



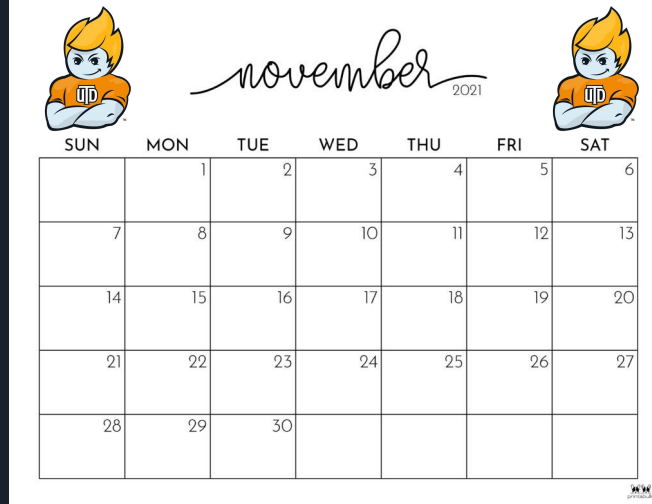
Team 4: Comet Calendar

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Objective of Project

The objective of this project is to make a design for a calendar application. We will do that by creating the functional requirements (functional and non-functional). Create the use case diagrams and a sequence diagram for each use case. At the same time, create the architectural design and the class diagram. Then we will estimate the cost and timeline of designed project. Lastly, having a method of testing for the project as well.





Cost Estimation

Factors to Consider:

- Cost of hardware products
- Cost of software products
- Cost of personnel



Cost Estimation

- Cost of Hardware:
 - A business server is required, and most business servers will generally need \$1000 to \$2500 per server for enterprise-grade hardware.
 - CPU, hard drives, RAM, chassis, motherboard, processor power supply
 - Server maintenance and replacement, electricity and cooling costs, as well as hardware support.



Cost Estimation

- Cost of Software:
 - Cost to build a calendar app source code on average costs about \$27,500 but can go even higher, as high as \$30,000 as the price fluctuates depending on features
 - Apple Developer license costs \$99 per year and must be renewed annually in order for the app to remain in the store.
 - For Android, the price is \$25, but this is a once off payment and does not need to be renewed.
 - firewalls or software to prevent malicious attacks which can cost \$500 – \$2,000 per month for a medium-sized network



Cost Estimation

- Cost of Personnel:
 - design team ranges from \$150 to \$250 per hour per specialist
 - 5-7 developers working on it to ensure a user-friendly application:
 - back-end developer
 - front-end developer
 - UI designer
 - Quality Analyst specialist
 - project manager
- We have 7 specialists and a 370 hour project, each specialist would cost about \$55,000-\$95,000
- DevOps is also needed in order to manage the system during business hours after the app is up and functional, which considering if they are paid at a rate of \$50/hour that'll be \$6,000/week.



Project Timeline

- Start Date: January 10, 2022
- End Date: May 13, 2022

- Amount of time to build the app = **370 hours**
- Working 20 hours/week
- Excluding weekends



Functional Requirements

- A user shall be able to view the monthly, weekly, daily, and overall agenda view along with the snippet for each day.
- A user shall be able to add, edit, and delete events to the calendar.
- The system shall send an event alert at the time of the event.
- The system shall check for time conflicts when adding events.
- A user shall be able to share the event to other calendar users through the internet.
- The system shall color code holidays and weekends.
- The system shall support zooming in/out and scrolling through the calendar.



Nonfunctional Requirements

- Product Requirements

- Efficiency

- The system shall be able to handle 1000 events per year without it affecting its performance.

- Performance

- The system shall take 1.5 seconds to load the entire calendar with events.

- Space

- The software should not exceed more than 1GB of storage as a whole.

- Dependability

- The system shall not exceed 5 seconds of downtime during the day.

- Security

- The system shall not share any information provided by the user, including personal information and calendar information without permission.

- Usability

- The system should be easy to use by everyone and should be organized in a way that user errors are minimized

- Organizational Requirements

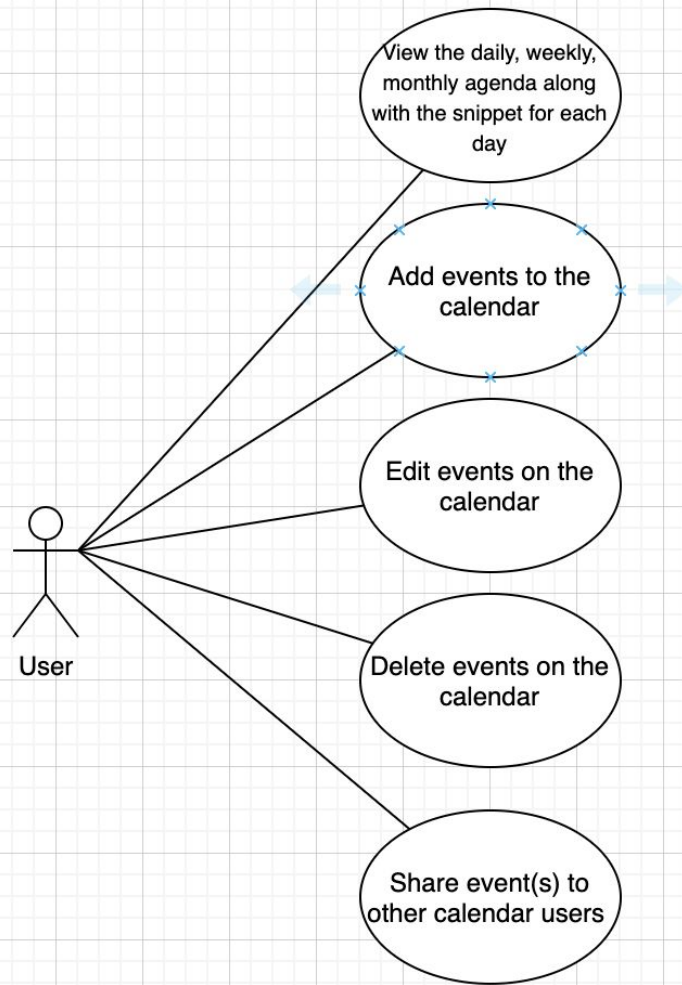
- Environmental

- The system shall be able to run on operating environments of Windows, Mac OS, Android, and iOS.

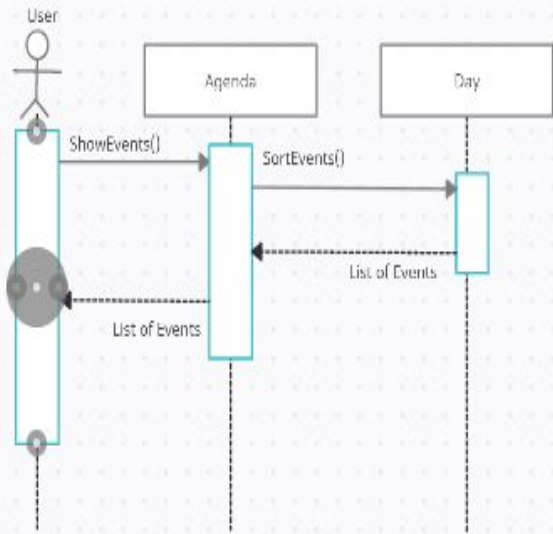


Nonfunctional Requirements

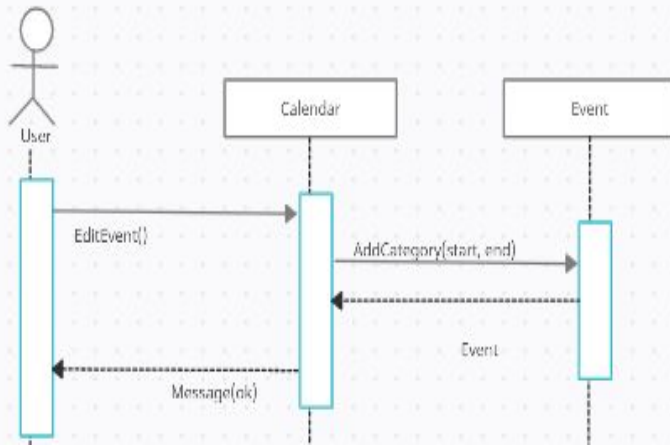
- Operational
 - The system shall be used to view the days of the year and organize events throughout the year according to the user.
- Development
 - The software shall be created using Java programming language.
- External Requirements
 - Regulatory
 - The system shall be approved by Apple and Android and follow their privacy policies before publication.
 - Ethical
 - The system shall keep all information confidential and will only share information with permission.
- Legislative
 - The system shall implement user privacy laws as set in The Federal Trade Commission Act (FTC)[1914].
- Accounting
 - The system shall be created within the funds given to create the software.
- Safety/security
 - The system shall keep all user data safe and protected through various means of data protection.

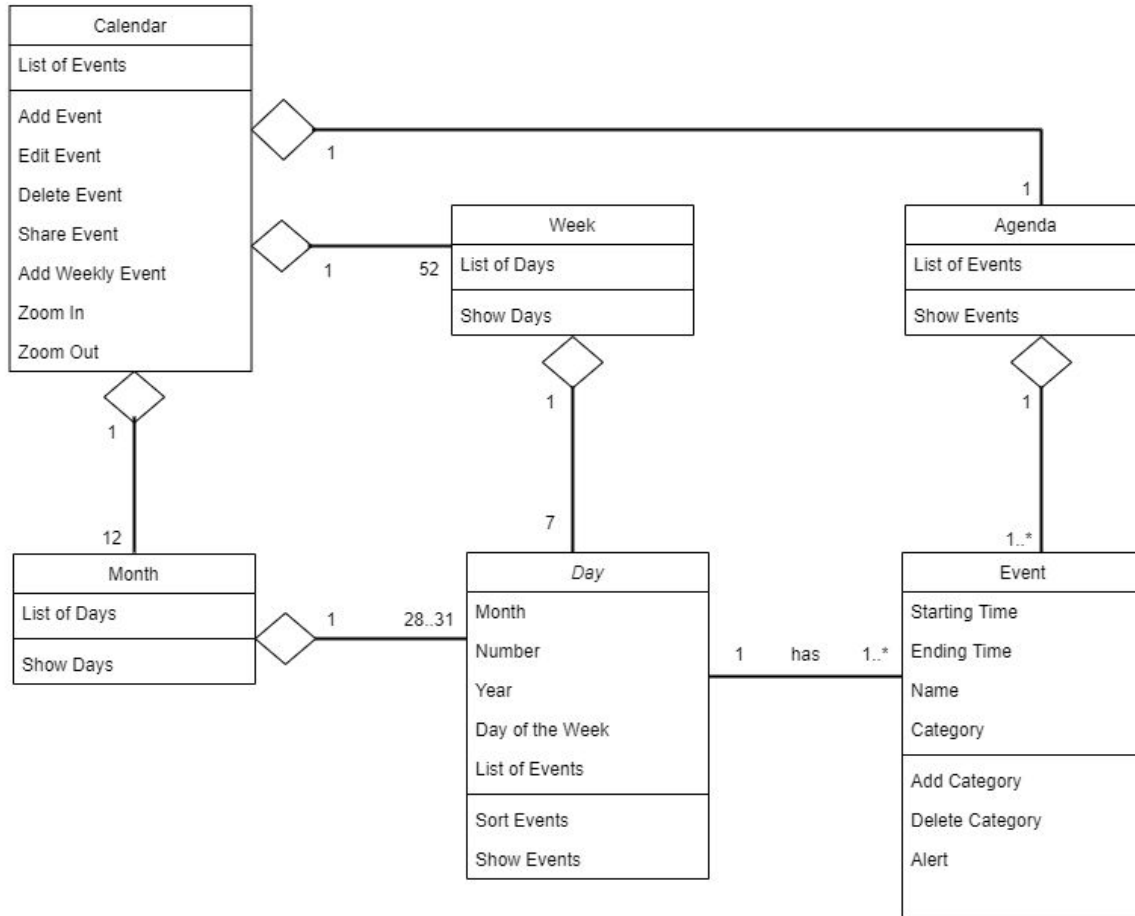


Use Case Diagram



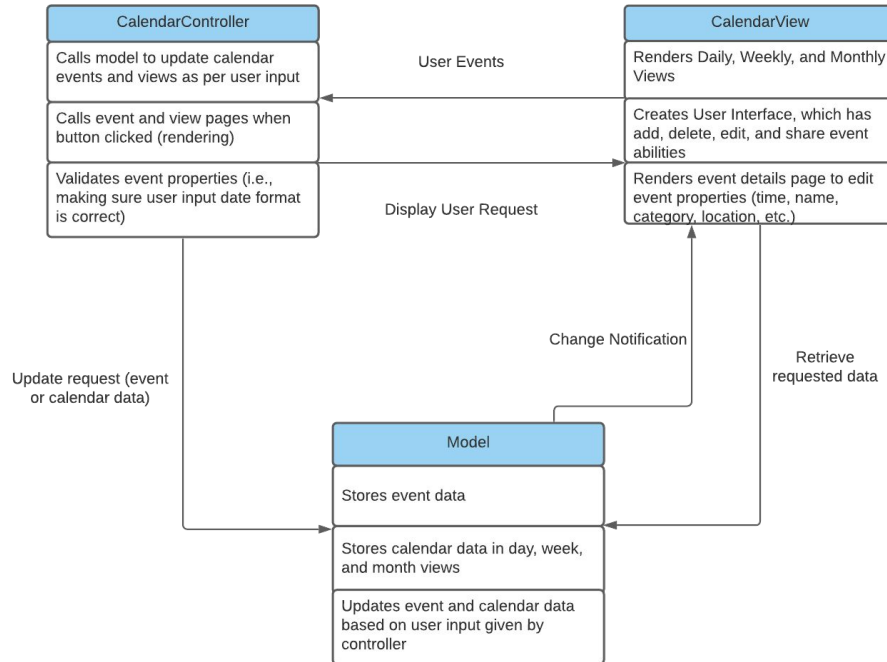
Sequence Diagram





Class Diagram

Architectural Design





Conclusion

- Project flow: Baseline for our project is dependent on the non-functional/functional requirements
- Purpose: Our purpose is to create a simple yet high-functioning calendar for attending students at UTD to help prioritize and maximize complex schedules, TO-DO lists, and basic agendas throughout the week/month.
- Changes made throughout project: The number of entries for input/output users; our results of these categorizes our product as an average complexity.
- Evaluation: J-unit test was made and provided testing for important aspects of our calendar, which results were successful. As far as calculations go, we chose the Function Point Algorithm for estimated costs of hardware and software products, as well as personnel. The total Gross Function Point is **251 FP**.



References

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Thank you!

