OOP project1.docx

by AlYasin AHMAD

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UNIVERSITI TEKNOLOGI MALAYSIA

OBJECT ORIENTED PROGRAMMING (SECJ2154-04)

SEMESTER 2 2023/2024

GROUP PROJECT

LOCAL EVENT FINDER

AHMAD MOHAMMAD MAZEN ALYASIN (A21EC4030)

SECTION 04

Lecturer:

MADAM LIZAWATI MI YUSUF

Synopsis:

The "Local Event Finder" technology assists users in locating and monitoring local events that align with their interests. Users have the option to register as either normal or premium members. The system enables users to do event searches based on parameters such as title, date, or location, and thereafter delivers alerts on events that align with their interests. The system is capable of supporting both online and offline events, making it a flexible tool for discovering events.

Objective and Scope:

The main goal of the "Local Event Finder" method is to make it easier for people to find events in their area.

- Make it easy to look for and sort events through an easy-to-use interface.
- Let people sign up and take care of their pages.
- Let people know about events that are coming up.
- Help with different kinds of events, both online and off

Work Flow:

1. Registration of Users:
   Users can become normal or paid members when they sign up.
2. Making an event:
   You can add events and give them a title, a description, a date, and a place.
3. Event Search:
   People can use options like title, date, or place to look for events.
4. Notifications:
   Users are told about events that interest them.

Viewing Events: Users can see a lot of information about events that are happening online or off.

OO Concepts:

- **Inheritance:** Differentiates between regular and premium users, and between online and offline events.
- **Encapsulation:** Protects user and event data within their respective classes.
- **Polymorphism:** Manages different event types (online and offline) with uniform interfaces.
- **Abstraction:** Hides complex event search and notification logic behind simple interfaces.

Screens:

Main Screen: Shows choices for logging in or signing up. Users can look for events, see information about events, and change how alerts work after logging in.

Search Screen: This screen lets people look for events by title, date, or place. Finding events is easy with this screen's simple layout.

The Event Details Screen displays in-depth details about a chosen event, such as its title, description, date, place, and, for online events, a link to the event itself.

Section B: Class Diagrams

Class Diagram for Local Event Finder System

Class User:

Attributes	Description
userId	Unique identifier for the user.
name	User's name
email	User's email Address
password	User's Password
Methods	**Description**
getUserId	Retrieves the user ID.
getName	Retrieves the user's name.
getEmail	Retrieves the user's email.
checkPassword	Verifies the user's password.
updatePassword	Changes the user's password.

Class PremiumUser extends User:

Attributes	Description
premiumFeaturesEnabled	Indicates if premium features are active.
Methods	**Description**
hasPremiumFeatures	Checks if premium features are active.

Class Event:

Attributes	Description
eventId	Unique identifier for the event.
title	Event title.
description	Event description.
location	Event location.
date	Event date.
Methods	**Description**
getEventId	Retrieves the event ID.

getTitle	Retrieves the event title.
getDescription	Retrieves the event description.
getDate	Retrieves the event date.
getLocation	Retrieves the event location.

Class OnlineEvent extends Event:

Attributes	Description
link	URL for the online event.
Methods	**Description**
getLink	Retrieves the URL for the online event.

Class OfflineEvent extends Event:

Attributes	Description
venue	Venue for the offline event.
Methods	**Description**
getVenue	Retrieves the venue for the offline event.

Class EventSearcher:

Attributes	Description
events	List of events to search through.
Methods	**Description**
addEvent	Adds an event to the list.
searchByTitle	Finds events by title.
searchByDate	Finds events by date.
searchByLocation	Finds events by location.

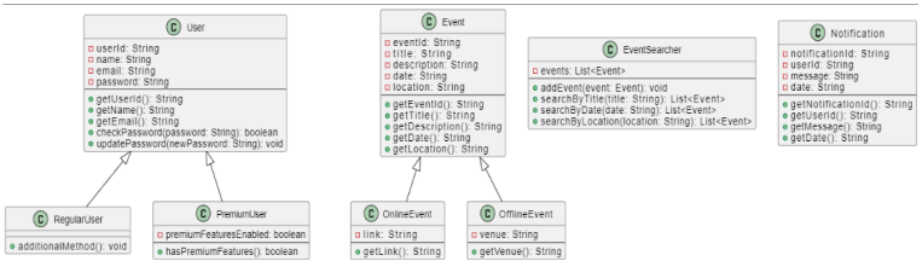
Class Notification:

Attributes	Description
notificationId	Unique identifier for the notification.
userId	ID of the user receiving the notification.
message	Notification message.
date	Date of the notification.
Methods	**Description**
getNotificationId	Retrieves the notification ID.
getUserId	Retrieves the user ID receiving the notification.
getMessage	Retrieves the notification message.

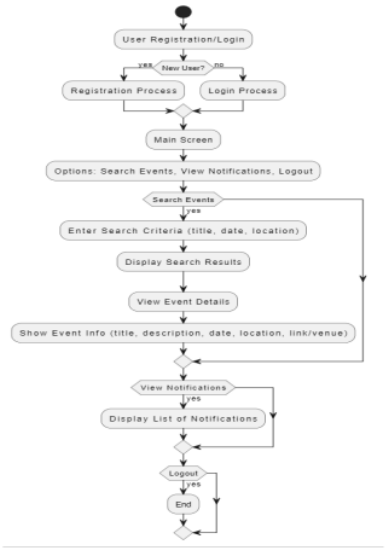
getDate	Retrieves the date of the notification.

Section C: Source Code and User Manual

UML Diagram:



Flowchart:



Main Screen: Users can sign in or join on the main screen. Users can look for events, see information about events, and change how alerts work after logging in. After the person successfully gets in, this screen shows up.

Search Screen: The search screen lets people look for events by topic, date, and place, among other things. The goal of this screen is to make it easy for users to find events that interest them.

Event Details Screen: This screen shows detailed information about an event that has been chosen. It has the event's title, summary, date, place, and, if it's an online event, a link to the event. When a person chooses an event from the search results, this screen shows up.

Source Code:

```
package user_management;

public class User {
    private String userId;
    private String name;
    private String email;
    private String password;

    public User(String userId, String name, String email, String password) {
        this.userId = userId;
        this.name = name;
        this.email = email;
        this.password = password;
    }

    public String getUserId() {
        return userId;
    }

    public String getName() {
        return name;
    }

    public String getEmail() {
        return email;
    }

    public boolean checkPassword(String password) {
        return this.password.equals(password);
    }
```

```java
public class User {
    

    public void updatePassword(String newPassword) {
        this.password = newPassword;
    }
}

// RegularUser.java
package user_management;

public class RegularUser extends User {
    public RegularUser(String userId, String name, String email, String password) {
        super(userId, name, email, password);
    }
}

// PremiumUser.java
package user_management;

public class PremiumUser extends User {
    private boolean premiumFeaturesEnabled;

    public PremiumUser(String userId, String name, String email, String password) {
        super(userId, name, email, password);
        this.premiumFeaturesEnabled = true;
    }

    public boolean hasPremiumFeatures() {
        return premiumFeaturesEnabled;
    }
}
```

```java
package event_management;

public class Event {
    private String eventId;
    private String title;
    private String description;
    private String date;
    private String location;

    public Event(String eventId, String title, String description, String date, String location) {
        this.eventId = eventId;
        this.title = title;
        this.description = description;
        this.date = date;
        this.location = location;
    }

    public String getEventId() {
        return eventId;
    }

    public String getTitle() {
        return title;
    }

    public String getDescription() {
        return description;
    }

    public String getDate() {
        return date;
```

```java
    public String getDate() {
        return date;
    }

    public String getLocation() {
        return location;
    }
}

// OnlineEvent.java
package event_management;

public class OnlineEvent extends Event {
    private String link;

    public OnlineEvent(String eventId, String title, String description, String date, String location, String link) {
        super(eventId, title, description, date, location);
        this.link = link;
    }

    public String getLink() {
        return link;
    }
}

// OfflineEvent.java
package event_management;

public class OfflineEvent extends Event {
    private String venue;
```

```java
package event_management;

public class OfflineEvent extends Event {
    private String venue;

    public OfflineEvent(String eventId, String title, String description, String date, String location, String venue) {
        super(eventId, title, description, date, location);
        this.venue = venue;
    }

    public String getVenue() {
        return venue;
    }
}

// EventSearcher.java
package search_and_filter;

import event_management.Event;
import java.util.ArrayList;
import java.util.List;

public class EventSearcher {
    private List<Event> events;

    public EventSearcher() {
        events = new ArrayList<>();
    }

    public void addEvent(Event event) {
        events.add(event);
```

```java
public class EventSearcher {

    public List<Event> searchByTitle(String title) {
        List<Event> result = new ArrayList<>();
        for (Event event : events) {
            if (event.getTitle().equalsIgnoreCase(title)) {
                result.add(event);
            }
        }
        return result;
    }

    public List<Event> searchByDate(String date) {
        List<Event> result = new ArrayList<>();
        for (Event event : events) {
            if (event.getDate().equalsIgnoreCase(date)) {
                result.add(event);
            }
        }
        return result;
    }

    public List<Event> searchByLocation(String location) {
        List<Event> result = new ArrayList<>();
        for (Event event : events) {
            if (event.getLocation().equalsIgnoreCase(location)) {
                result.add(event);
            }
        }
        return result;
    }
}
```

```java
public class Notification {
    private String notificationId;
    private String userId;
    private String message;
    private String date;

    public Notification(String notificationId, String userId, String message, String date) {
        this.notificationId = notificationId;
        this.userId = userId;
        this.message = message;
        this.date = date;
    }

    public String getNotificationId() {
        return notificationId;
    }

    public String getUserId() {
        return userId;
    }

    public String getMessage() {
        return message;
    }

    public String getDate() {
        return date;
    }
}
```

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