PROG6212

PROGRAMMING 2B

Ryan Millard

ST10383326

10 September 2024

POE Part 1

Contents

Design Choices and Structure....3
Assumptions and Constraints....5
Database Design....6
Project Plan....7
GUI Layout....9
GitHub Repository....19

Design Choices and Structure

Layered architecture:

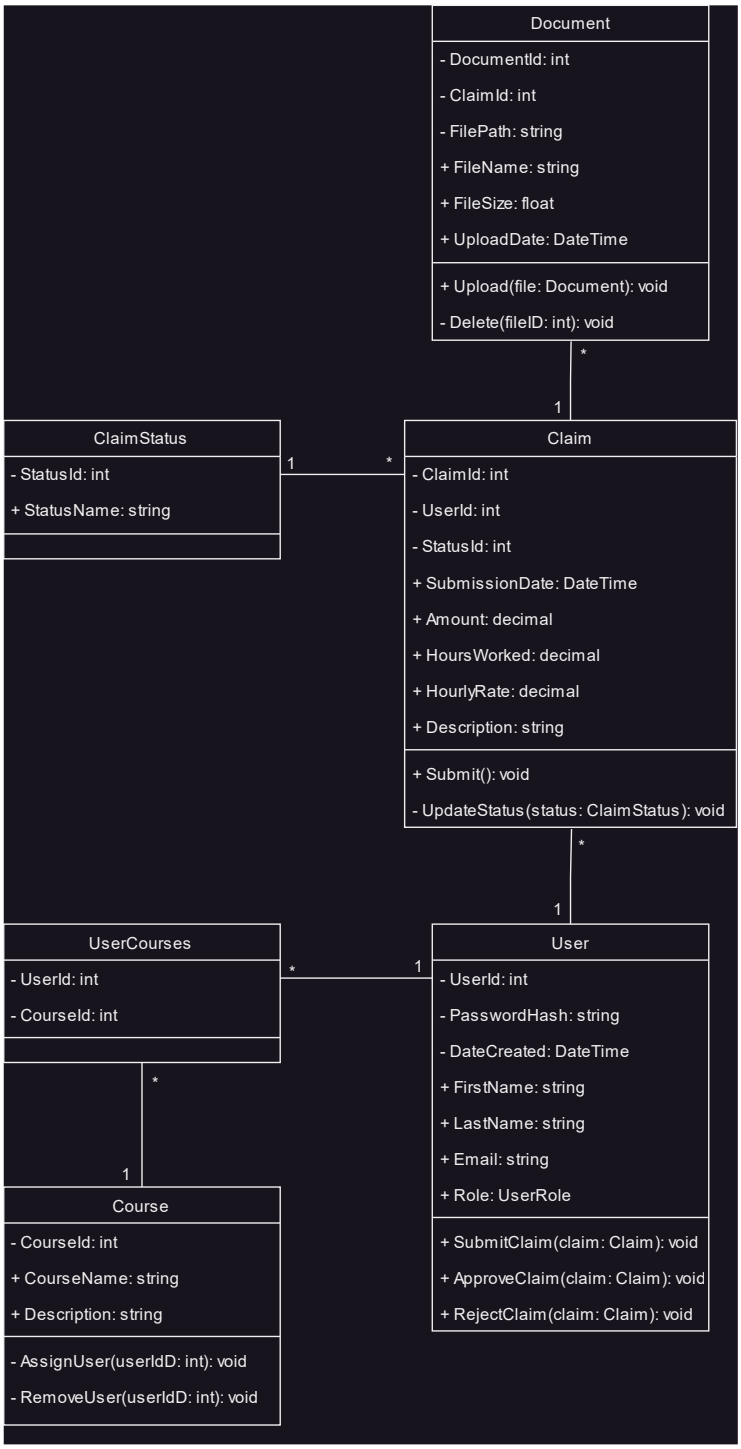
- **Presentation:** Razor Pages, Bootstrap
    - Excellent performance, scalability, and reusability.
        - Through partials,SSR, other Razor features
    - Cleaner architecture
    - Concern separation
    - Simplifies maintenance
    - **Layout:**
        - Top navbar
        - Pages
            - Home
            - Dashboard
                - Lecturers:
                    - New claim form
                    - Submitted claims table
                - Managers/Co-ordinators:
                    - Pending/approved claims table
            - Login
                - Full Name, email, password
        - Footer
- **Business Logic:** Services and domain models
    - Claim processing,etc.
    - Dependency injection decouples logic and UI

- **Data Access:** Entity Framework Core
  - Safe against attacks
  - Reusable queries
- **Database:** SQL Server
  - Integrates with ASP.NET and Entity
  - **Entities:**
    - **Users: Lecturers**, **coordinators,** and **managers**.
    - **Claims:** Claim details submitted by lecturers.
    - **ClaimStatus:** Approval status of each claim.
    - **Documents:** Metadata about claim documents.
    - **Courses:** Courses lecturers teach.
  - **Relationships:**
    - One-to-many between **Users** and **Claims**
    - One-to-many between **Claims** and **Documents**
    - Many-to-many between **Users** and **Courses**
  - **Key design decisions:**
    - Separate **ClaimStatus** table allows for easy future extensions of status types.
    - Storing document metadata separately from **Claims** allows for multiple documents per claim.
    - **Users** and **Courses** join table, **UserCourses**, tracks courses lecturers teach.

Assumptions and Constraints

- **User volume:** <1000 active users, primarily lecturers, is assumed.
- **Claim frequency:** Most claims expected monthly.
- **Document storage:** 2-3 documents/claim, max size: 10MB/each.
- **Workflow:** Two-step approval (coordinator->manager).
- **Browser support:** Modern browsers (Chrome, Firefox, Edge).

Database Design



Project Plan

Phases and Milestones

- **Planning (Week 1)**:
  - Scope project and specifications.
  - Finalize design and database structure.
- **Design & Prototyping (Week 2-3)**:
  - Develop:
    - View Mock-ups (Dashboard, Home, Login).
    - Razor Page layouts using Bootstrap.
- **Development (Week 4-8)**:
  - Implement
    - Entity Framework Core Database schema.
    - Role-based Razor Pages (Lecturer, Coordinator, Manager).
    - Claim submission and approval workflows.
- **Testing & Debugging (Week 9-10)**:
  - Unit testing.
  - Integration testing for Razor Pages and database interactions.
  - User Acceptance Testing for role-based functionality.
- **Finalization & Submission (Week 11)**:
  - Final bug fixes.
  - Documentation.
  - Deployment.

Dependencies

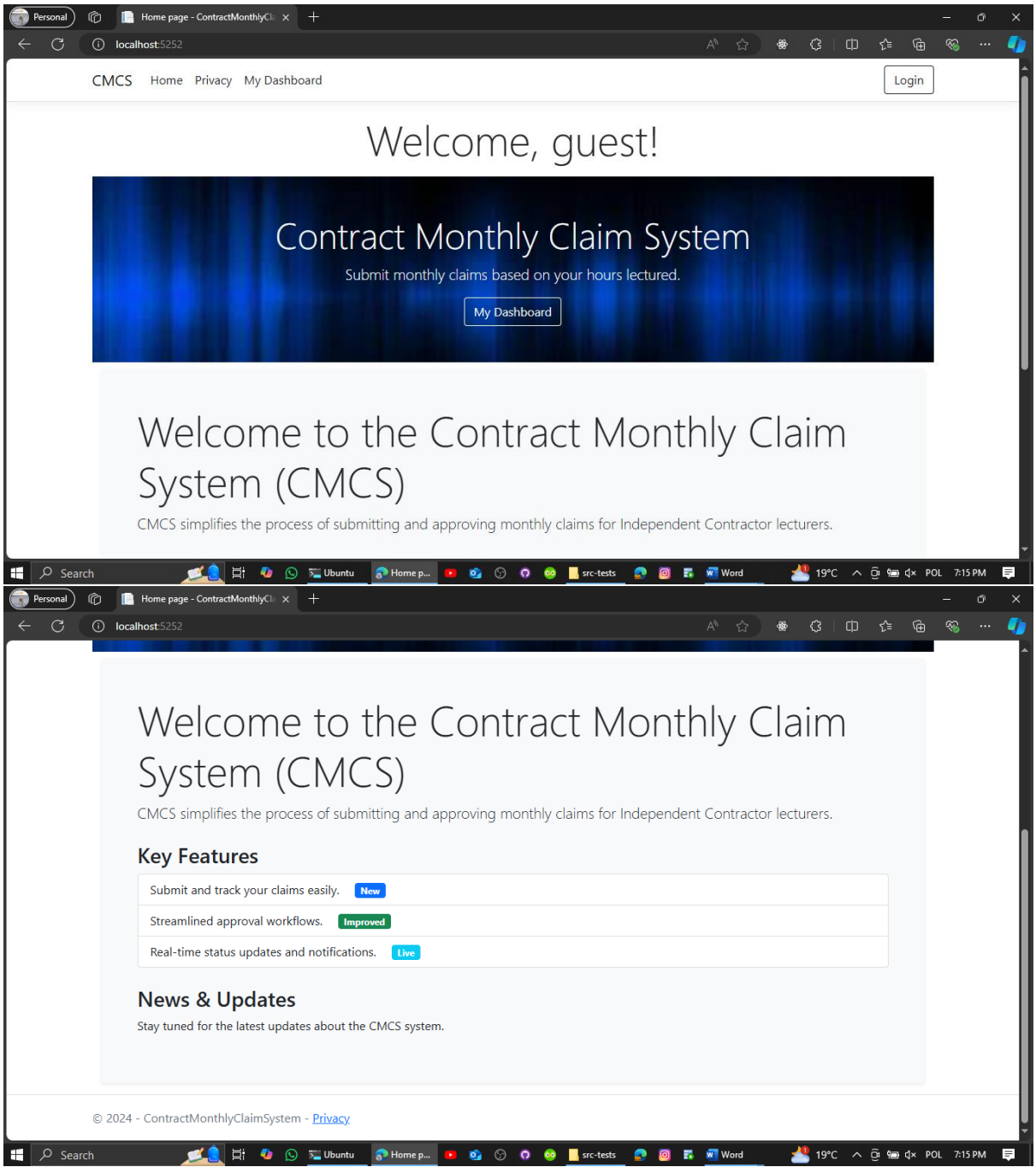
- **Tech Stack**:
  - SQL Server,ASP.NET Core, Entity Framework Core, Razor Pages, Bootstrap.
- **Dependencies**:
  - Environment setup (SQL Server,ASP.NET Core).
  - Database migration tools (EF Core Migrations).
  - Browser testing (modern browsers).

Tasks:

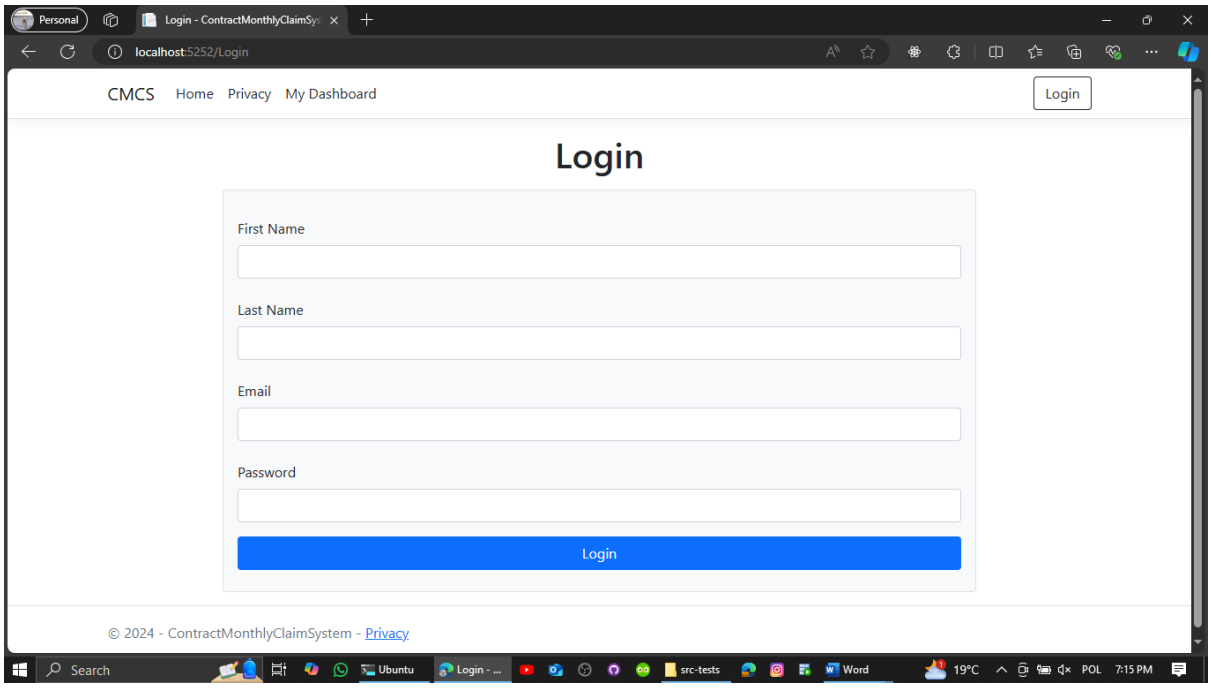
- **Week 1**: Scope and database schema.
- **Week 2**: Mock-ups.
- **Week 3**: BootstrapCSS.
- **Week 4-6**: Razor Pages.
- **Week 7-8**: Claim processing and document handling.
- **Week 9-10**: Testing, bug fixes.
- **Week 11**: Final submission preparations.

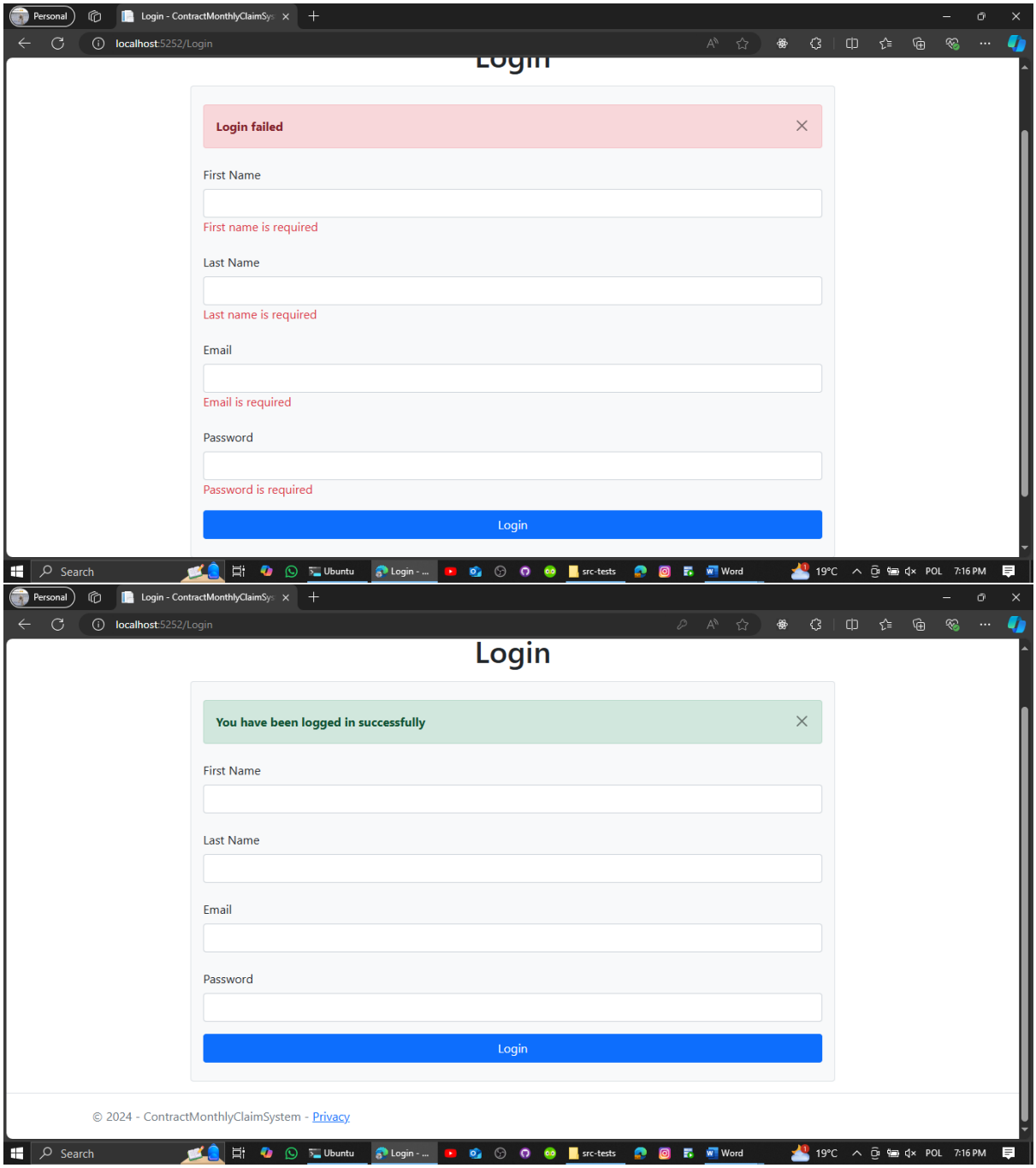
GUI Layout

- **Home**

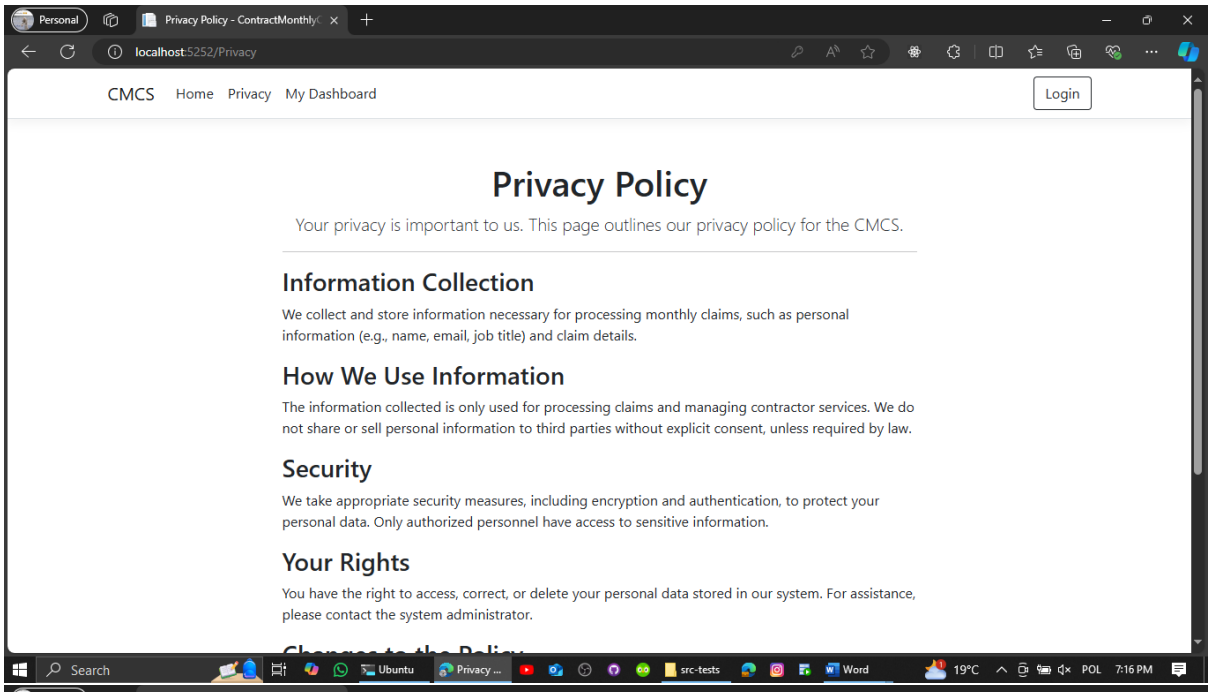


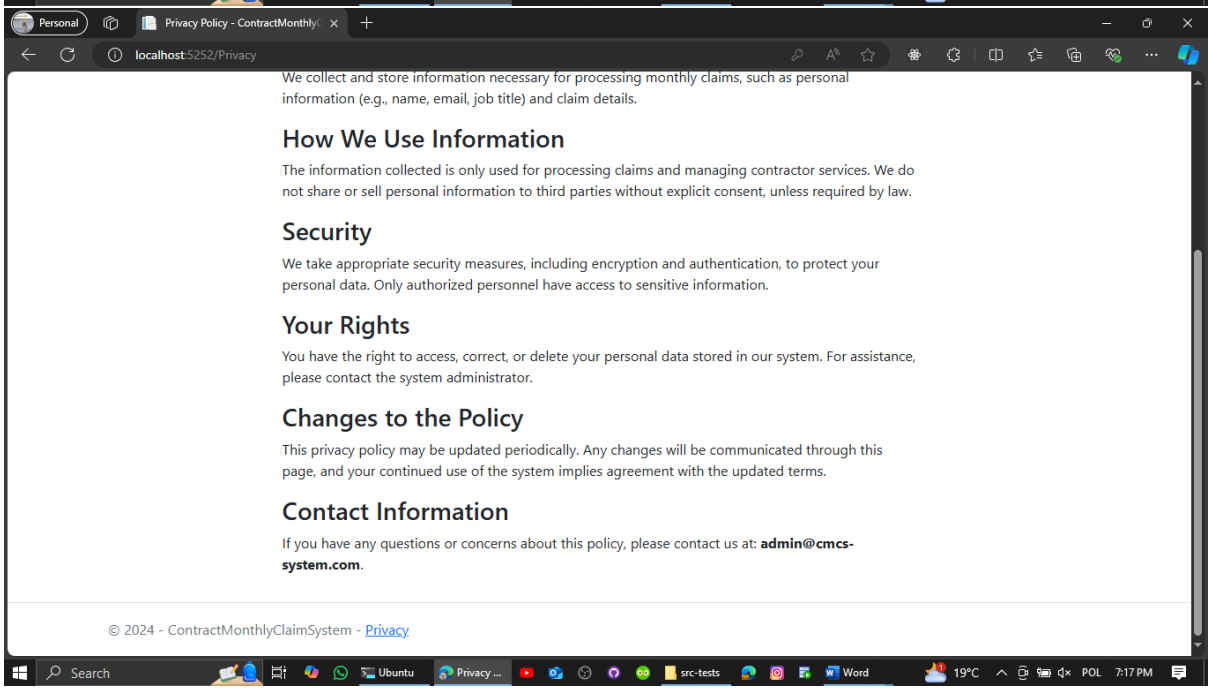
- **Login**


Personal
Login - ContractMonthlyClaimSy
localhost:5252/Login
CMCS
Home
Privacy
My Dashboard
Login
Login
First Name
Last Name
Email
Password
Login
© 2024 - ContractMonthlyClaimSystem - Privacy
Search
Ubuntu
Login - ...
src-tests
Word
19°C
POL
7:15 PM

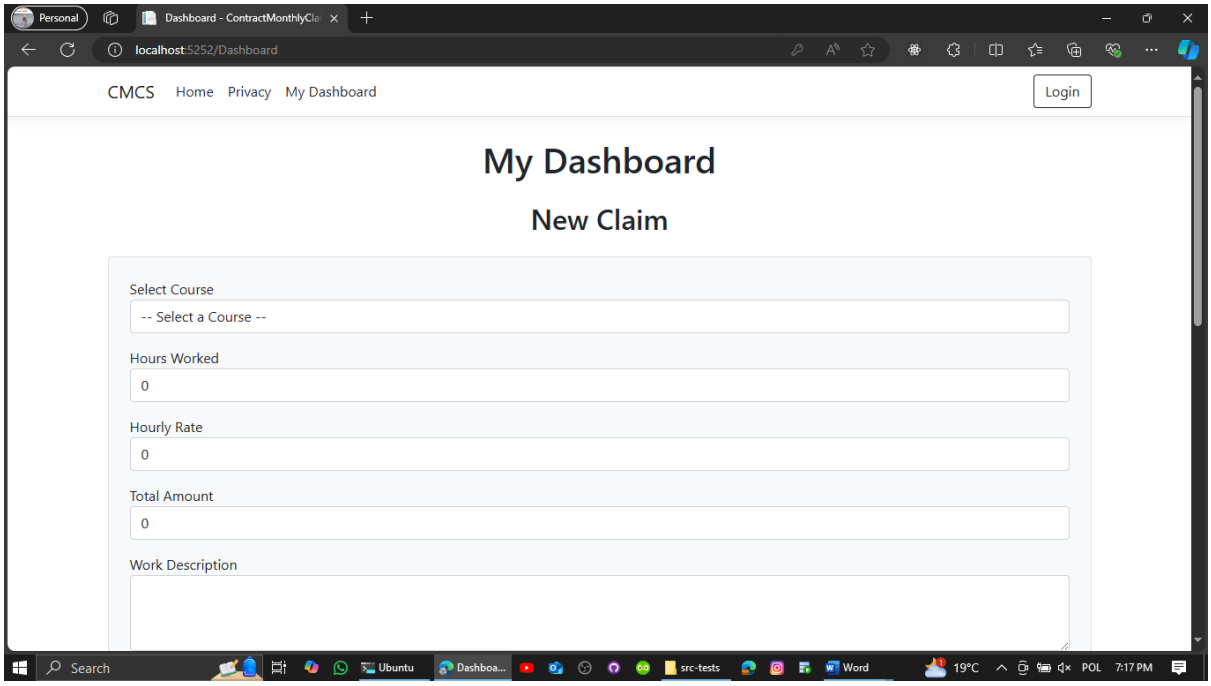

Personal
Login - ContractMonthlyClaimSys
localhost:5252/Login
Login
Login failed
First Name
First name is required
Last Name
Last name is required
Email
Email is required
Password
Password is required
Login
Search
Ubuntu
Login - ...
src-tests
Word
19°C
POL
7:16 PM
Personal
Login - ContractMonthlyClaimSys
localhost:5252/Login
Login
You have been logged in successfully
First Name
Last Name
Email
Password
Login
© 2024 - ContractMonthlyClaimSystem - Privacy
Search
Ubuntu
Login - ...
src-tests
Word
19°C
POL
7:16 PM

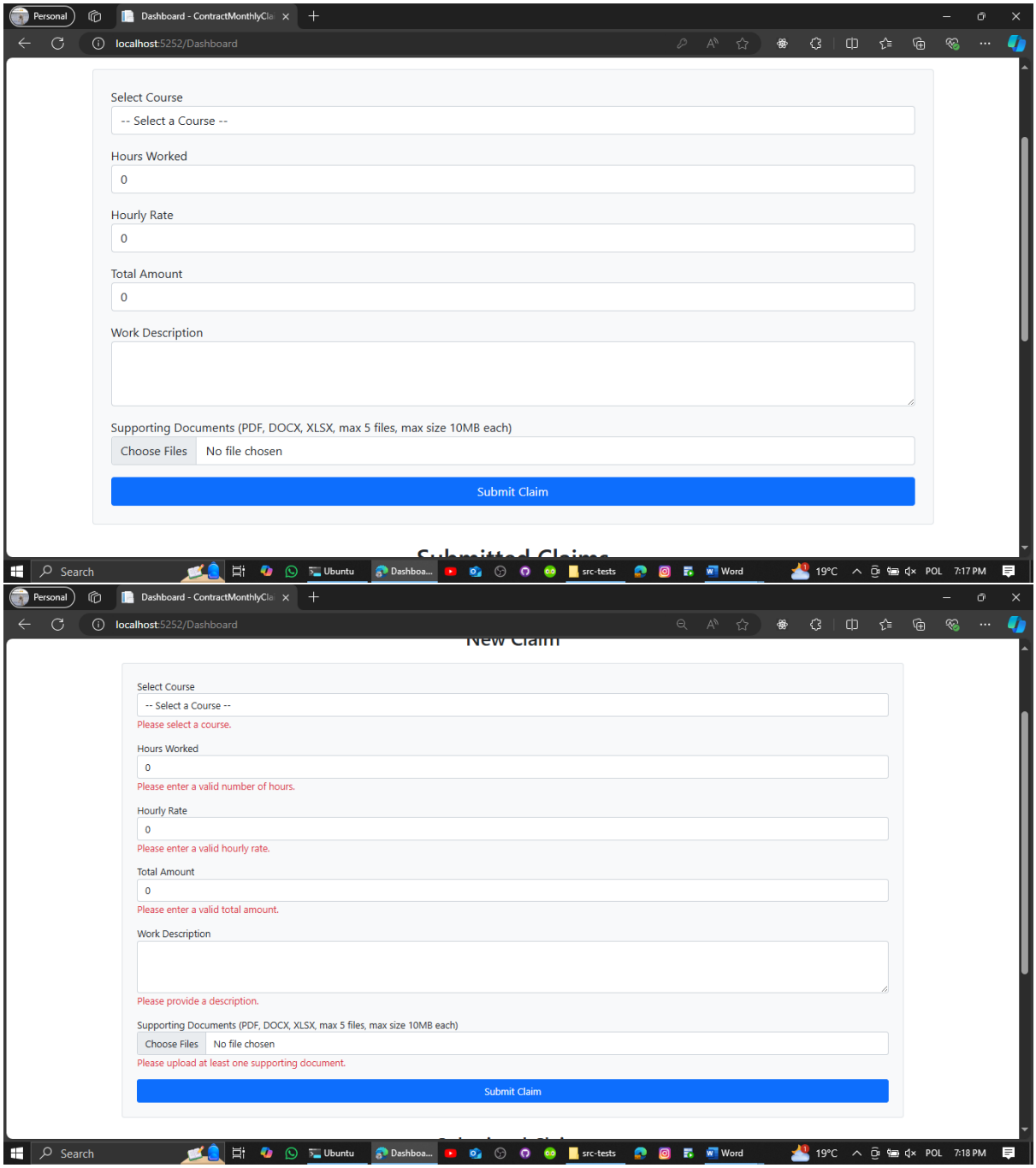
- **Privacy**


Personal
Privacy Policy - ContractMonthlyC
localhost:5252/Privacy
CMCS
Home
Privacy
My Dashboard
Login
Privacy Policy
Your privacy is important to us. This page outlines our privacy policy for the CMCS.
Information Collection
We collect and store information necessary for processing monthly claims, such as personal information (e.g., name, email, job title) and claim details.
How We Use Information
The information collected is only used for processing claims and managing contractor services. We do not share or sell personal information to third parties without explicit consent, unless required by law.
Security
We take appropriate security measures, including encryption and authentication, to protect your personal data. Only authorized personnel have access to sensitive information.
Your Rights
You have the right to access, correct, or delete your personal data stored in our system. For assistance, please contact the system administrator.
Search
Ubuntu
Privacy ...
src-tests
Word
19°C
POL
7:16 PM

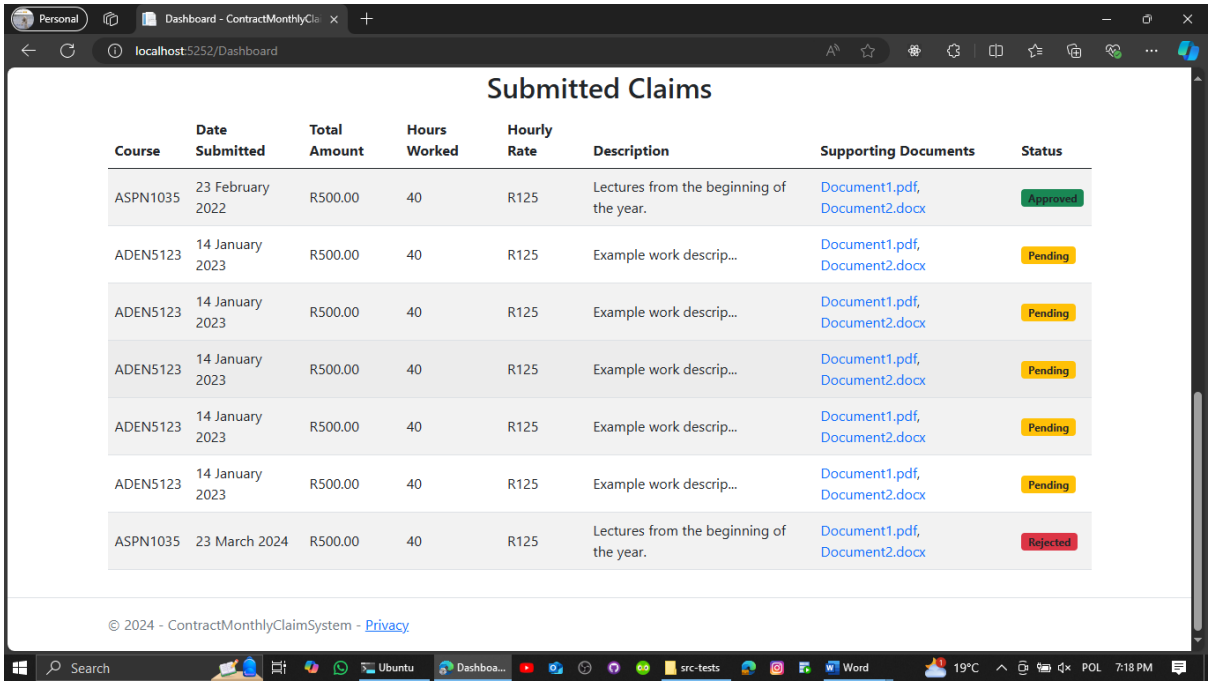

Personal
Privacy Policy - ContractMonthlyC
localhost:5252/Privacy
We collect and store information necessary for processing monthly claims, such as personal information (e.g., name, email, job title) and claim details.
How We Use Information
The information collected is only used for processing claims and managing contractor services. We do not share or sell personal information to third parties without explicit consent, unless required by law.
Security
We take appropriate security measures, including encryption and authentication, to protect your personal data. Only authorized personnel have access to sensitive information.
Your Rights
You have the right to access, correct, or delete your personal data stored in our system. For assistance, please contact the system administrator.
Changes to the Policy
This privacy policy may be updated periodically. Any changes will be communicated through this page, and your continued use of the system implies agreement with the updated terms.
Contact Information
If you have any questions or concerns about this policy, please contact us at: admin@cmcs-system.com.
© 2024 - ContractMonthlyClaimSystem - Privacy
Search
Ubuntu
Privacy ...
src-tests
Word
19°C
POL
7:17 PM

- **Role-based Dashboard (Updated according to role)**
    - **Lecturer View:**
        - Dashboard showing claim history and status.
        - Claim submission form with clear input validation.
            - Document upload area with drag-and-drop functionality.

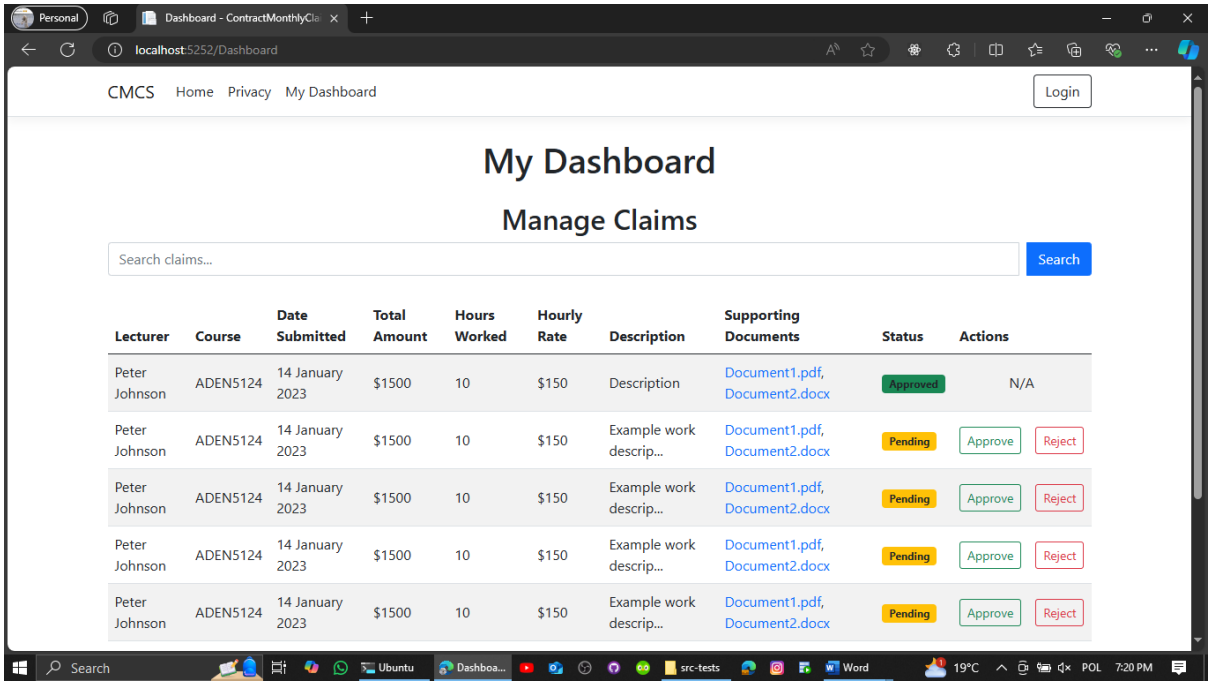


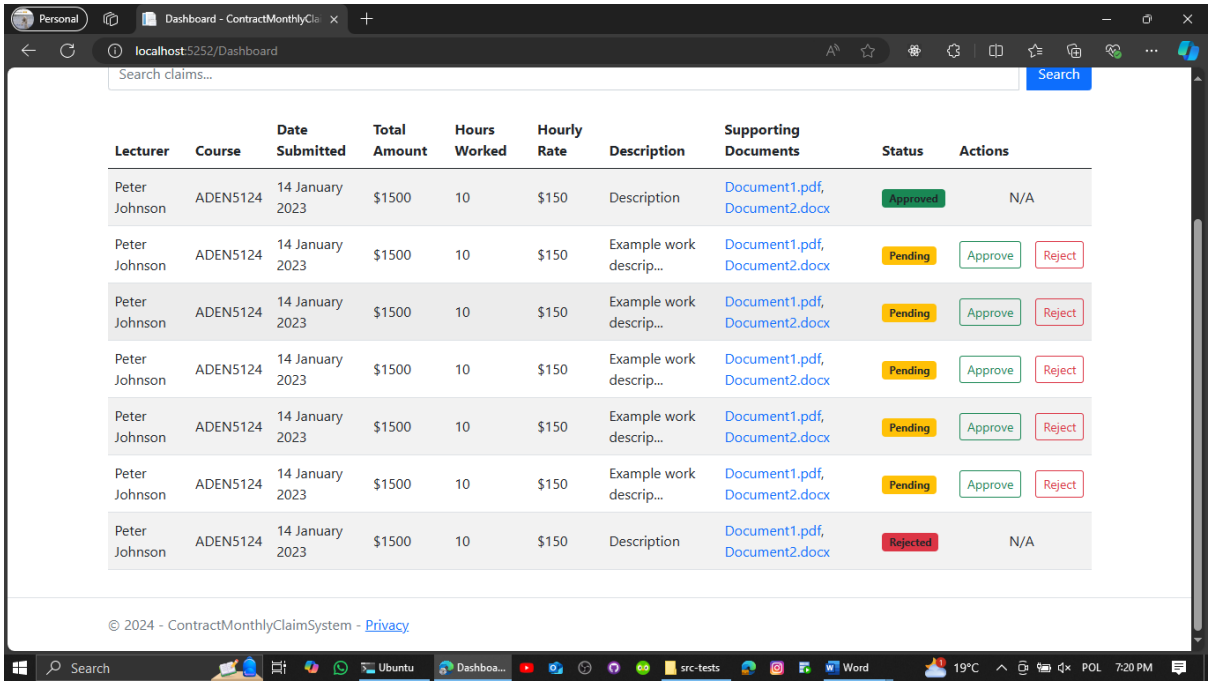


Ryan Devon Millard
st10383326@imconnect.edu.za

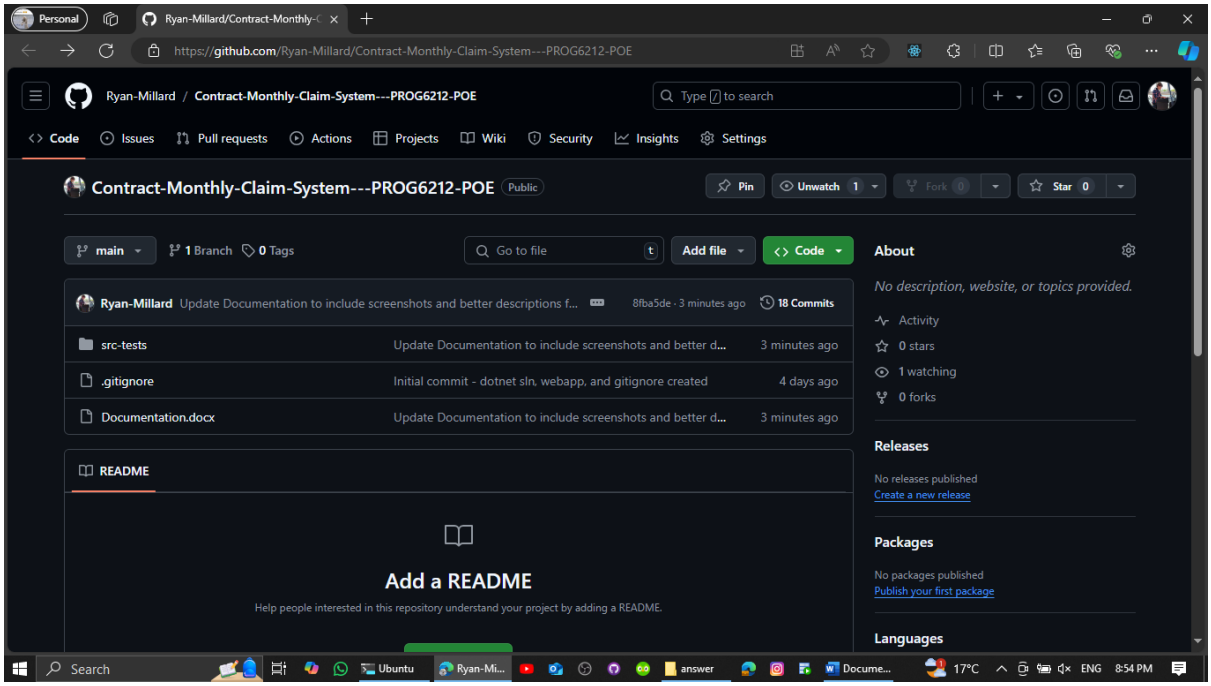
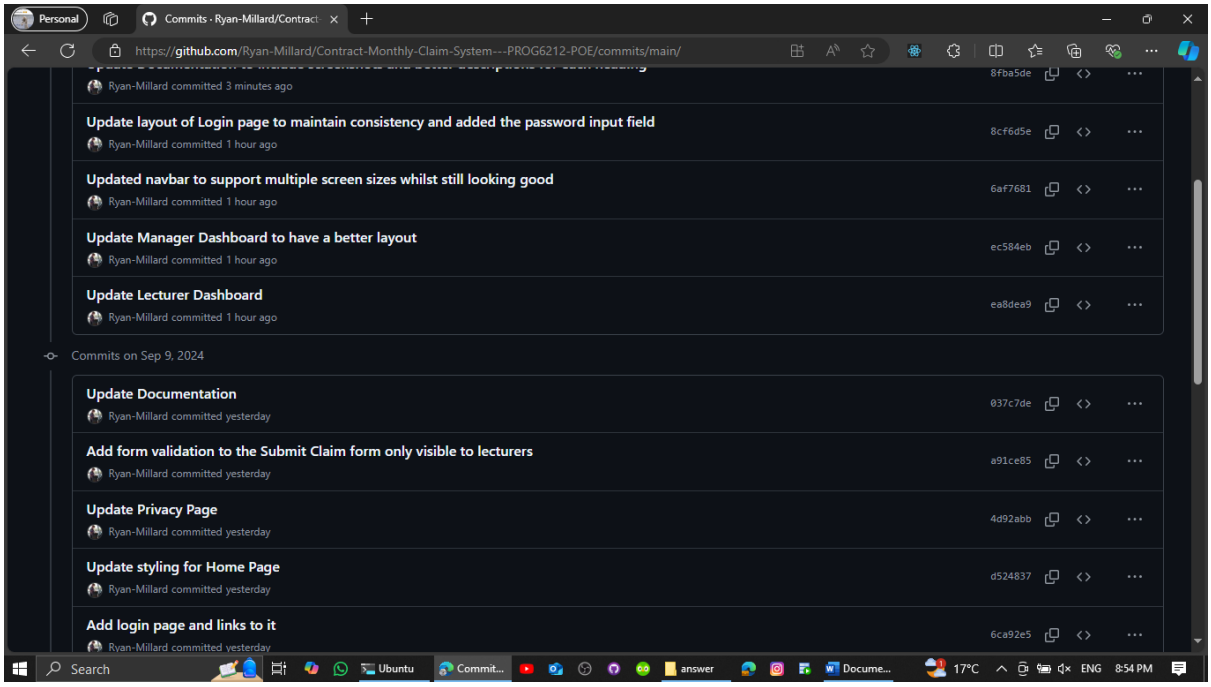

Personal
Dashboard - ContractMonthlyCla
localhost:5252/Dashboard
Submitted Claims
Course
Date Submitted
Total Amount
Hours Worked
Hourly Rate
Description
Supporting Documents
Status
ASPN1035
23 February 2022
R500.00
40
R125
Lectures from the beginning of the year.
Document1.pdf, Document2.docx
Approved
ADEN5123
14 January 2023
R500.00
40
R125
Example work descrip...
Document1.pdf, Document2.docx
Pending
ADEN5123
14 January 2023
R500.00
40
R125
Example work descrip...
Document1.pdf, Document2.docx
Pending
ADEN5123
14 January 2023
R500.00
40
R125
Example work descrip...
Document1.pdf, Document2.docx
Pending
ADEN5123
14 January 2023
R500.00
40
R125
Example work descrip...
Document1.pdf, Document2.docx
Pending
ADEN5123
14 January 2023
R500.00
40
R125
Example work descrip...
Document1.pdf, Document2.docx
Pending
ASPN1035
23 March 2024
R500.00
40
R125
Lectures from the beginning of the year.
Document1.pdf, Document2.docx
Rejected
© 2024 - ContractMonthlyClaimSystem - Privacy
Search
Ubuntu
Dashboa...
src-tests
Word
19°C
POL
7:18 PM

- **Coordinator/Manager View:**
  - Overview of pending claims requiring approval.
  - Detailed view of individual claims with approve/reject options.
  - Reporting tools for analysing claim patterns.




Personal
Dashboard - ContractMonthlyCla
localhost:5252/Dashboard
Search claims...
Search
Lecturer | Course | Date Submitted | Total Amount | Hours Worked | Hourly Rate | Description | Supporting Documents | Status | Actions
Peter Johnson | ADEN5124 | 14 January 2023 | $1500 | 10 | $150 | Description | Document1.pdf, Document2.docx | Approved | N/A
Peter Johnson | ADEN5124 | 14 January 2023 | $1500 | 10 | $150 | Example work descrip... | Document1.pdf, Document2.docx | Pending | Approve Reject
Peter Johnson | ADEN5124 | 14 January 2023 | $1500 | 10 | $150 | Example work descrip... | Document1.pdf, Document2.docx | Pending | Approve Reject
Peter Johnson | ADEN5124 | 14 January 2023 | $1500 | 10 | $150 | Example work descrip... | Document1.pdf, Document2.docx | Pending | Approve Reject
Peter Johnson | ADEN5124 | 14 January 2023 | $1500 | 10 | $150 | Example work descrip... | Document1.pdf, Document2.docx | Pending | Approve Reject
Peter Johnson | ADEN5124 | 14 January 2023 | $1500 | 10 | $150 | Example work descrip... | Document1.pdf, Document2.docx | Pending | Approve Reject
Peter Johnson | ADEN5124 | 14 January 2023 | $1500 | 10 | $150 | Description | Document1.pdf, Document2.docx | Rejected | N/A
© 2024 - ContractMonthlyClaimSystem - Privacy
Search
Ubuntu
Dashboa...
src-tests
Word
19°C
POL
7:20 PM

- **Consistent navigation:**
    - Minimal top navigation bar.
- **Clean, modern and consistent aesthetic:**
    - Bootstrap for consistent styling and layout.
    - Razor Pages for reusable code.

GitHub Repository

Ryan-Millard/Contract-Monthly-Claim-System---PROG6212-POE (github.com)