

SUMMARY

RASD

Goals
World & Shared Phenomena
Functional Requirements
Domain Assumptions
Alloy

DD

Component View Component Integration and Testing User Interface

REQUIREMENTS **ANALYSIS & SPECIFICATION** DOCUMENT

GOALS

For Students:

- G1 Enable students to create and manage their accounts, including uploading and updating CVs, saving internships, and tracking application history.
- G2 Allow students to search for internships using advanced filters (e.g., industry, location, salary, required skills, and application domain) and access detailed descriptions of the opportunities.
- G3 Notify students about internship opportunities that match their profiles, preferences, and goals, using personalized recommendations powered by advanced algorithms.
- G4 Provide students with tools to enhance their CVs by offering suggestions on format, content, and alignment with industry standards to improve their appeal to companies.
- G5 Enable students to monitor the status and progress of their applications and internships, track feedback, and report issues or complaints through dedicated communication spaces.

For Companies:

- G6 Enable companies to create and manage accounts for posting internships, reviewing applications, and accessing student profiles.
- G7 Allow companies to advertise internships with comprehensive project descriptions, required qualifications, and details on terms (e.g., compensation, mentorship opportunities, and technologies used).
- G8 Provide companies with tools to browse and filter student CVs, access relevant profiles, and receive notifications about candidates who meet their requirements.
- G9 Offer companies suggestions to optimize their internship postings, including recommendations on language, structure, and benefits to attract the best-suited candidates.
- G10 Notify companies when new student profiles align with their internship needs.

For University Coordinators:

- G11 Allow university coordinators to create and manage accounts using institutional email addresses.
- G12 Enable university coordinators to approve or reject internship proposals submitted by students or companies, ensuring compliance with academic policies and standards.
- G13 Provide university coordinators with access to detailed information on each internship, including descriptions, student progress, and contact details for companies, to maintain an overview of all activities.
- G14 Offer tools for university coordinators to handle complaints and intervene when necessary, including direct communication channels with students and companies.
- G15 Enable university coordinators to access reports and analytics on internship outcomes to improve collaboration and oversight.

WORLD & SHARED PHENOMENA



World Phenomena ID	Description
WP01	A student decides to search for an internship to gain experience and improve their skills.
WP02	A company decides to post an internship listing to attract potential candidates.
WP03	A student decides to submit an application for an internship.
(WP04)	A company reviews internship applications to evaluate potential candidates.
WP05	A university coordinator monitors ongoing internships to address issues or provide support.
WP06	A student provides feedback about their internship experience.
WP07	A company provides feedback about the student's performance during the internship.
WP08	A student or company identifies and reports a problem during an internship.
WP09	A university coordinator intervenes to resolve reported complaints or issues.

Shared Phenomena ID	Description	Control
SP01	A company enters its information to register.	World controlled
SP02	A student enters their information to register.	World controlled
SP03	A company enters its credentials to log in.	World controlled
SP04	A UC enters their information to register.	World controlled
SP05	A student enters their credentials to log in.	World controlled
SP06	A company logs out.	World controlled
SP07	A student logs out.	World controlled
SP08	A UC enters their credentials to log in.	World controlled
SP09	A company creates an internship listing, specifying required details.	World controlled
SP10	A student uploads their CV and enters preferences and skills.	World controlled
SP11	The platform provides personalized internship recommendations to students.	Machine controlled
SP12	A UC logs out.	World controlled
SP13	The platform notifies companies about student profiles matching their needs.	Machine controlled
SP14	A student applies to an internship via the platform.	World controlled

SP15	A company uses the platform to review ap- plications and shortlists candidates.	World controlled
SP16	A UC reviews and approves/rejects an in- ternship listing.	World controlled
SP17	The platform sends notifications about new internships to students.	Machine controlled
SP18	The platform notifies companies about new student applications.	Machine controlled
SP19	The platform schedules interviews be- tween students and companies.	Machine controlled
SP20	A company conducts interviews with stu- dents.	World controlled
SP21	The platform collects feedback from stu- dents and companies about the process.	Machine controlled
SP22	A student or company reports a complaint via the platform.	World controlled
SP23	The UC intervenes to address a complaint via the platform.	World controlled
SP24	The platform generates analytics and statistics based on outcomes and feedback.	Machine controlled

FUNCTIONAL REQUIREMENTS



Student's Requirements

- (R1.5) The system allows students to browse available internships, filtering by criteria such as location, industry, role, compensation, and internship type.
- [R1.8]: The system allows students to view detailed descriptions of internships, including required qualifications if any, type, location, salary.
- (R1.9) The system allows students to apply for internships by submitting their CVs and optional cover letters.
- [R1.11]: The system allows students to track the status of their internship applications, including
- [R1.14]: The system allows students to submit feedback on completed internships, rating their experience and suggesting improvements.
- [R1.15]: The system uses feedback submitted by students to refine the recommendation process and improve future matches.

Company HR's Requirements

- [R2.5]: The system allows Company HR to create and post internship listings by providing information such as job title, required skills (if any), compensation, and location.
- [R2.9]: The system allows Company HR to browse and search for student profiles using filters such as education, location and skills.
- [R2.10]: The system allows Company HR to view detailed student profiles, including uploaded CVs and other relevant information.
- [R2.11]: The system prioritizes recommended candidates based on their fit with the internship requirements.
- [R2.14]: The system allows Company HR to track the status of applications for their internship postings (e.g., under review, shortlisted, or rejected).
- [R2.16]: The system allows Company HR to submit feedback on completed internships, rating the student's performance and suggesting improvements.

University Coordinator's Requirements

- (R3.5) The system provides University Coordinators with a dashboard to view and monitor all internships involving students under their supervision.
- [R3.10]: The system allows University Coordinators to view and respond to complaints filed by students or companies with a built-in communication channel.

DOMAIN ASSUMPTIONS 🍪

[D1]: All users have an internet connection.

[D2]: All notifications arrive correctly and on time to all users

[D3]: When a company publishes an internship, it is uploaded correctly.

[**D4**]: Each university coordinator has an institutional email.

[D5]: Students using the platform are actively enrolled in a university program.

[D6]: Companies registering on the platform are legitimate and capable of providing internships.

[D7]: Students input accurate and truthful information in their profiles and CVs.

[D8]: Companies input accurate and detailed descriptions of internships.

[D9]: Companies and students understand the terms and criteria used in matching.

[D10]: Students look for internships and update their profiles.

[D11]: The platform correctly identifies matches between students and companies.

(D12) Companies and students submit truthful and constructive feedback.

[D13]: Students, businesses, and coordinators can use the system simultaneously without issues.

[D14]: Students, companies, and coordinators have the technical skills to navigate the platform.

ALLOY MODEL



Alloy is a **formal** specification language that allows us to model, analyze, and verify system properties using **mathematical logic**. We have chosen to present the **signatures**, which serve as the building blocks of the model, representing objects, concepts, and roles within the system.

SIGNATURES



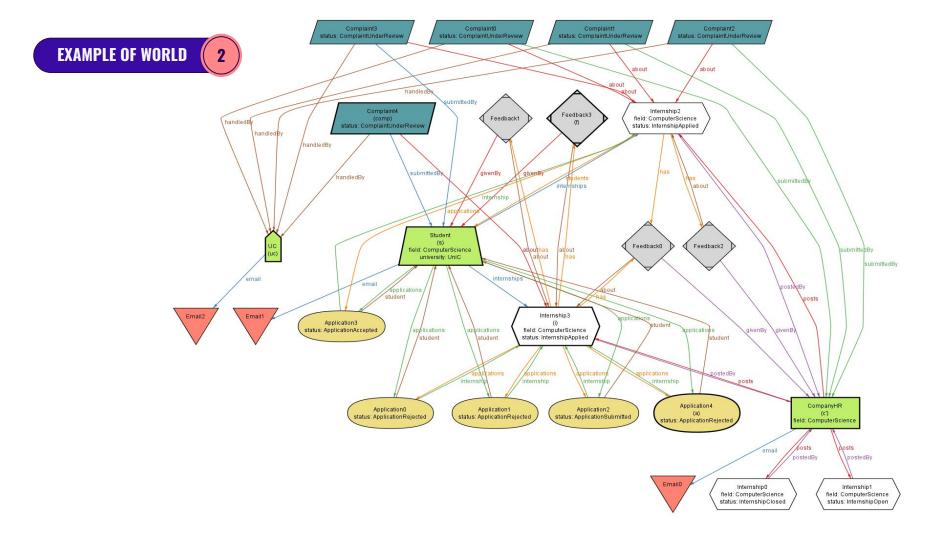
one sig Engineering, Law, Medicine, ComputerScience extends Field {}

```
abstract sig InternshipOpen, InternshipApplied, InternshipAccepted, InternshipOngoing, InternshipClosed extends InternshipStatus {}
abstract sig ApplicationStatus {}
one sig ApplicationSubmitted, ApplicationAccepted, ApplicationRejected extends ApplicationStatus {}
abstract sig ComplaintStatus {}
one sig ComplaintStatus {}
one sig ComplaintOpen, ComplaintUnderReview, ComplaintResolved, ComplaintRejected extends ComplaintStatus {}
abstract sig University {}
one sig UniA, UniB, UniC extends University {}
abstract sig Field {}
```

```
sia Email {}
// Abstract account for common properties
abstract sig Account {
   email: one Fmail
// Student inherits from Account
sia Student extends Account {
   university: one University.
   field: one Field.
   applications: set Application,
   internships: set Internship
// CompanyHR inherits from Account
sig CompanyHR extends Account {
   field: nne Field.
   posts: set Internship
// IIC inherits from Account
sig UC extends Account {
   complaints: set Complaint
sia Internship {
   field: one Field.
   applications: set Application,
   has: set Feedback.
   status: one InternshipStatus,
   students: set Student.
   postedBy: one CompanyHR
```

```
sig Application {
  student: one Student.
  internship: one Internship.
  status: one Application Status
sig Feedback {
  givenBy: lone (Student + CompanyHR),
  about: one Internship
sig Complaint {
  submittedBy: lone (Student + CompanyHR).
  handledBy: one UC.
  status: one ComplaintStatus,
  about: one Internship
```





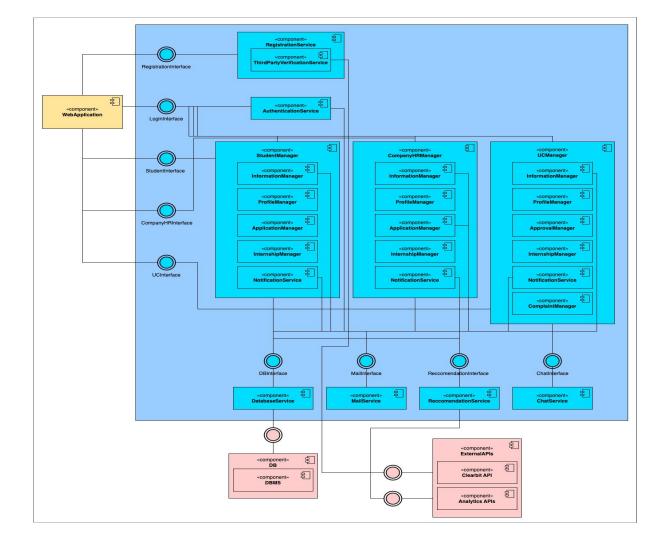
DESIGN DOCUMENT

COMPONENT VIEW

Illustrate the main functional blocks of our sistem.

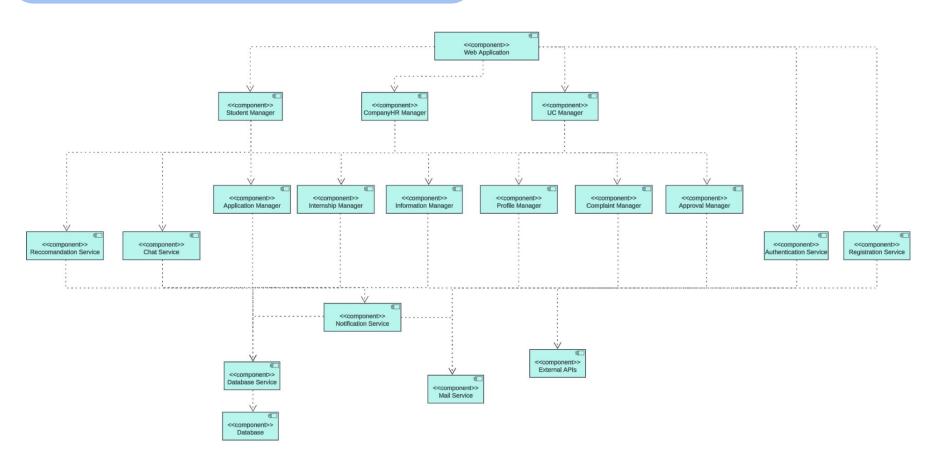
3 Layer Architecture:

- Presentation Layer,
- Application Layer manages core functionalities through specialized services
- Additional services and Data Layer

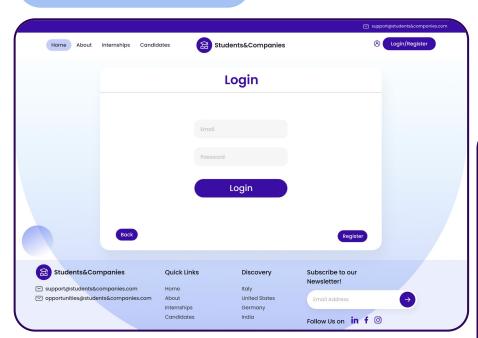


COMPONENT INTEGRATION AND TESTING

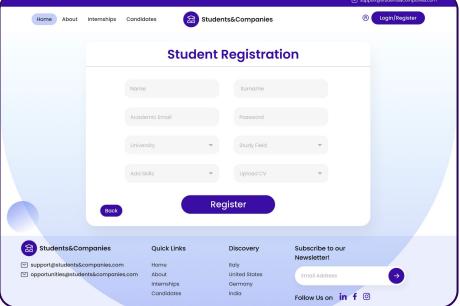




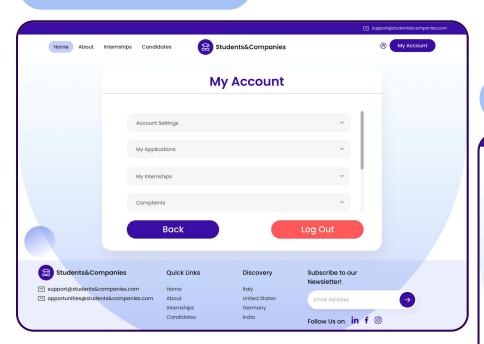
Login



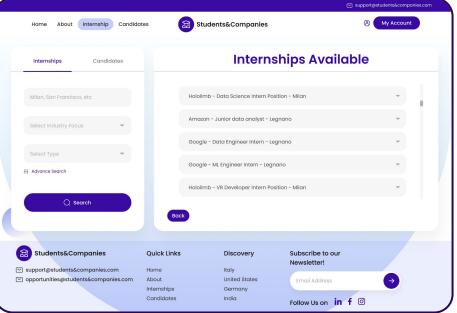
Registration



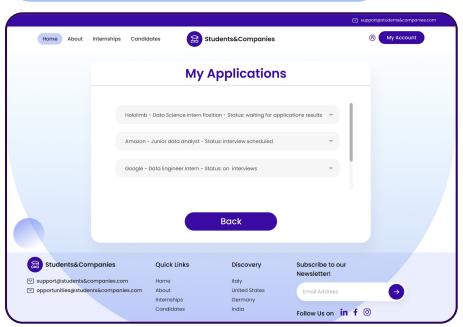
Student



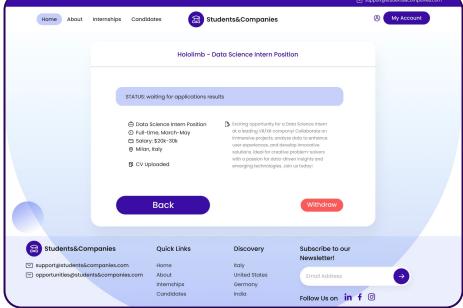
Internships Search



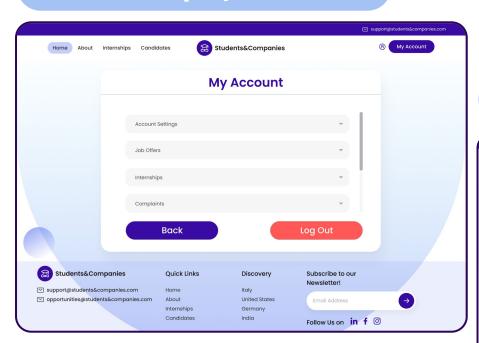
Student Applications



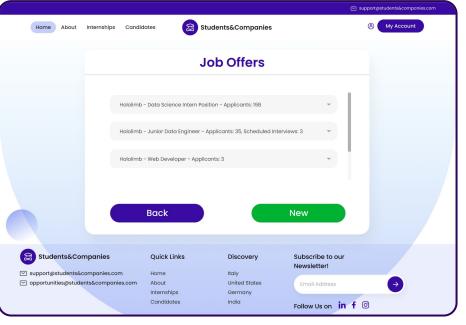
Application Details



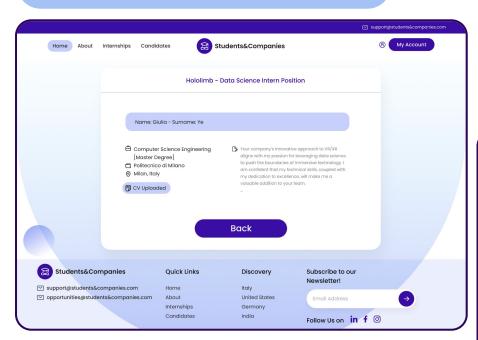
Company HR



Job Offers



Applicant Details



Complaints Overview

