



Cal State LA

x

SAYA.life

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Liaisons: Sanjay Poojary

GROUP MEMBERS

PROJECT LEAD

Christopher Case

ANALYTICS

Bryant Garcia

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DEVELOPMENT

Arthur Keshishyan

Esteban Alvarado

Marian Gomez

Alvin Hong

DATABASE

Han Llinwu

AGENDA

- Introduction & Overview
- Requirements
- Project Planning
- Project Demo
- Project Timeline
- Next Steps
- Questions



CONSEQUENCES OF WATER MISUSE

04



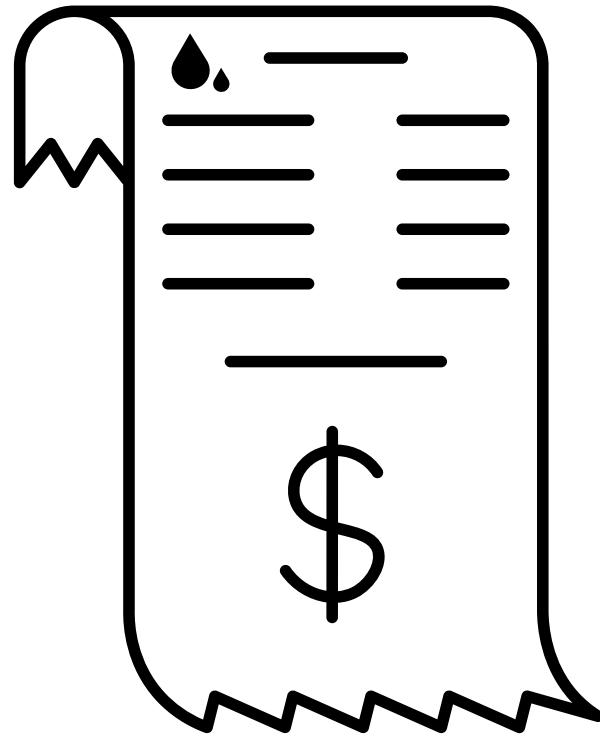
20-50% of total water use in North America lost to leaks



"Cost containment is going to become an important issue for the sector in the coming years as climate change worsens drought and water scarcity"
David Mitchell, economist (specializing in water usage)

POTENTIAL SOLUTIONS

05



Juggling Bills



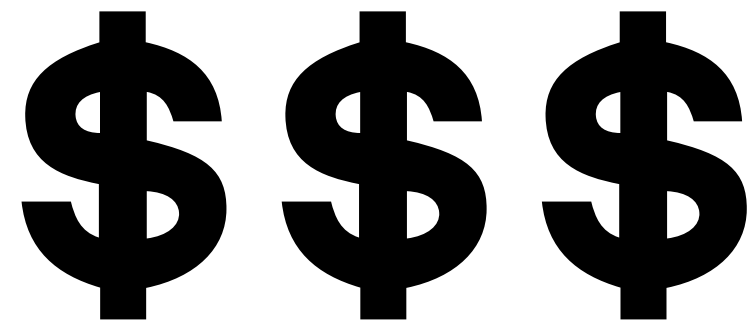
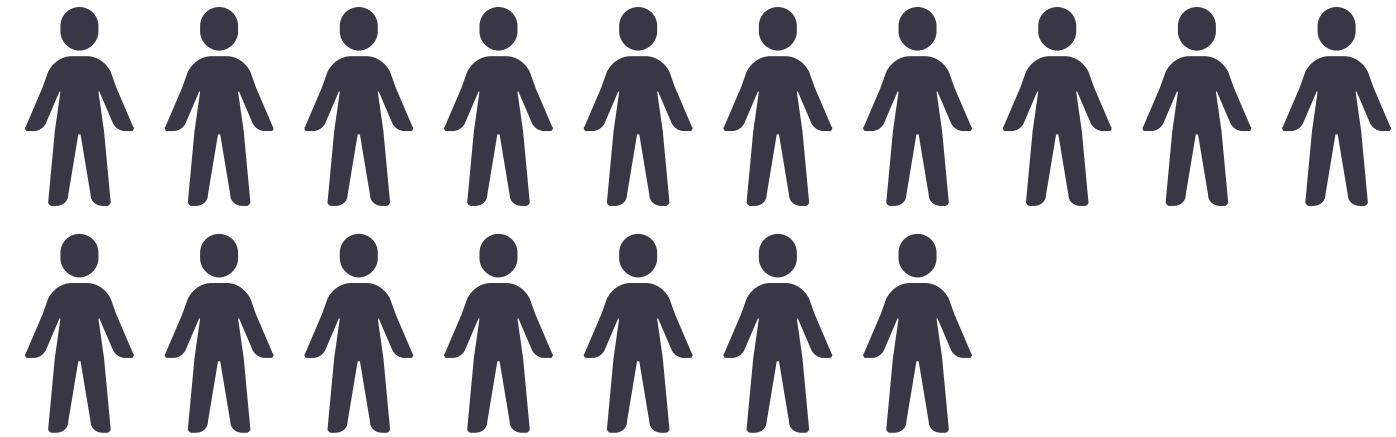
Skipping the necessities

INTRODUCTION TO SAYA.LIFE

- IoT Water Monitoring System
- Big Data Analysis and Machine Learning Technology (ML/AI)
- Advanced Sensors



**Approx. 17
Employees**



**\$450k Annual
Revenue**

WHO IS SAYA.LIFE FOR?

Multi-Tenant Property Managers

- Easier to Manage Water Use
- Mitigate Water-Damage Risk
- Better relationship with tenants

Tenants

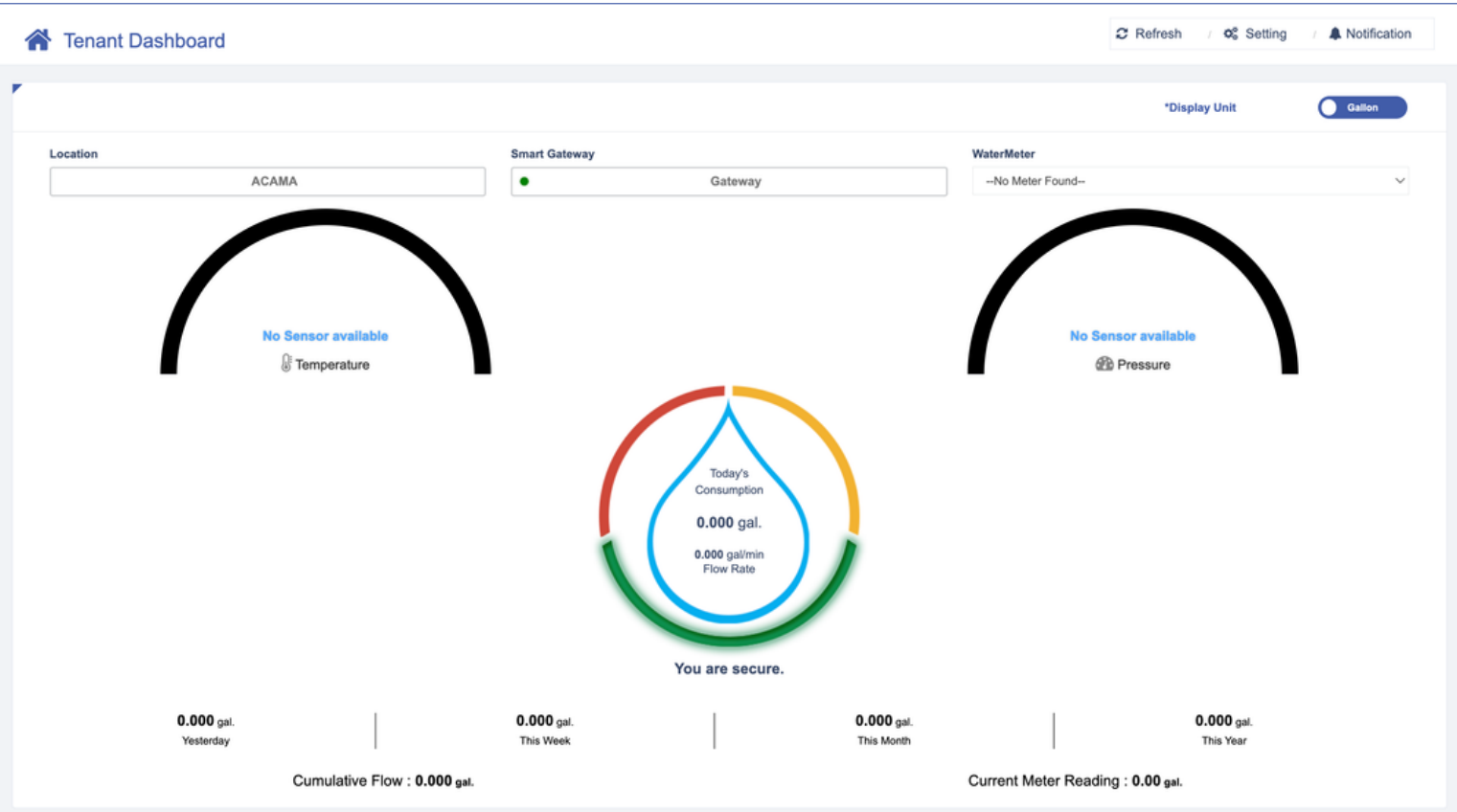
- Easier to monitor water usage on granular level
- Forecast future water usage

Environmental Activists

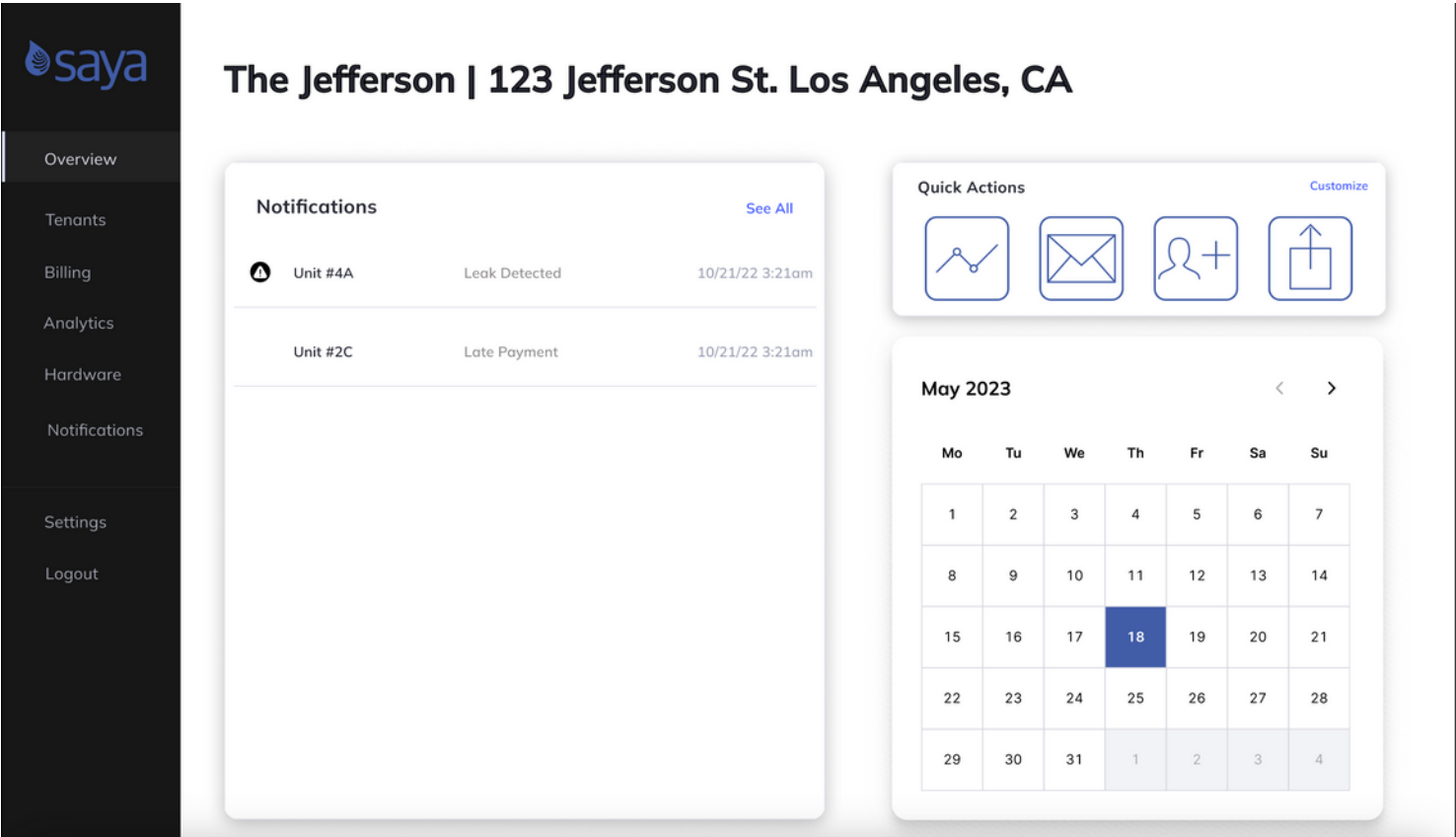
- Conserve Water
- Personal Statistics on water conservation

WHERE DO WE FIT IN?

BEFORE



AFTER



REQUIREMENTS

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BASE ITEMS

- Modularity
- Users should locate information easily
- Full customization for users
- Ability to pay their bills through this web application
- Improve current analytics



Sanjay Poojary
Founder & CEO

FIRST THINGS FIRST

- Whom would we be designing this web page for?
- What should this web application look like?
- How would we accomplish the goal of modularity?
- What would we use to show analytics?

And about 100 other questions.....

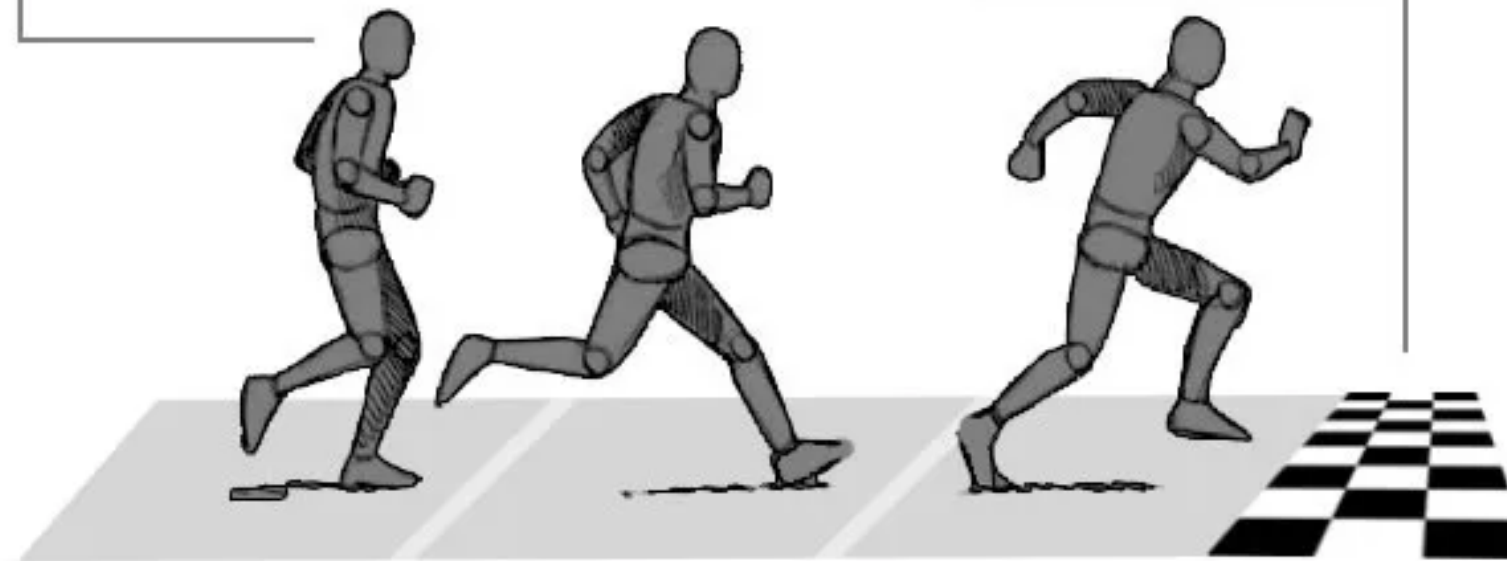
BRAINSTORMING USERS

1. Persona

Defines who the story is about. This main character has attitudes, motivations, goals, and pain points, etc.

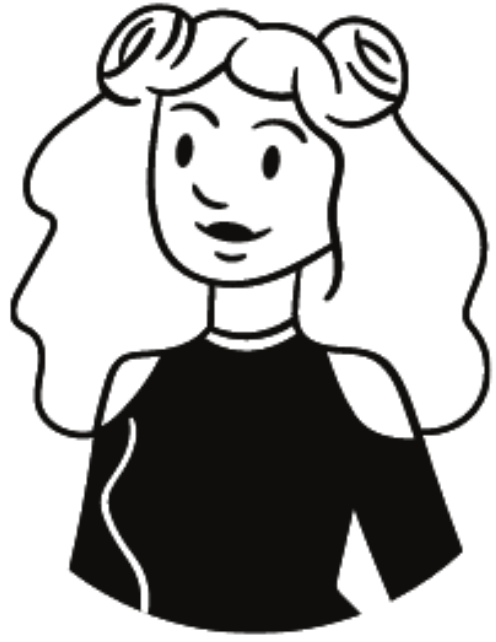
3. Goal

Defines what the persona wants or needs to fulfill. The goal is the motivation of why the persona is taking action. When that goal is reached, the scenario ends.



2. Scenario

Defines when, where, and how the story of the persona takes place. The scenario is the narrative that describes how the persona behaves as a sequence of events.



Alexis 'AJ' Brooks

Gender: Nonbinary

Age: 21

Job: Barista

Location: Los Angeles, CA

Family: Single

Living: Rooming, with 3 people

“

I say I am a broke college student, but with the cost of our water usage, maybe I am. I am very much not at home but yet I have to pay the same as everyone else. This app will let me bring up to my roommates about what is and isn't fair...

”

ABOUT

AJ is a Full-Time College Student who also has a Part-Time job at a Cafe. AJ and their roommates all pay the same amount for their water utilities.

Internet

★★★★★

Desktop Apps

★★★★★

Electronic Devices

★★★★★

GOALS

- Save their money by reducing how much they pay for the water bill
- Learn Water Saving Habits



Marques Lopez

Gender: Male

Age: 59

Job: Apartment Owner

Location: Los Angeles, CA

Family: Single

Living: 2 BR Apartment

“

I don't know my way around the computer, but it looks like this app is good. I've had a hard time figuring out how much water is used on a day-to-day basis by my tenants.

”

ABOUT

Marques is from the generation before smart devices became the norm. He usually gets his niece to help him surf the web.

Internet



Desktop Apps



Electronic Devices



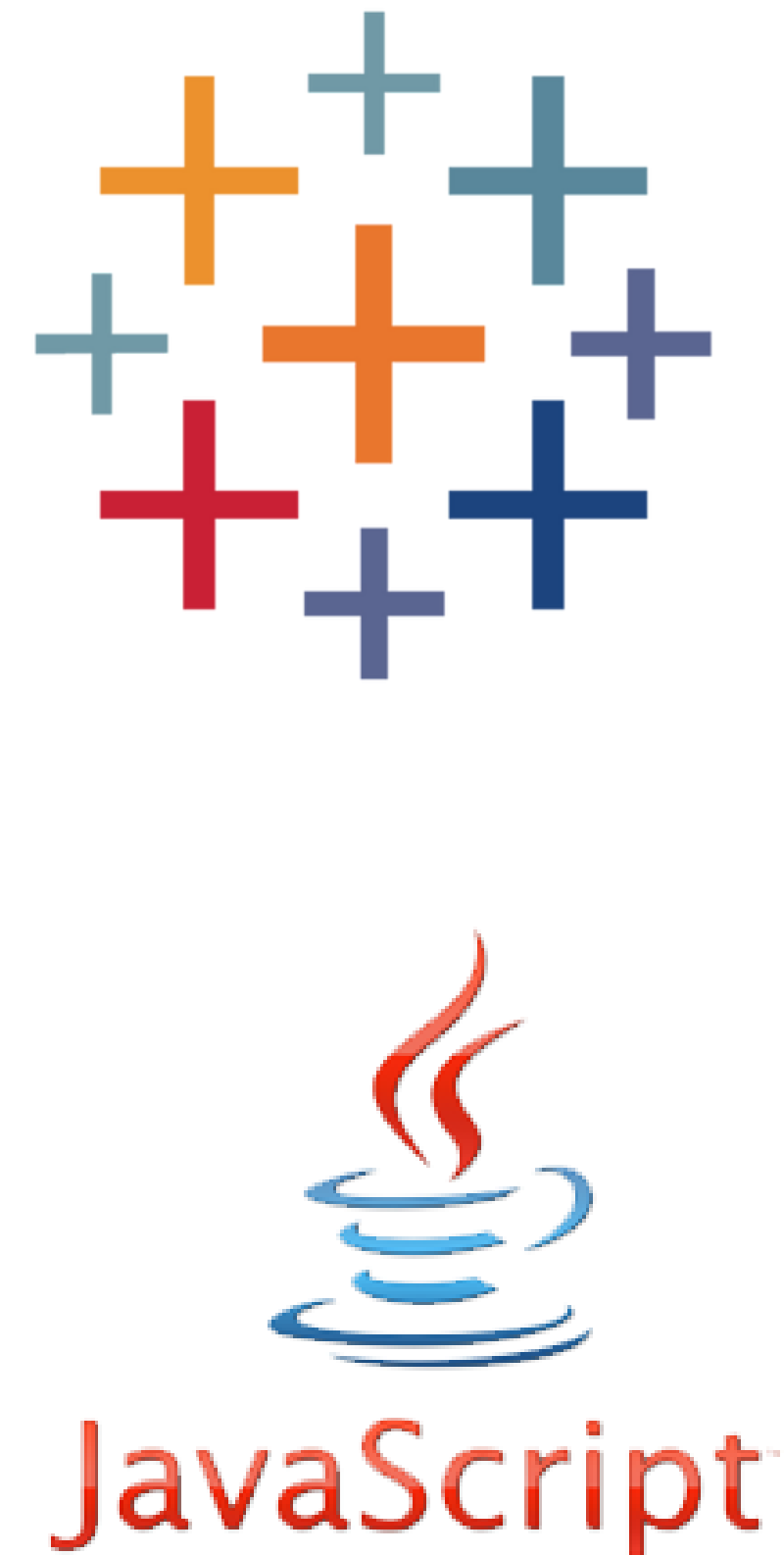
GOALS

- Better Understand Apps
- Better Tenant Management and Complaints
- Boost Water Usages Understandings

ANALYTICS

HOW SHOULD THE DATA BE DISPLAYED?

- D3 Library integrated with PostgreSQL
- Tableau
- Javascript
- Papaparse
 - Chartjs



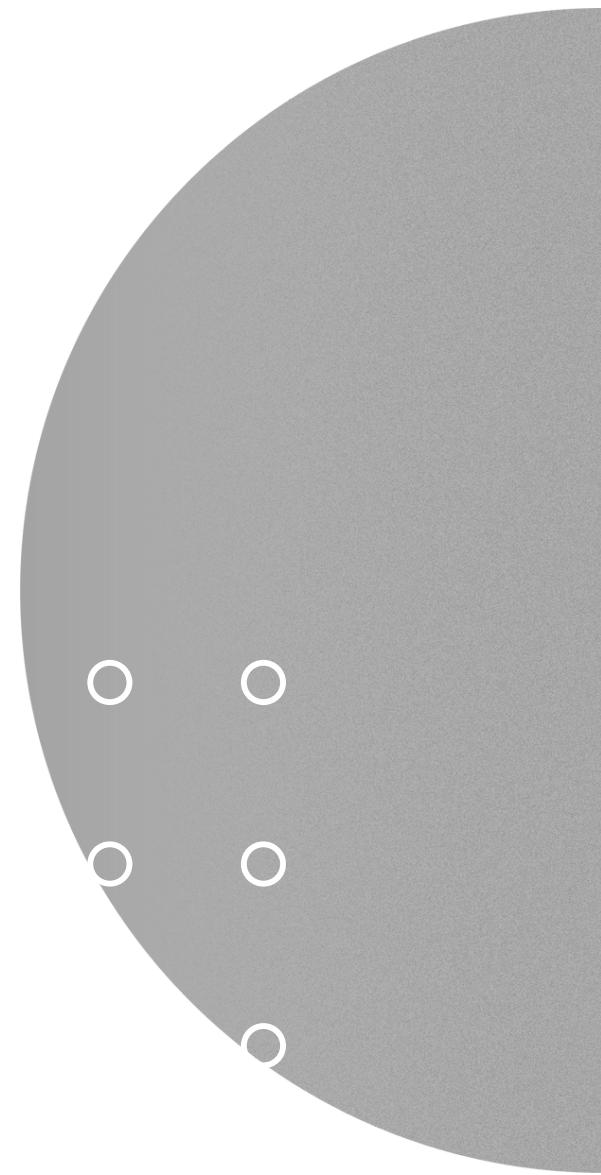


INTERFACING WITH SAYA.LIFE PLATFORM

Delivering Safety Health & Peace of Mind



Saya System Features



Requirements

BASE REQUIREMENTS GIVEN

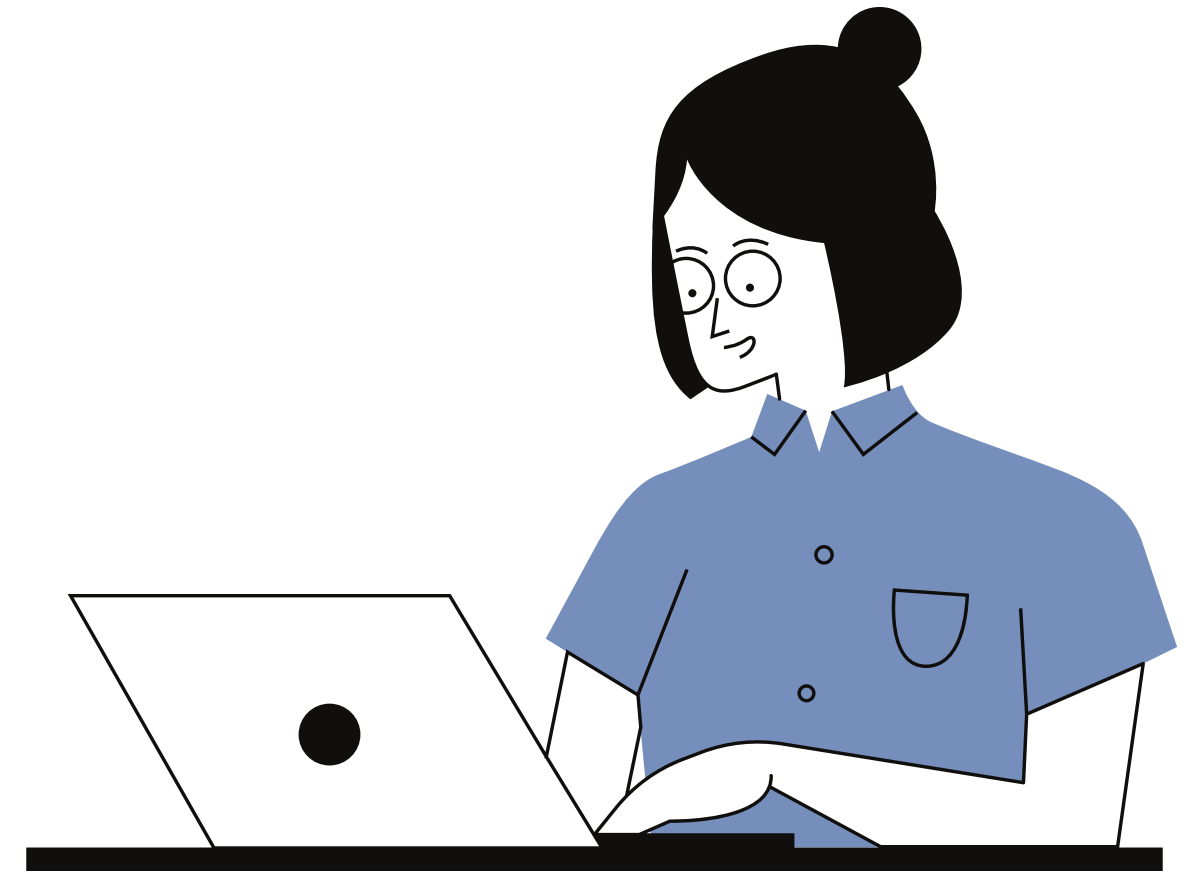
- Overhaul of existing application
- Improved analytics
- Modularity
- Must be in React

- 1.1.3. The system shall display a notification box that will update the user's current meter information
 - 1.1.3.1. The system shall display Four features: Unit NO, Description, Data/Time and Action
 - 1.1.3.2. The system shall display the unit No the notification message is for
 - 1.1.3.3. The system shall display a general summary of the description for the notification.
 - 1.1.3.4. The system shall display the date and time of the received notification
 - 1.1.3.5. The system shall display if there was any action taken for that notification
- 1.1.4. The System shall display the total consumption for the multi-tenant
 - 1.1.4.1. The system shall display the total consumption used for the multi-tenant user
 - 1.1.4.2. The system shall have the Four features: Yesterday, This Week, This Month, This Year
 - 1.1.4.3. The system shall display the data in gallons
 - 1.1.4.4. The system shall display options to modify the metric type of measurement
- 1.2. Billing
 - 1.2.1. The system shall display a Billing table with information for the user on each tenant

GOAL | MODULARITY

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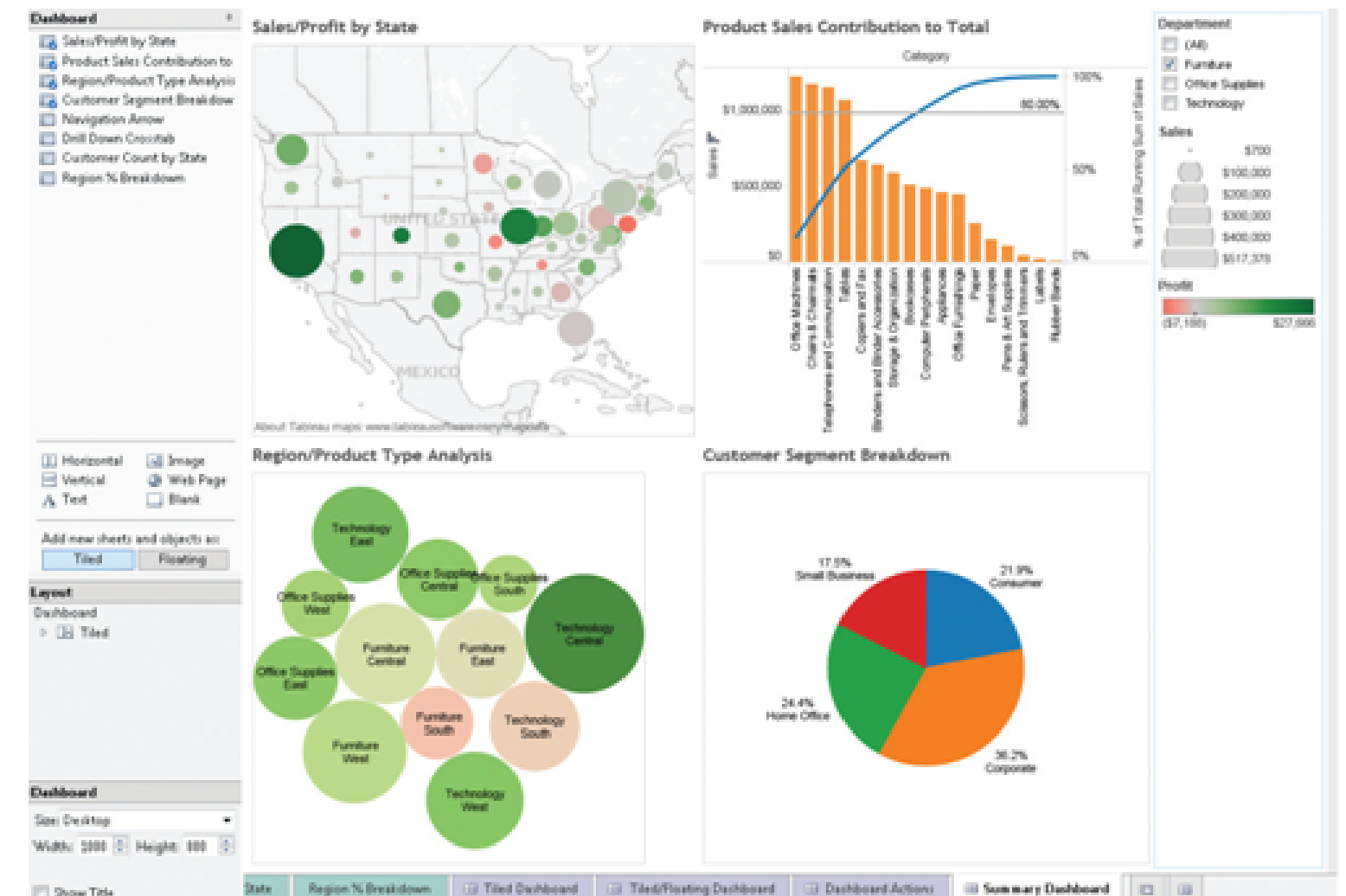
- Easily accessible interface
- No confusion, simple designs
- Fully functioning together with both types of users
- Smooth user interaction

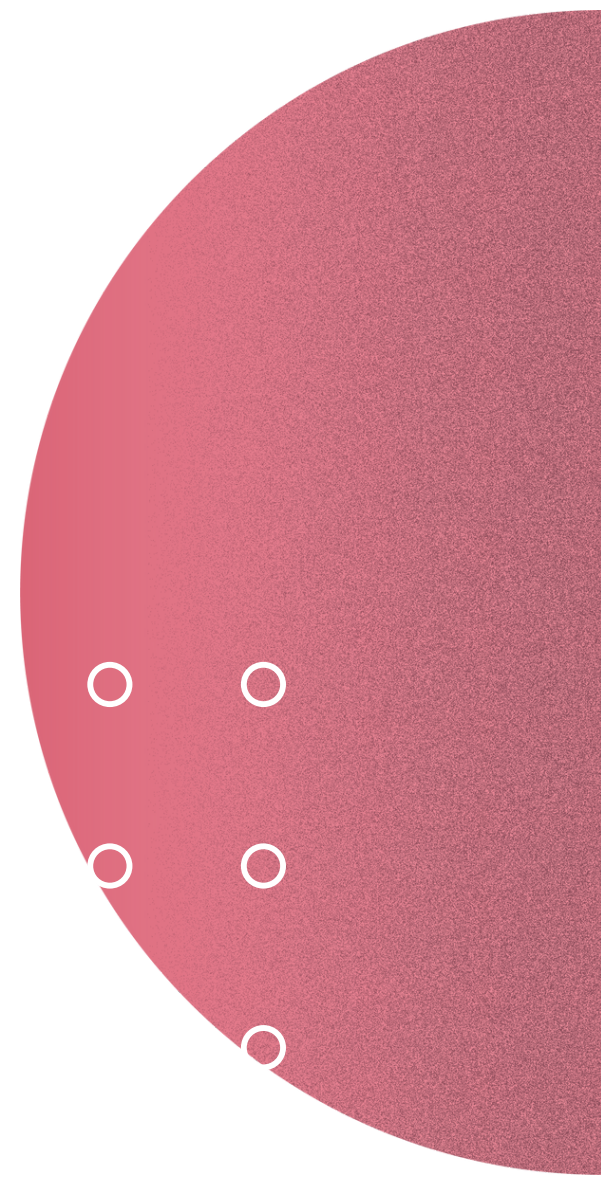


GOAL | ANALYTICS

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- Able to monitor water usage across multiple billing cycles
- Insight into money saving practices
- Adjustable to meet user's needs
- Easy to understand and interpret



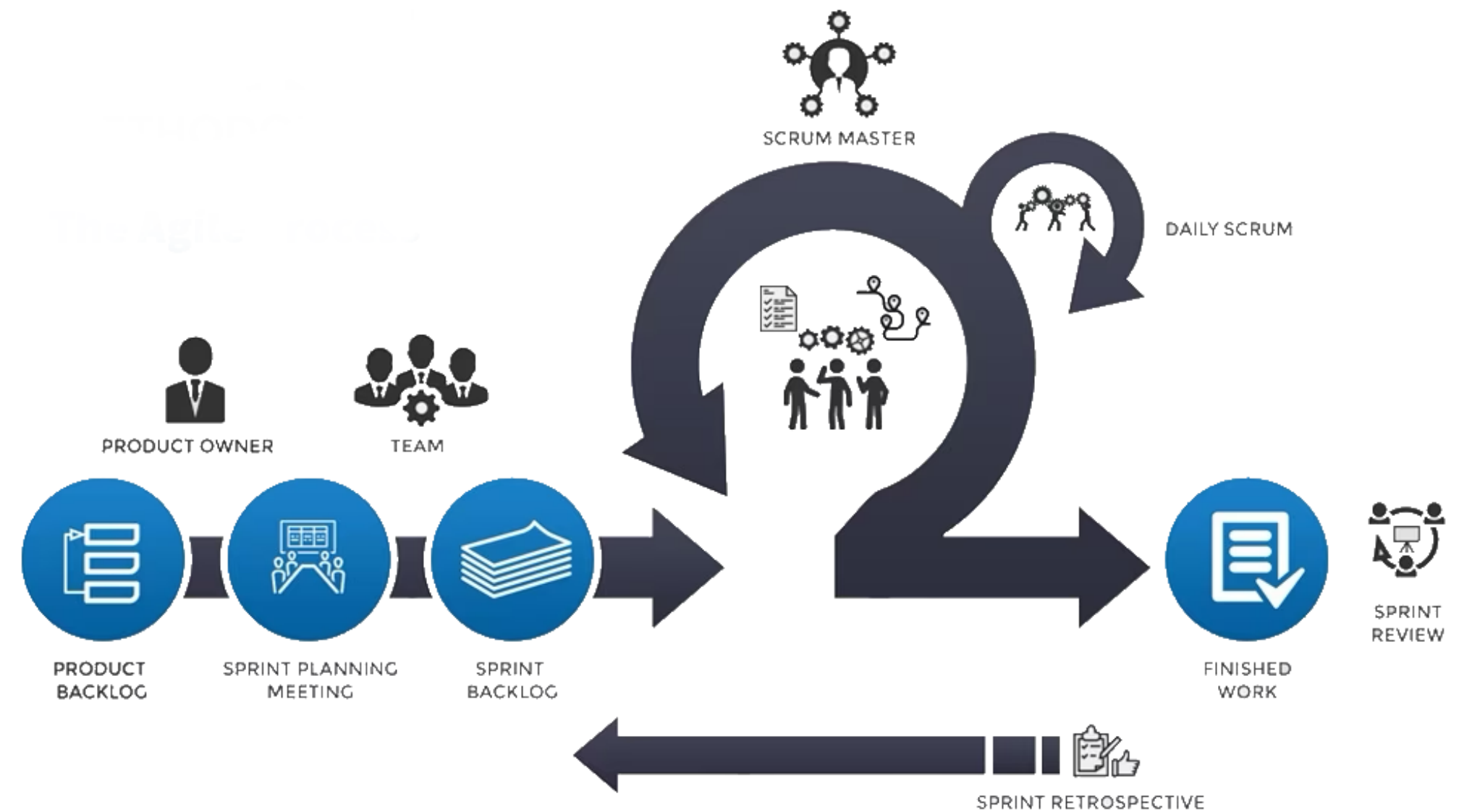


Project Planning

AGILE FRAMEWORK

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- Flexible
- Prevents overburdening
- Allows for quick pivots
- Keeps a solid pace



TEAM BREAKDOWN

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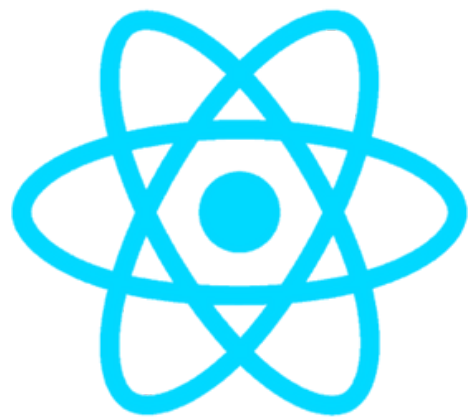
- Front End
 - Design Creation
- Back End
 - Database Creation
- Analytics
 - Graphs



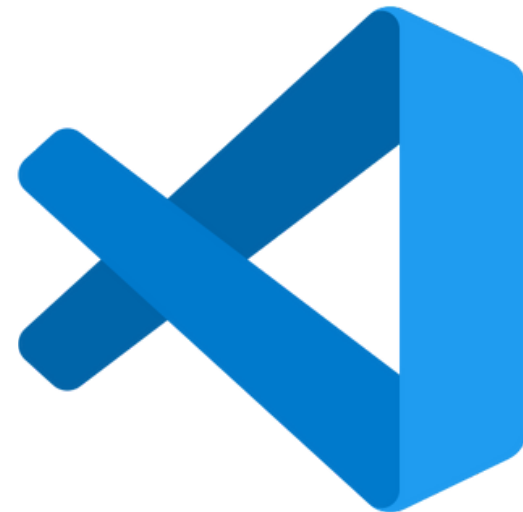
FRONT END TOOLS

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DEVELOPMENT



CSS



- React.js
- Cascading Style Sheet
- Visual Studio
- Github
- Figma

BACK END TOOLS

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- Database in mySQL
- Fields from CSV file
- Updated through Visual Studio



```
const [tenant, setTenant] = useState("");
const [unit, setUnit] = useState("");
const [meter_number, setMeterNumber] = useState("");
const [email, setEmail] = useState("");
const [tenantList, setTenantList] = useState([]);

const addTenant = () => {
  Axios.post("http://localhost:3001/create", {
    tenant: tenant,
    unit: unit,
    meter_number: meter_number,
    email: email,
  }).then(() => {
    setTenantList([
      ...tenantList,
      {
        tenant: tenant,
        unit: unit,
        meter_number: meter_number,
        email: email,
      },
    ]);
  });
}
```

Information

Table: **test_users**

Columns:

id	int PK
email	varchar(255)
password	varchar(255)
country_code	varchar(255)
phone_number	varchar(255)
account_name	varchar(255)
invoice_name_prefix	varchar(255)
first_name	varchar(255)
last_name	varchar(255)

Object Info Session

Communication and Documentation

- Jira
- Github
- Discord
- Zoom
- Skype
- Canva
- Google Docs

Documentation

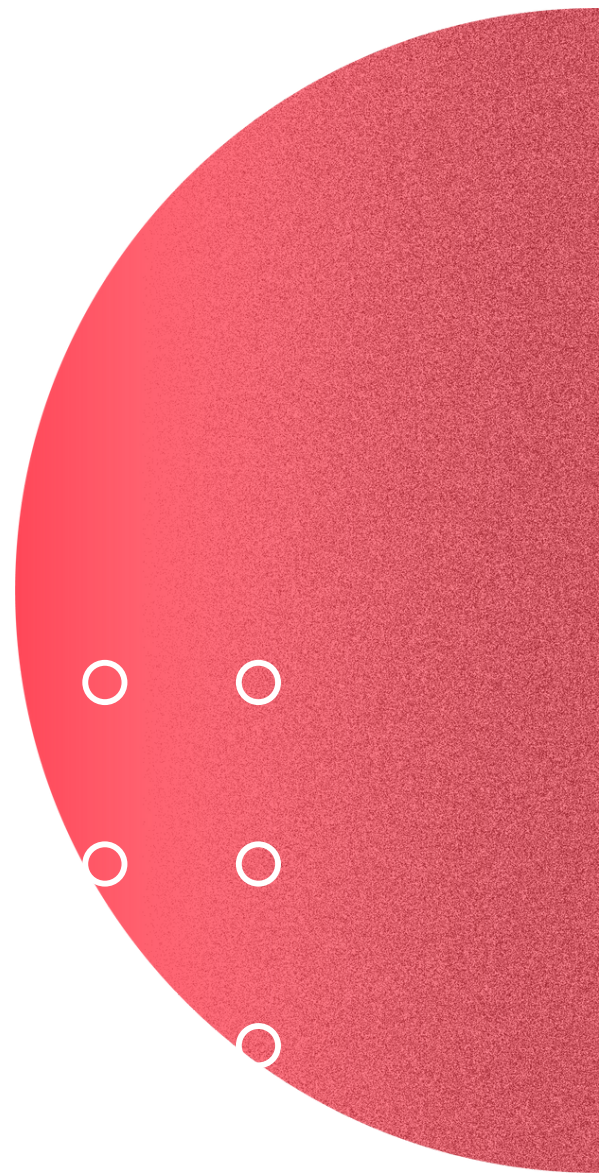


Project Management



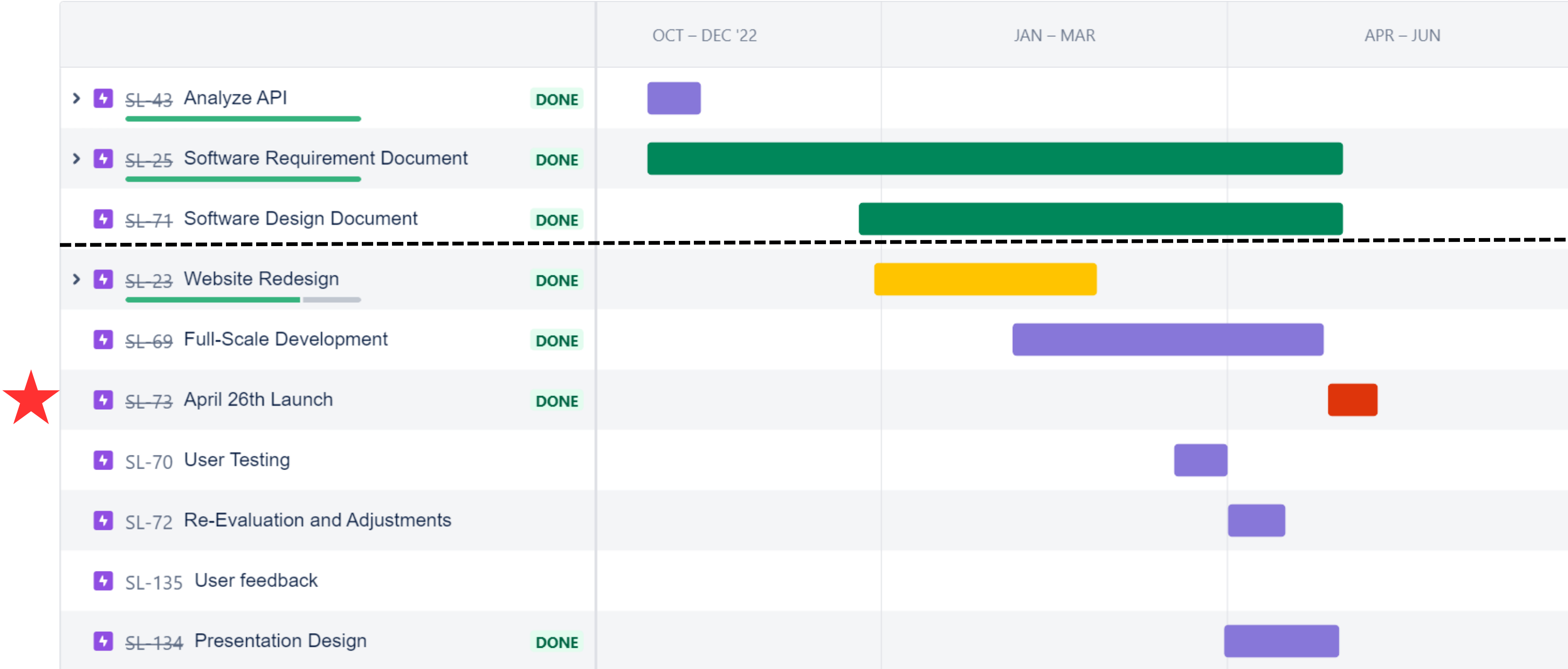
Communication





Project Timeline

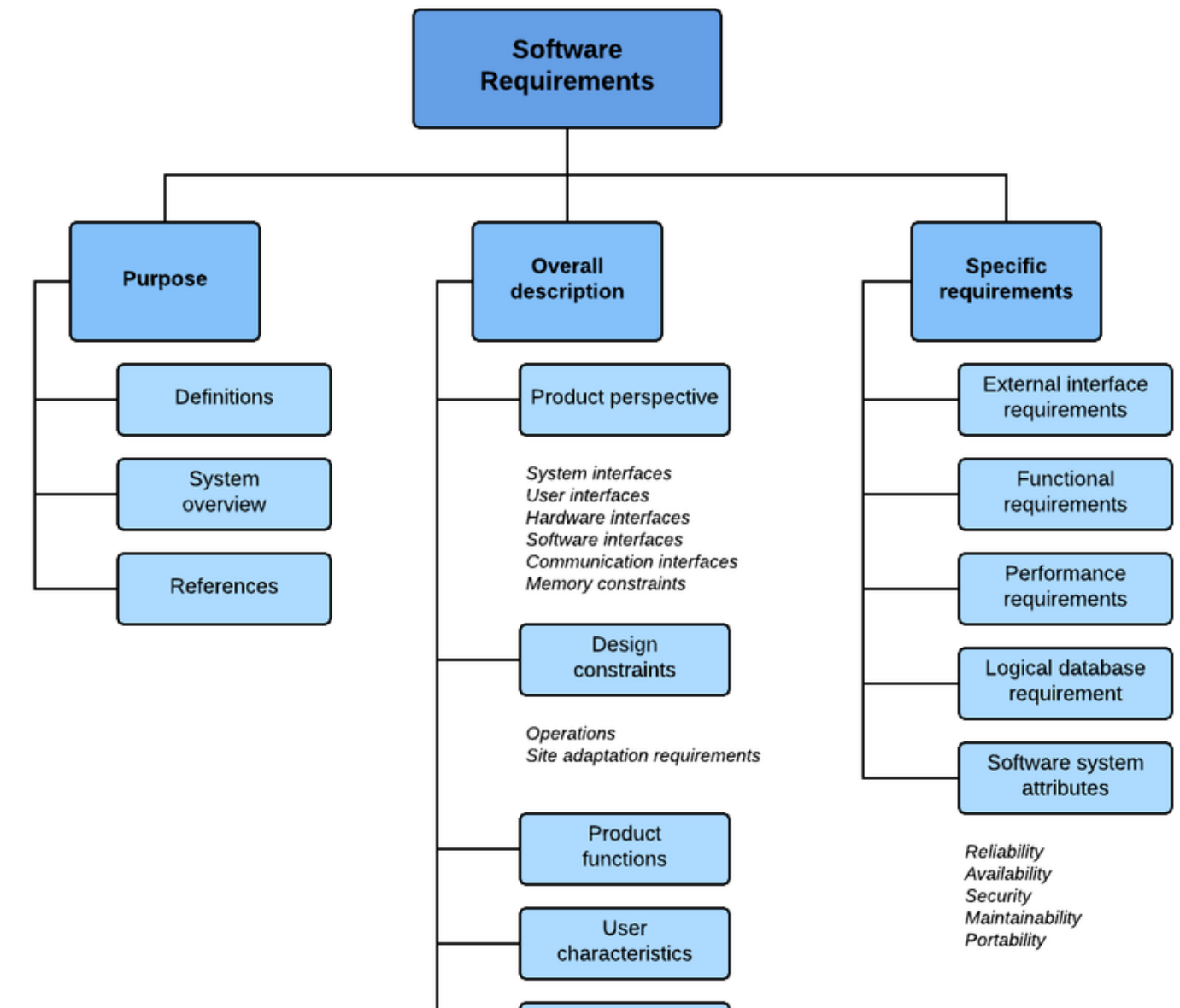
SUMMARY OF PROJECT TIMELINE



- Study the provided API
- Persona development
- Create wireframes for pages
- Decide web application stack, learn required technologies
- Begin documentation

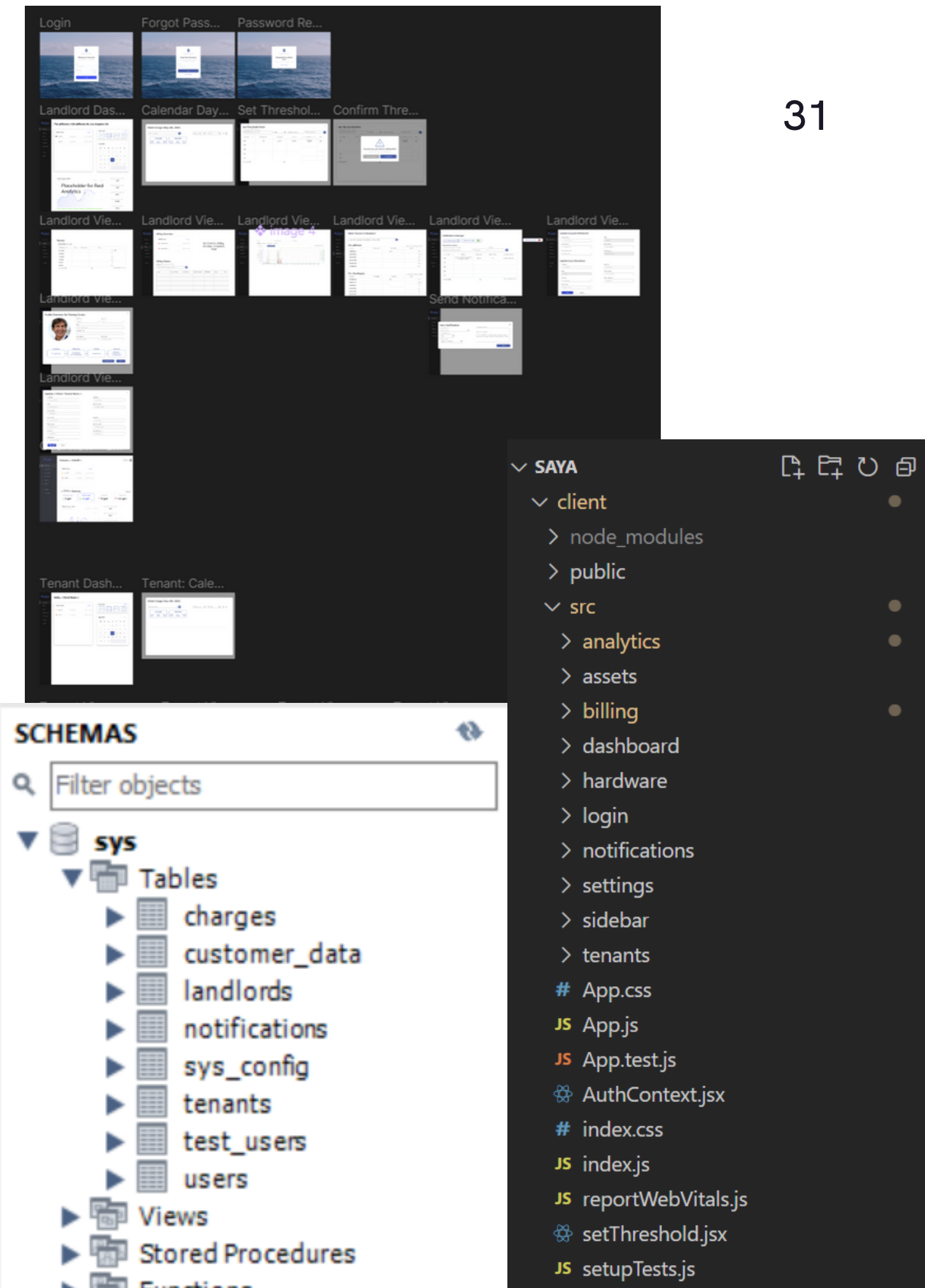
SRD Structure

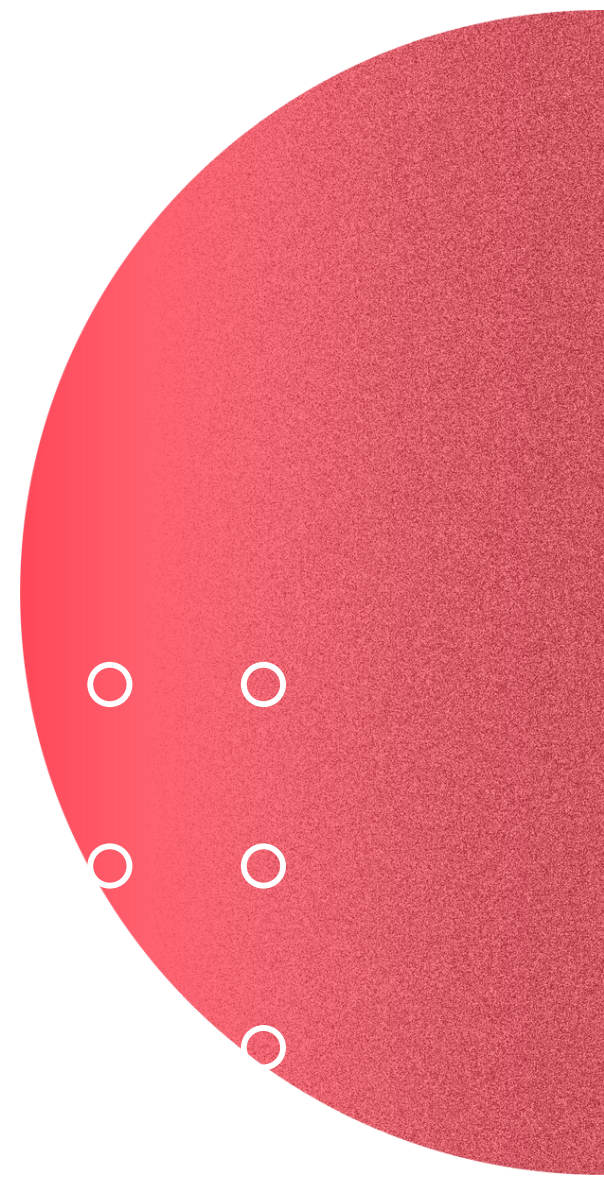
*based on the IEEE Guide to
Software Requirements
Specifications*



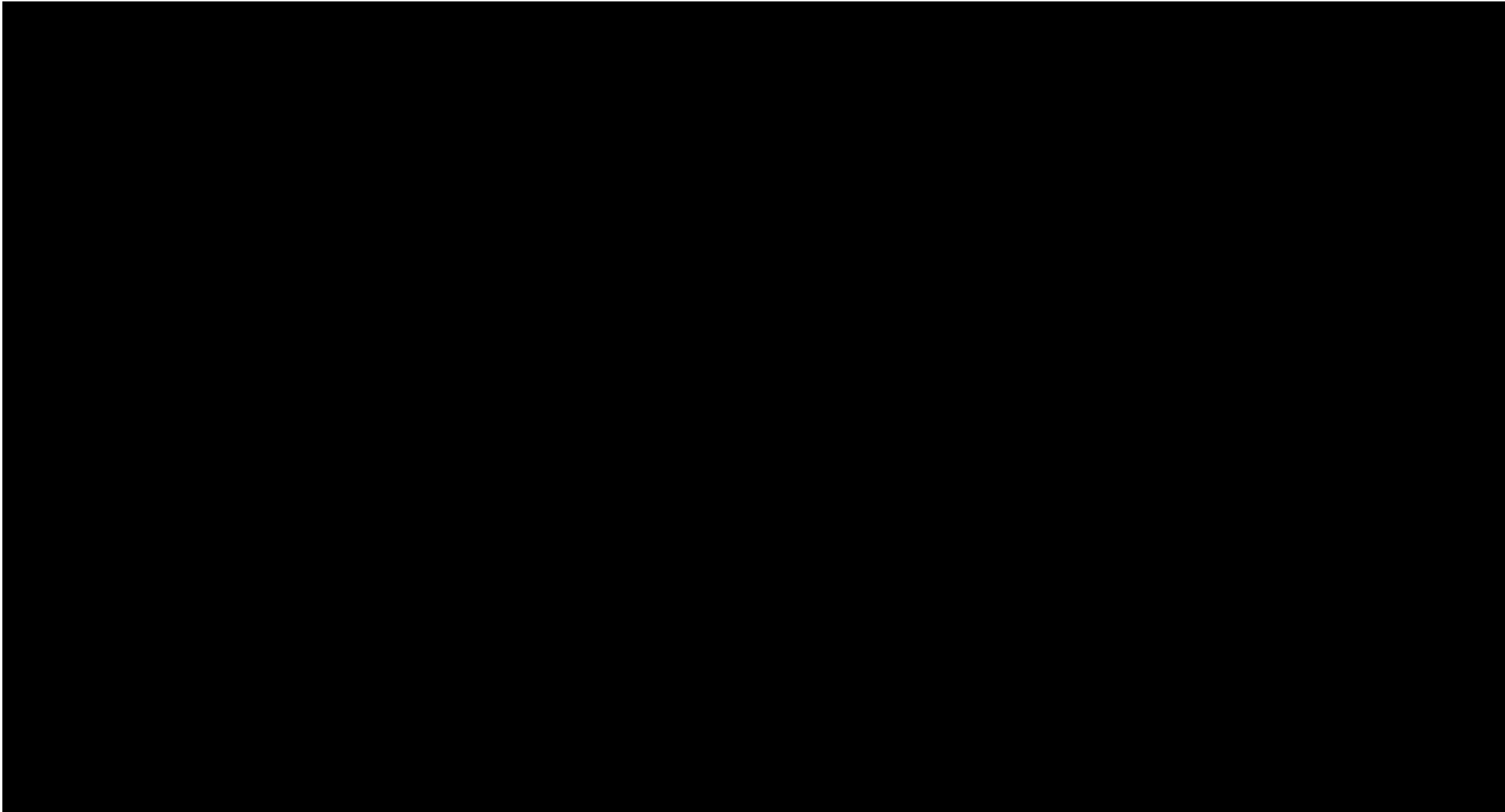
SPRING 2023

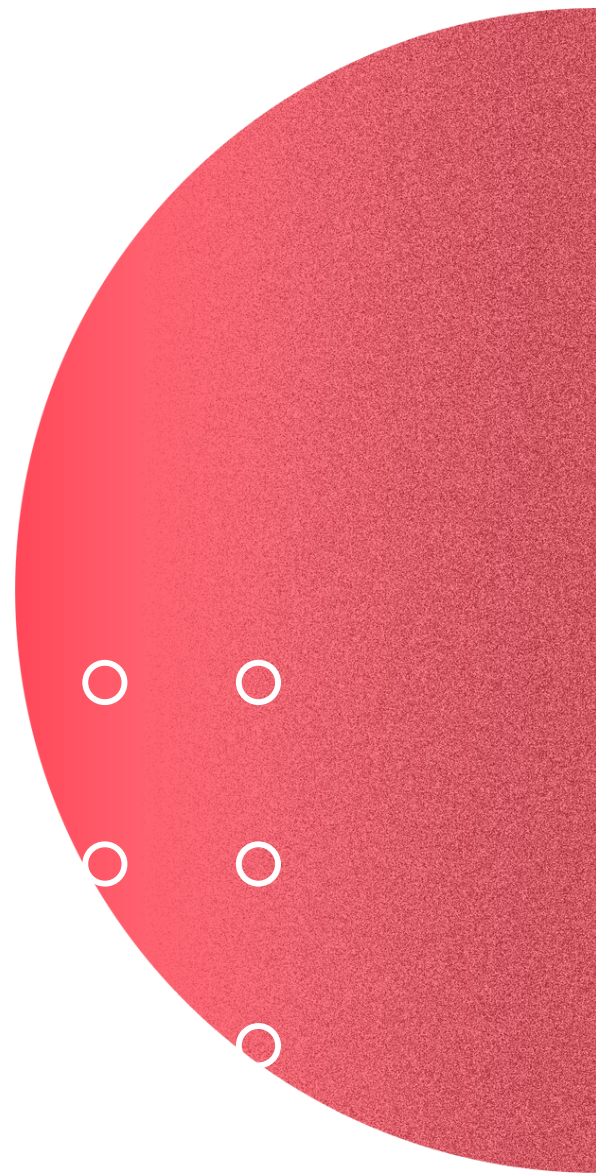
- Redesigned Landlord portal and tenant portal on Figma
- Developed Landlord-view web application
 - Created mySQL database analogous to Saya.LIFE's production database
 - Developed web application using React
 - Styled Web application using CSS and Figma.
- Software Design Document & Misc. Documentation





Project Demo





Next Steps

NEXT STEPS

- Real-time data integration with Saya Sensors and Live Data
- Full Development of Tenant View portal
- Integration of Stripe payment API
- Integration with Saya.LIFE database



stripe

NEXT STEPS CONT.

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- User Testing
 - "We are not our Users." - Dr. Krum, 2023
 - Administer a survey to a diverse set of participants
 - Make adjustments to our design

⚡ SL-73 April 26th Launch	DONE
⚡ SL-70 User Testing	
⚡ SL-72 Re-Evaluation and Adjustments	
⚡ SL-135 User feedback	
⚡ SL-134 Presentation Design	DONE

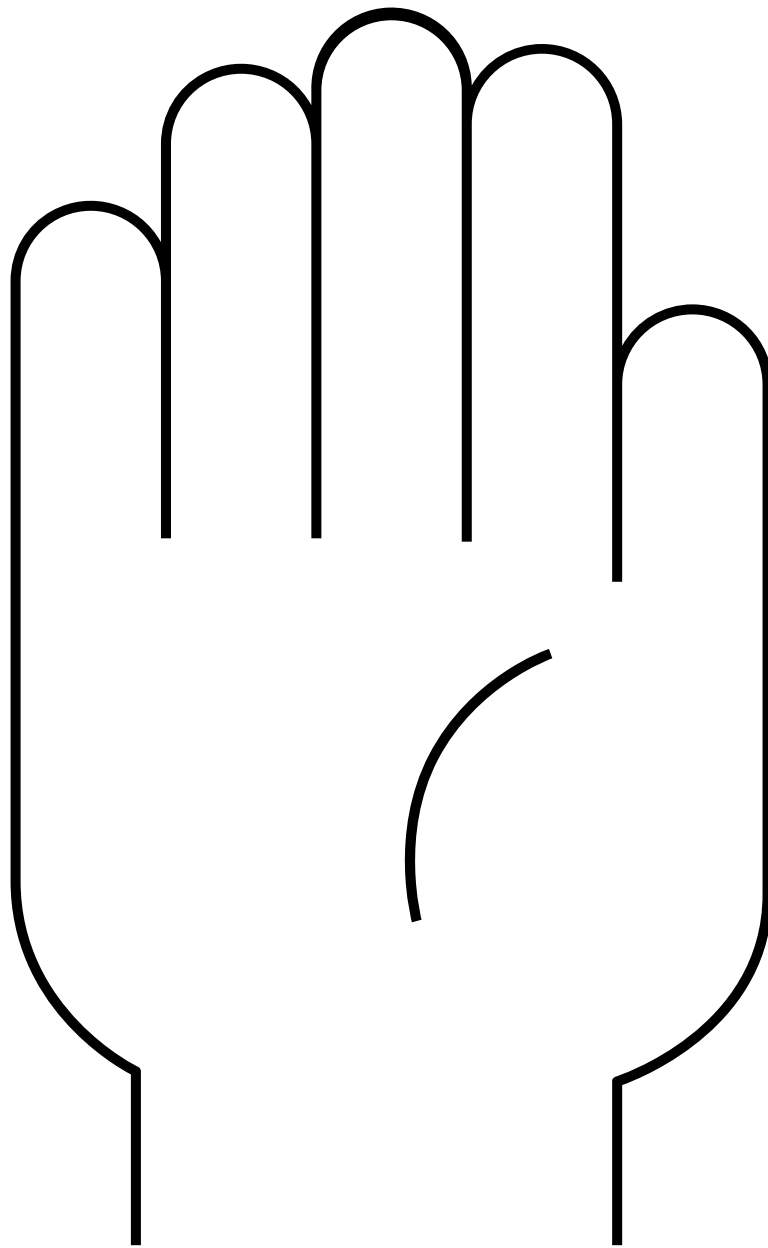
Saya.life Website Questionnaire

The following questionnaire is intended for use only for Cal State LA's Computer Science Senior Design Project: Team Saya.Life (2023).

Please answer questions to the best of your ability.

Thank you!





QUESTIONS?

References

Elling, S., Lentz, L., & De Jong, M. D. (2007). Website Evaluation Questionnaire: Development of a Research-Based Tool for Evaluating Informational Websites. In Lecture Notes in Computer Science (pp. 293–304). Springer Science+Business Media.

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<https://saya.life/>