

# PlanZenith: Reaching Your Goals

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# 01 OBJECTIVE

# OBJECTIVE

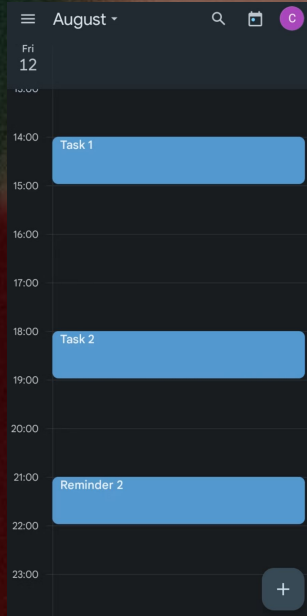
Purpose: Create a calendar software that is beneficial to many professional groups

- Students → classes, homework, exams
- Hospitals → appointments
- Tech Industries → meetings, project timelines
- Educators → lesson plans

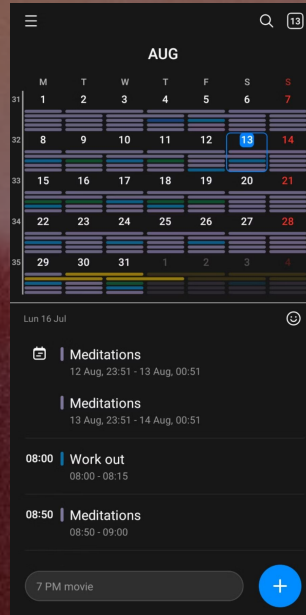




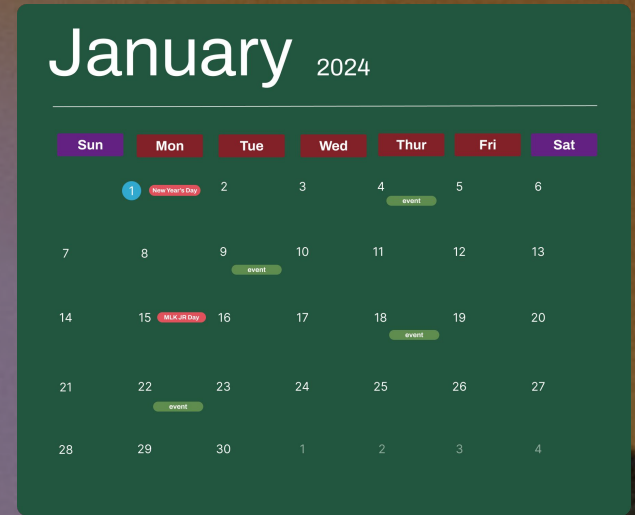
# SIMILAR WORKS - “View” comparison



Google Calendar

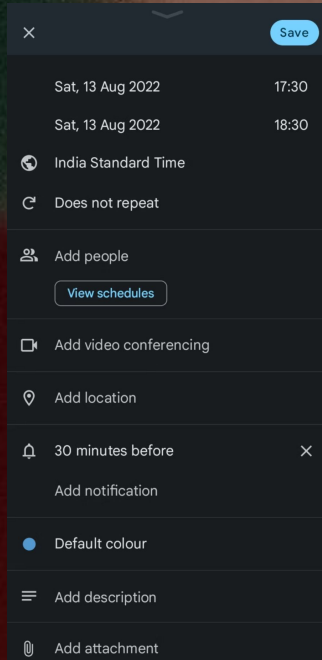


Samsung Calendar



PlanZenith

# SIMILAR WORKS - Event creation



A screenshot of the Google Calendar event creation interface. It features a dark theme with a list of options on the left and a 'Save' button at the top right. The options include setting dates and times, selecting a time zone, repeating the event, adding people, video conferencing, location, notifications, default color, description, and attachment.

×

Save

Sat, 13 Aug 2022 17:30

Sat, 13 Aug 2022 18:30

India Standard Time

Does not repeat

Add people

View schedules

Add video conferencing

Add location

30 minutes before

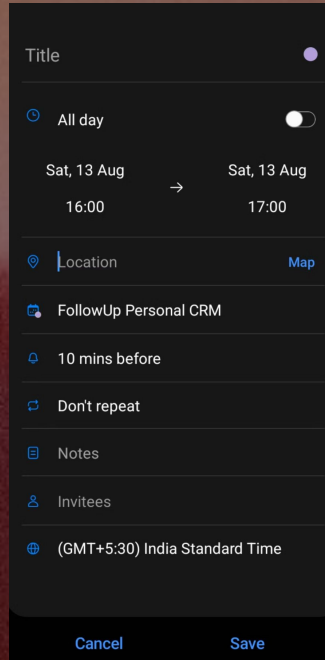
Add notification

Default colour

Add description

Add attachment

Google Calendar



A screenshot of the Samsung Calendar event creation interface. It has a dark theme with a vertical list of options and 'Cancel' and 'Save' buttons at the bottom. The options include setting a title, all-day toggle, date and time range, location, event type, recurrence, notes, invitees, and time zone.

Title

All day

Sat, 13 Aug 16:00 → Sat, 13 Aug 17:00

Location

FollowUp Personal CRM

10 mins before

Don't repeat

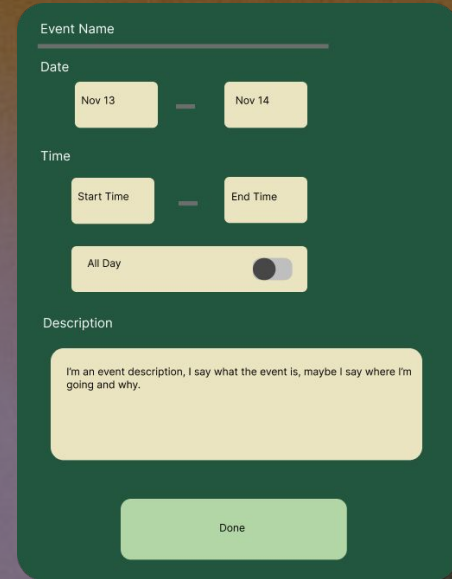
Notes

Invitees

(GMT+5:30) India Standard Time

Cancel Save

Samsung Calendar



A screenshot of the PlanZenith event creation interface. It has a dark green theme with a vertical list of options and a 'Done' button at the bottom. The options include event name, date range, time range, all-day toggle, and a description field.

Event Name

Date

Nov 13 — Nov 14

Time

Start Time — End Time

All Day

Description

I'm an event description, I say what the event is, maybe I say where I'm going and why.

Done

PlanZenith

# 02 COST & ESTIMATION



# FUNCTION POINT TABLE

\*Assumes 7 member team with 60 productivity points per person-week

Functional Category	Count	Complexity			Count * Complexity
		Simple	Average	Complex	
User Input	10	3	4	6	30
User Output	6	4	5	7	24
User Queries	7	3	4	6	21
Data Files & Relational Tables	11	7	10	15	77
External Interfaces	2	5	7	10	10
				<b>GFP</b>	<b>162</b>



# FUNCTION POINT CALCULATIONS

Determining Processing  
Complexity: Ratings 1-14 (PC)

1.	5
2.	3
3.	3
4.	4
5.	2
6.	4
7.	2
8.	3
9.	2
10.	2
11.	4
12.	2
13.	2
14.	5

$PCA = .65 + .01(\sum PCx) = 1.08 \rightarrow$  adds each ranking together

Function Point =  $GFP * PCA = 162 * 1.08 = 174.96$

Effort =  $FP / (60 \text{ productivity points per week}) = 2.916$   
person-week  $\rightarrow$  Rounds to 3 person weeks

Duration =  $(\# \text{ of person-weeks}) / (\# \text{ of team members}) = 3/7$   
 $\rightarrow$  rounds to 1 week

## WHY FUNCTION POINT?

- PlanZenith is being built from the ground up
- Application Composition works better for applications built on top of other software

# COST ESTIMATION

## HARDWARE

Data based servers; incurs high database costs (\$150/m)  
Content delivery networks, load balances (\$50/m)  
Security licensing (\$100/m)

**\$300/Month**

## SOFTWARE

Deploying on Google Cloud SQL (\$0.204 per GB/month) in addition to \$300 in free credits  
Cost dependent on usage

**\$0.204 per GB / month**

## PERSONNEL

Training: \$4,000 total for 2 developers for 1 week @ \$50/hour  
Maintenance: \$2,000 per month, assuming about 10 hours of maintenance a month split between 2 team members @ \$50/hour

**\$4000 + \$2000/Month**



# PROJECT TIMELINE

Based on the function point technique:

- Start Date: Monday, January 8th 2024
- End Date: Monday January 15th 2024
- Approximately 1 week
- Not counting weekends
- 6 hours per person per day
- 7 members

Further scheduling details → Gantt chart

- Breakdown of steps
- Duration for each step
- Predecessor
- Assigned contributor(s)





# 03 REQUIREMENTS



# FUNCTIONAL REQUIREMENTS

## VIEWS

The calendar software should display to the user a Monthly, Weekly, Daily, and Agenda view with the appropriate information

## USER

A user should be uniquely identified by a user ID where events are associated with the user's profile

## EVENTS

A user should be able to add events with timings and event information, delete these events, and make recurring events

## TIME CONFLICTS

The software should check for time conflicts when users have incompatible events and provide an error notification if needed

## REMINDERS

A user should be able to set events alerts for scheduled events and can specify the timing and type of alert

## BLOCKS

A user should have the ability to define time intervals during which scheduling of events is restricted (blocked)

# NON-FUNCTIONAL REQUIREMENTS

## USABILITY

Organized simplistically so the user can navigate to different features without multiple steps

## SPACE

Will take up approx 230MB. Google Calendar takes up about 215MB, we increased to add more functionalities

## DEPENDABILITY

Alert user of an event beforehand, and must not fail to update the calendar with changes made

## DEVELOPMENT

Developed in an efficient way, with validation testing at each step for every feature to ensure no bugs

## PERFORMANCE

System will take 1-2 sec to respond with strong internet and <10 sec with weak internet; automatically sync every 10-15 min.

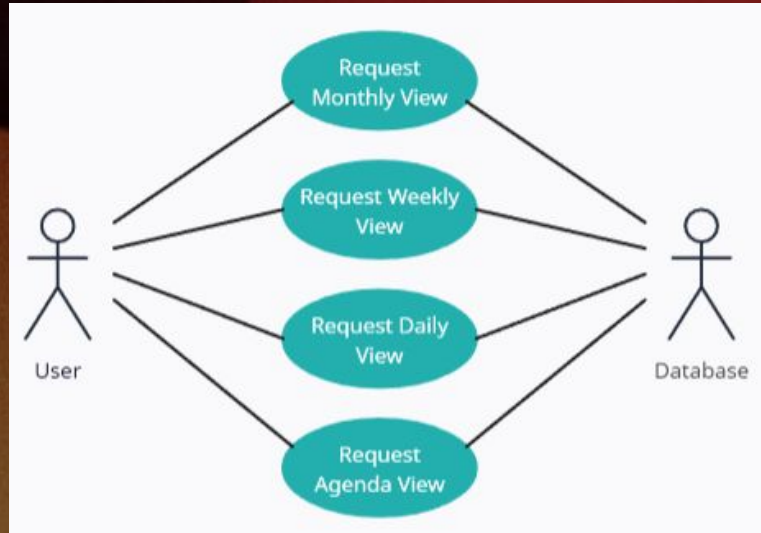
## LEGISLATIVE

Operate within software development laws (US Safe Web Act), protects user's confidential information



# 04 DIAGRAMS

# USE CASE DIAGRAM - VIEW OPERATIONS



## Views: Request Monthly View

Actors	User, Database
Description	This view shows all the days in the month, with a snippet of the events scheduled for each day.
Data	Events on each day of the month.
Stimulus	Monthly view selected by User.
Response	Monthly view displayed on screen.
Comments	

## Views: Request Weekly View

Actors	User, Database
Description	This view shows all the days in the week, with a snippet of the events scheduled for each day.
Data	Events on each day of the week.
Stimulus	Weekly view selected by User.
Response	Weekly view displayed on screen.
Comments	

## Views: Request Daily View

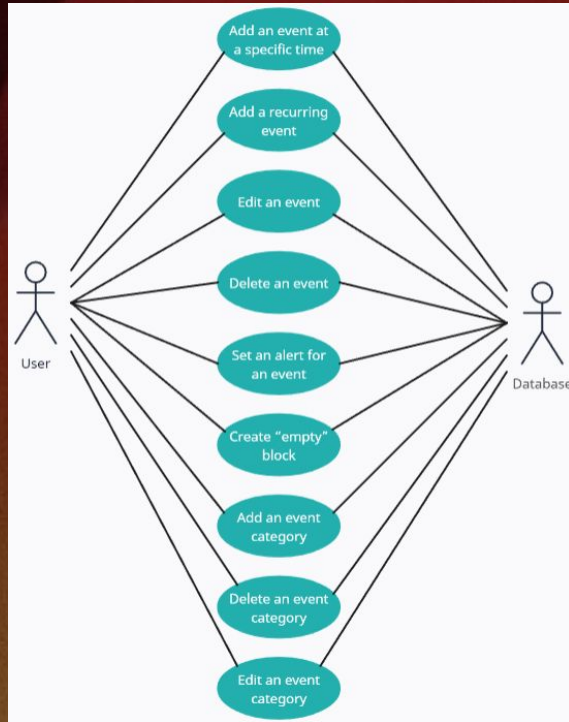
Actors	User, Database
Description	This view shows all the events scheduled in a day, sorted by starting time.
Data	Events on the day, their starting times.
Stimulus	Daily view selected by User.
Response	Daily view displayed on screen.
Comments	

## Views: Request Agenda View

Actors	User, Database
Description	This view shows all future events, sorted in chronological order.
Data	All future events, their starting dates and times.
Stimulus	Agenda view selected by User.
Response	Agenda view displayed on screen.
Comments	



# USE CASE DIAGRAM - EVENT OPERATIONS



## Events: Add event at specific time

Actors	User, Database
Description	Adds an event to the user's calendar with a start and end time.
Data	Information about the event (including start time and end time), list of events on the same day and their start and end times.
Stimulus	User issues command.
Response	Confirmation that the event was added or an error message.
Comments	Function checks if there are any time conflicts with the new event and returns an error message if so, otherwise operation succeeds.

## Events: Add recurring event

Actors	User, Database
Description	Adds an event to the user's calendar that occurs multiple times.
Data	Information about the event (including start time and end time), list of events on the same day(s) and their start and end times, when/how often the event recurs.
Stimulus	User issues command.
Response	Confirmation that the event was added or an error message.
Comments	Function checks if there are any time conflicts with the new event and returns an error message if so, otherwise operation succeeds.

## Events: Edit an event

Actors	User, Database
Description	Changes information about an existing event in the user's calendar.
Data	Event to be edited, field(s) to be edited, new values for those fields.
Stimulus	User issues command.
Response	Confirmation that the edits were made or an error message.
Comments	If the user changed the start or end time of the event, a function checks for conflicts and responds appropriately.

# USE CASE DIAGRAM - EVENT OPERATIONS

Events: Delete an event	
Actors	User, Database
Description	Removes an event from the user's calendar.
Data	The event to be removed.
Stimulus	User issues command.
Response	Confirmation that the event was deleted.
Comments	

Events: Set an alert for an event	
Actors	User, Database
Description	Sets an alert that will notify the user about an event at the specified time.
Data	Event to notify about, timing and type of alert.
Stimulus	User issues command.
Response	Confirmation that the alert has been set.
Comments	

Events: Create "empty" block	
Actors	User, Database
Description	Adds a block to the user's calendar where nothing can be scheduled.
Data	Start time, end time.
Stimulus	User issues command.
Response	Confirmation that the block was added or an error message.
Comments	Function checks if there are already events scheduled in time period and returns an error message if so, otherwise operation succeeds.

Events: Add an event category	
Actors	User, Database
Description	Add a category into which events may be sorted.
Data	Name, color, events to include.
Stimulus	User issues command.
Response	Confirmation that the category was created.
Comments	

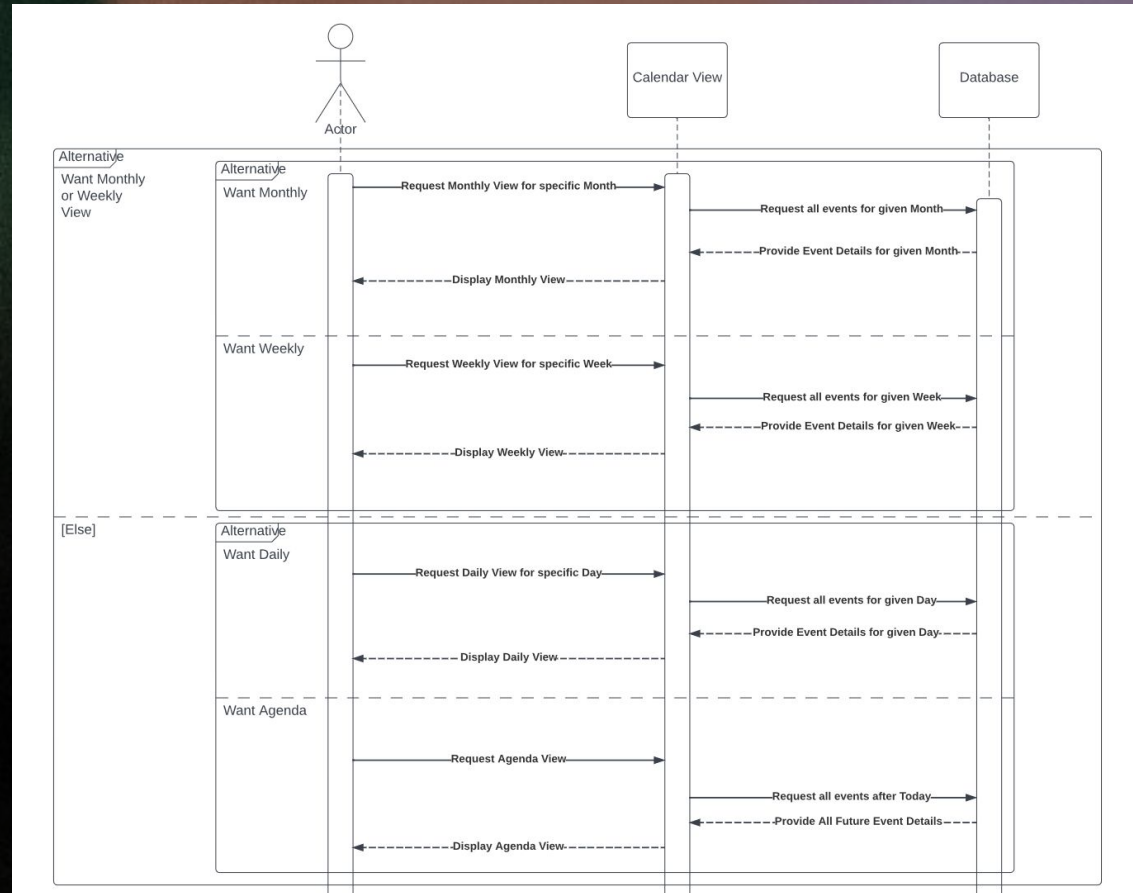
Events: Delete an event category	
Actors	User, Database
Description	Removes a category and sets the events it contained to have no category.
Data	Category to remove.
Stimulus	User issues command.
Response	Confirmation that the category was deleted.
Comments	

Events: Edit an event category	
Actors	User, Database
Description	Changes information regarding a category. Used for changing name, color, or adding/removing events from the category.
Data	Category to change, field(s) to change, new values for those fields.
Stimulus	User issues command.
Response	Confirmation that the edit was made.
Comments	



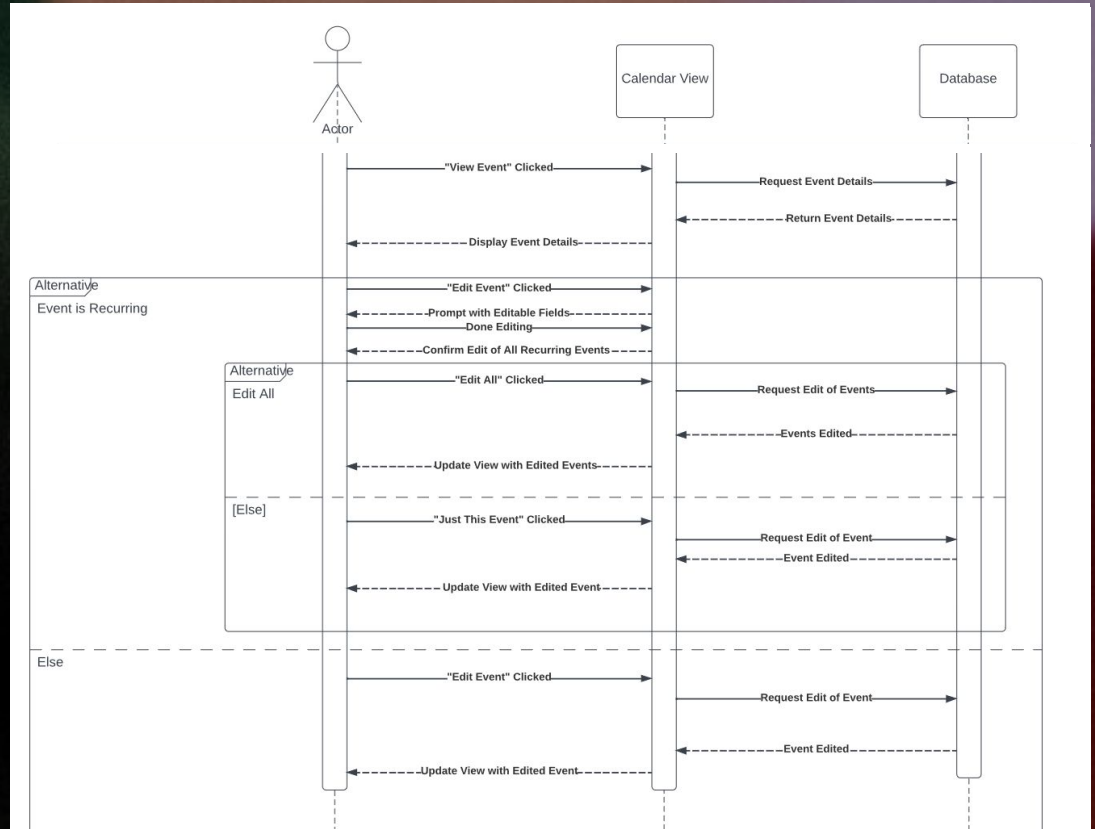
# SEQUENCE DIAGRAMS

## Calendar Views



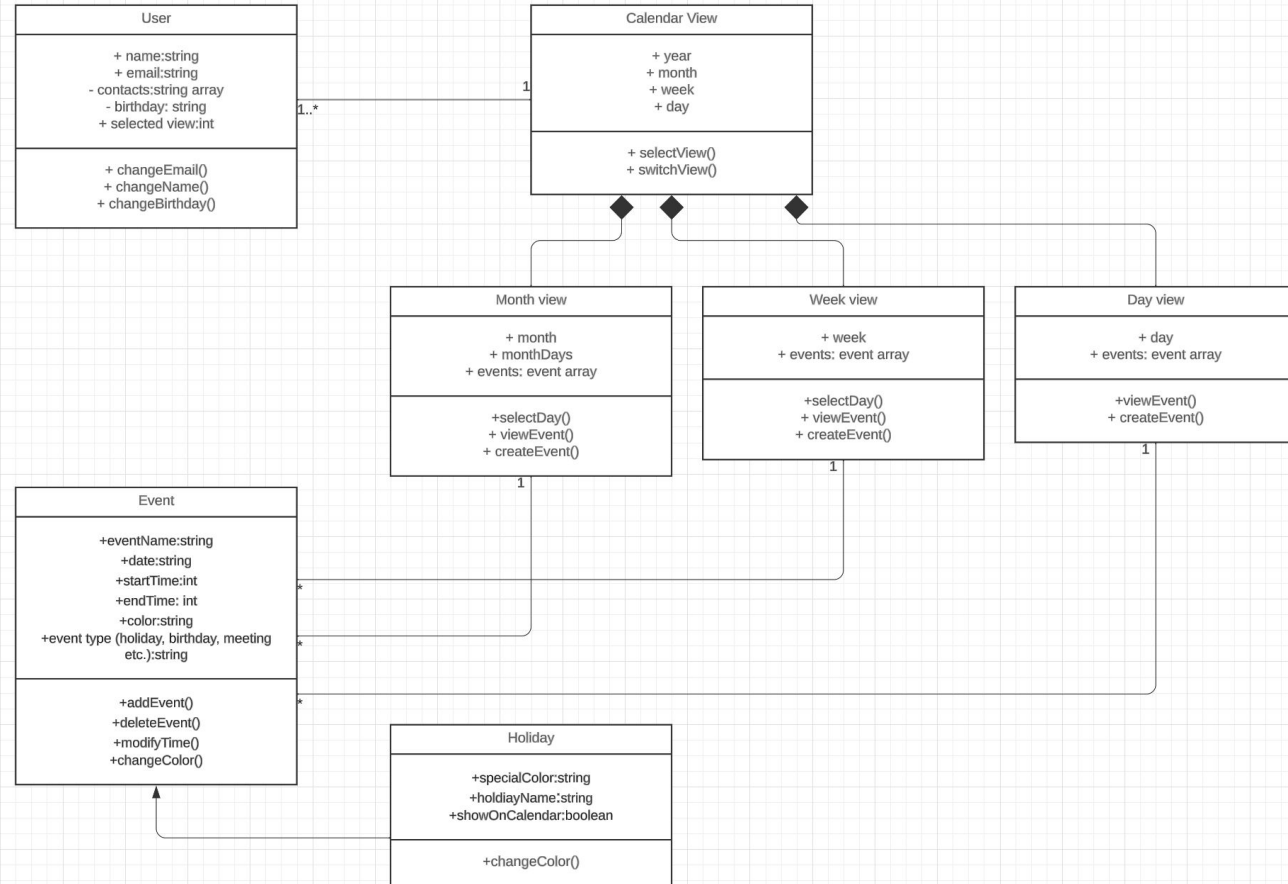
# SEQUENCE DIAGRAMS

## Edit Event





# CLASS DIAGRAM



The background features a soft, out-of-focus bokeh effect with warm tones of orange, yellow, and brown. A large, dark red semi-circle is positioned in the lower-left quadrant, partially overlapping the text.

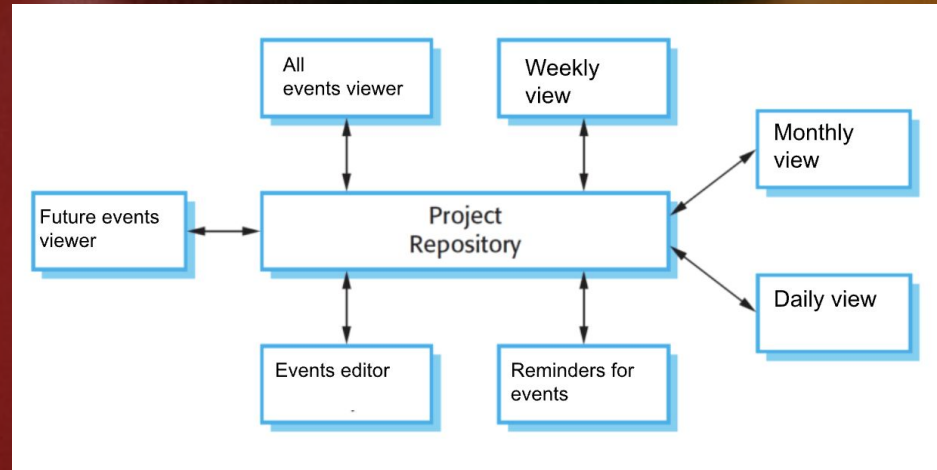
05

ARCHITECTURAL  
DESIGN



# ARCHITECTURAL DESIGN

- Repository style architecture
- Planner has multiple views: calendar, monthly, daily
- Users can add, delete, or swap events
- All features are centered around data
  - Layer of abstraction between application and data stores simplifies data retrieval
- Can change database type more easily



# 06 UI DEMO



# MONTHLY VIEW

# January 2024

Sun	Mon	Tue	Wed	Thur	Fri	Sat
	1 New Year's Day	2	3	4 event	5	6
7	8	9 event	10	11	12	13
14	15 MLK Jr Day	16	17	18 event	19	20
21	22 event	23	24	25	26	27
28	29	30	1	2	3	4

Today is  
MONDAY, JANUARY

15  
2024

All Day:

MLK Jr. Day

Sun  
Jan. 14

12 AM

1 AM

2 AM

3 AM

4 AM

5 AM

6 AM

7 AM

Mon  
Jan. 15

MLK Jr. Day

12 AM

1 AM

2 AM

3 AM

4 AM

5 AM

6 AM

Tue  
Jan. 16

12 AM

1 AM

2 AM

3 AM

4 AM

5 AM

6 AM

7 AM

Wed  
Jan. 17

12 AM

1 AM

2 AM

3 AM

4 AM

5 AM

6 AM

7 AM

Thu  
Jan. 18

12 AM

1 AM

2 AM

3 AM

4 AM

5 AM

6 AM

7 AM

Fri  
Jan. 19

12 AM

1 AM

2 AM

3 AM

4 AM

5 AM

6 AM

7 AM

Sat  
Jan. 20

12 AM

1 AM

2 AM

3 AM

4 AM

5 AM

6 AM

7 AM



WEEKLY VIEW



Section 1

MONDAY, JANUARY

01  
2024

*All Day:*

Happy New Year!

Jane's Birthday

Pay Bills

Section 2

TODAY

12 AM

1 AM

2 AM

3 AM

4 AM

5 AM

6 AM

7 AM



# Agenda

Basketball Game

Tomorrow

More Info >

Jeff's Birthday Party

In 3 Days

More Info >

Class Presentation

In 6 Days

More Info >

Biology Final Exam

In 2 Weeks

More Info >

Family Trip

In 1 Month

More Info >

↓ Show More ↓

# DAILY AND AGENDA VIEW

Event Name

---

Date

Nov 13 — Nov 14

Time

Start Time — End Time

All Day ☒

Description

I'm an event description, I say what the event is, maybe I say where I'm going and why.

Done

The time entered for "New Event" conflicts with "Birthday Party"!

Edit "New Event"

Ignore

# ADD EVENTS, CHECK TIME CONFLICTS



Editable Title

---

All Day ☒

Starts

Ends

Repeat

I'm an event description, I say what the event is, maybe I say where I'm going and why.

Add/Edit Tasks

Done

Would you like to **delete** THIS event  
or ALL RECURRING events?

Only This Event All Recurring

CANCEL

ADD RECURRING EVENT, DELETE EVENT

Would you like to edit THIS event or  
ALL RECURRING events?

Only This Event

All Recurring

CANCEL

Editable Title

Nov 13

Nov 14

All Day



I'm an event description, I say what  
the event is, maybe I say where I'm  
going and why.

Add/Edit Tasks

Done

Editable Title

All Day



I'm an event description, I say what  
the event is, maybe I say where I'm  
going and why.

Add/Edit Tasks

Done

EDIT EVENT



### Dentist Appointment

Today, 2pm - 3pm



Address: 2800 Waterview Rd, 75080 Richardson, TX

Getting a cavity filled!

### John's Birthday

Tomorrow, Jan 25th



John from Calculus Class

# EVENT ALERT

### Adding Event Category

Category Name

Birthdays

Done

## ADD/DELETE EVENT CATEGORIES

### Removing Event Category

- ☐ Birthdays
- ☒ Doctor's Appointments
- ☐ SE Assignments
- ☐ Graduation Parties
- ☐ Weddings
- ☐ Funerals
- ☐ Vacations
- ☐ Job Application Deadlines

Remove

Cancel



### CHOOSE A COLOR



### CHOOSE A CATEGORY

- ☐ Birthdays
- ☐ Doctor's Appointments
- ☐ ACM Events
- ☐ SWE Events
- ☐ HCI Assignments
- ☒ SE Assignments
- ☐ Job Application Deadlines
- ☐ Add new category

### Select an Event to Mark as Complete

- ☐ Andrew's Bar Mitzvah
- ☐ Sean's Court Appearance
- ☐ SE Final Project Due
- ☐ Astros Game
- ☐ Ryan's Wedding
- ☐ Microsoft Interview
- ☒ Meet with Project Group
- ☐ Board Meeting

Done

Cancel

# COLOR MARKING, TASK COMPLETION

### Colors For Holidays/Weekends (etc.)



*Saturdays (background color)*



*Sundays (background color)*



*New Year's Eve*



*New Year's Day*



*Christmas*



*Halloween*



*Thanksgiving*

*See weekly view to visualize coloring*

# HOLIDAY/WEEKENDS



### Select an Event to Mark as Complete

- ☐ Andrew's Bar Mitzvah
- ☐ Sean's Court Appearance
- ☐ SE Final Project Due
- ☐ Astros Game
- ☐ Ryan's Wedding
- ☐ Microsoft Interview
- ☒ Meet with Project Group
- ☐ Board Meeting

Done

Cancel

### Select an Event to Mark as Complete

☒ Meet with Project Group

Nov 13 — Nov 14

I'm an event description, I say what the event is, maybe I say where I'm going and why.

Add/Edit Tasks

Done

Cancel

### Select an Event to Mark as Complete

- ☐ Astros Game
- ☐ Ryan's Wedding
- ☐ Microsoft Interview
- ☒ Meet with Project Group
- ☐ Board Meeting
- ☐ Meeting with Anna Wintour
- ☐ PhD Thesis Defense
- ☐ Trip to South Florida
- ☐ Wedding Dress Shopping

Done

Cancel

# ZOOM & SCROLL

## Creating a Schedule Block

Start:

00:00

AM

Start Date:

May 1, 2024

End:

11:59

PM

End Date:

May 4, 2024

Notes...

Create  
Block

CREATE BLOCKS FOR UNAVAILABILITY



07

CONCLUSION



# CONCLUSION & FUTURE WORK

## Conclusion:

- PlanZenith stands as a quality calendar application, distinguished by its extensive array of features.
- Changes
  - MVC → Repository (Software Architecture Pattern)
  - Differentiating PlanZenith from competitors

## Future Work

- Utilizing machine learning for insights
- Collaborative features such as sharing calendars
- More fields for users when creating events such as location, attachments, etc.

# THANK YOU!

Questions?

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