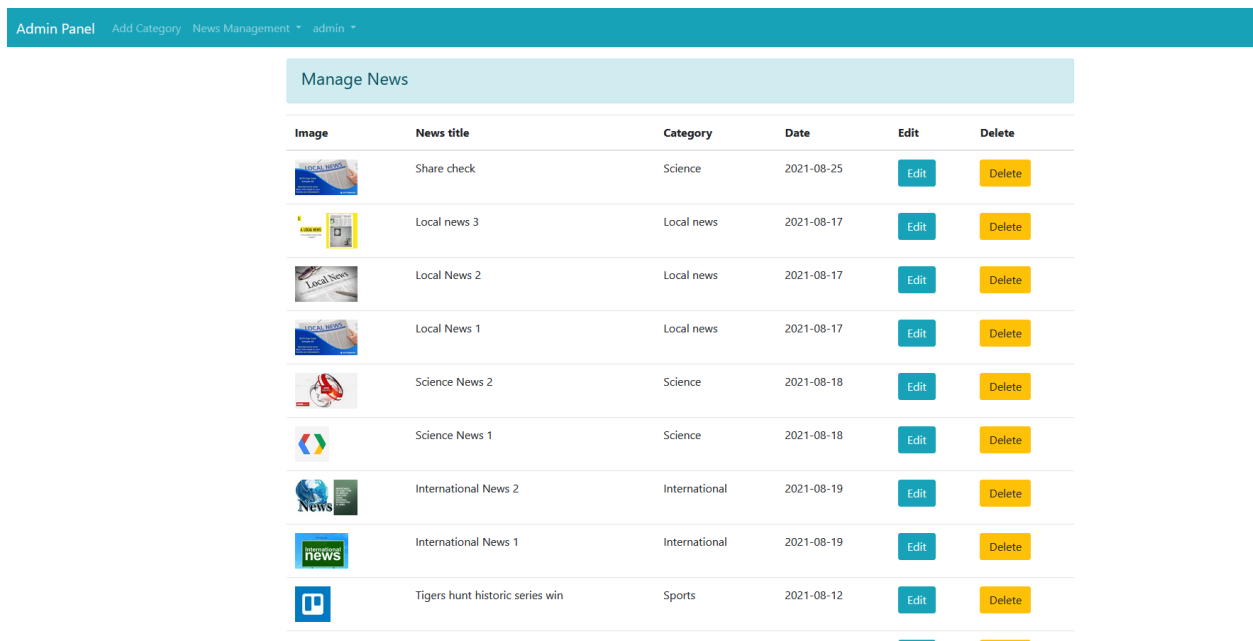
## View as Category



## Search Interface:



## Manage News Section



## Challenges:

Uploading and saving picture with unique name is really challenging for this project . Some unidentified bugs comes which cause much trouble in the beginning. In case of session handling. Hosting the live server and domain registration is also challenging part to make it working and error free.

## Conclusion

In this time of Information and Communication Technology, every task of our daily life is going to be digitalized. So the News publishing system is needed to be digitized. The main goal of our website would be to inform people about current events around the world.



**References:**

1. Pressman, Roger S. *Software engineering: a practitioner's approach*. Palgrave Macmillan, 2005
2. W3Schools
3. Tutorials Point