

STUDY INFORMATION SYSTEM

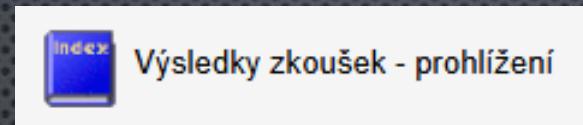
-- EXA1 --

TIMOTEJ KOTLÍN & SARA ALIĆ-EKINOVIC

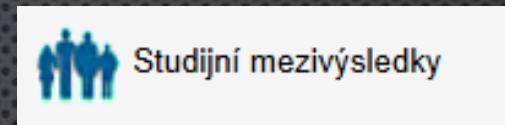
SYSTEM DESCRIPTION :

- **Topic**

- **Exams (EXA)**



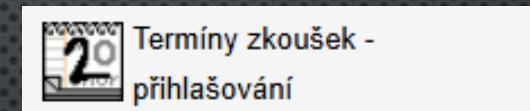
Výsledky zkoušek - prohlížení



Studijní mezičíselky

- **Stakeholders**

- Students
 - Teachers
 - Managers



Termíny zkoušek -
přihlašování

- **Feature areas**

- Awarding credits (by teachers)
 - Exam terms management and room reservation (by teachers)
 - Registering for the exam terms (by students)
 - Communication with the registered students (by students and teachers)
 - Awarding grades (by teachers)
 - Viewing results (by students and teachers)
 - Statistical reports going back to history (by managers and teachers)

FEATURES :

Tryndo225 opened on Oct 6

Owner ...

As a student registered in the system,
I want to be able to register into an exam through the system.
So that I can modify my exam schedule easily from anywhere.

Tryndo225 opened on Oct 6 · edited by Tryndo225

Edits ... Owner ...

As a professor registered in the system who has scheduled an exam,
I want to be able make a reservation for a classroom for the exam.

So that I am guaranteed that it is free and available at the date and time of the exam.

aliekins opened on Oct 6

Collaborator ...

As a professor registered in the system teaching a class,
For each of the students taking my course **I want** to be able to flag whether they have acquired the course's credit or not.
So that I can easily track who has credit and **so that** I don't have to manually inform the students one at the time.

aliekins opened on Oct 7

Collaborator ...

As a teacher, leading a course, **I want** to be able to assign and modify students' course grades.
So that the students may be timely notified and updated of their grade status.

STUDENT EXAM REGISTRATION – FEATURE 01 :



Tryndo225 opened on Oct 6

Owner ...

As a student registered in the system,
I want to be able to register into an exam through the system.
So that I can modify my exam schedule easily from anywhere.

aliekins opened on Oct 7 · edited by aliekins

Edits Collaborator ...

Pre-conditions:

- student has access and is logged into the school system with his school assigned email/ID

Main flow:

- Student navigates to the exam sign in page.
- User provides information to the system (through the set UI) about the course he wishes to look up examination terms for.
- The system parses this information by looking for the course in the "course database".
- After the course was found, the system navigates to the course specific exam term schedule for this year, within the "examination timetable db".
- The system displays the found information to the student.
- The student chooses and selects the exam term which suits him most, then proceeds to confirm the choice by pressing the sign in button.
- System verification (steps)
 - First, the system checks that the student in fact is signed into the course he has selected, within the "student info db".
 - The system checks, by using "student info db", that the student will not exceed the maximum registration count.
 - Student does exceed the maximum registration count - halt the process.
 - Student does not exceed the maximum registration count - go to the next step.
 - Additionally, it ensures the student is not already registered for the same subject to a different term, by checking the "examination timetable db".
 - Student is registered to a different term of the same subject - request confirmation to continue registration and (after the registration is confirmed, step 8) sign out of the previous exam term.
 - Student is not registered to a different term of the same subject - go to the next step.

- Then, the system requests the "course db" for the information, whether the requirement for signing in the exam is having the course credit acquired.
 - The course requires the student to have course credit acquired - the system check the "student info db" to ensure the student has credit for this course.
 - The course does not require the student to have course credit acquired - the check passes automatically.
- The system is signaled to check for capacity availability of the specific exam term within the "examination timetable db".
- After confirming there is available space, the system updates the list of students in the "examination timetable db" for this exam term.
- The system updates the list of signed examinations the student has (overall and for the specific course) within the "student info db".
- When the system verifies the registration, it notifies the student that the registration was successful.
- The student receives the notification of registration confirmation.

Alternate flow:

- a. The course was not found - the student is notified by the system of the nature of the mistake and the page goes back to the state before step 2
- b. If any step of verification fails - the student is notified by the system of the nature of the mistake and the page goes back to the state before step 5

Post-conditions:

- The student is registered to an exam term of his choosing.

Related User Story: #1

RESERVATION OF EXAM PREMISES – FEATURE 02 :

Tryndo225 opened on Oct 6 · edited by Tryndo225

Edits ▾ Owner ⋮

**As a professor registered in the system who has scheduled an exam,
I want to be able make a reservation for a classroom for the exam.**

So that I am guaranteed that it is free and available at the date and time of the exam.



Tryndo225 opened on Oct 6 · edited by Tryndo225

Edits ▾ Owner ⋮

Preconditions:

- The professor leading the course (the *User*) is registered in the system.
- The User teaches a course that already has at least one scheduled exam term.
- The User is authenticated and has sufficient permissions to modify exam term details.
- The exam term exists in the examination timetable and is currently editable.

Main Flow:

1. The User opens a specific exam term from the list of scheduled terms.
2. The system loads the exam term data and opens the exam editor window.
3. The User selects the *Room / Location* field to modify the exam's location.
4. The system checks the database for school-owned classrooms available during the exam term's time window.
5. The system displays a list of available classrooms to the User.
6. The User selects a preferred classroom from the displayed list.
7. The system reserves the selected classroom by marking it unavailable during the exam term and updates the relevant databases.
8. The system confirms to the User that the classroom has been successfully assigned.

Alternate Flow:

- 5b. The User selects "Other" instead of a school-owned classroom.
- 6b. The system prompts the User to enter or choose a custom location.
- 7b. The system updates the exam term's location with the provided custom value.
- 8b. The system informs the User that the location update was successful.

Postconditions:

- The exam term has an updated and valid location (school classroom or custom).
- The corresponding database records have been updated accordingly.

Related User Story: #2

RESPONSIBILITIES - FEATURE 01 :

aliekins opened on Oct 8

Collaborator ...

- Serve the exam terms' sign-in page
- Ensure the student is authenticated
- Show the course lookup form

Related Feature Breakdown: #6

Related Step Number: 1.

R01 - Exam Term Sign-In Page And Authentication Guard

aliekins opened on Oct 8

Collaborator ...

- Capture the input from the UI
- Validate and sanitize the entered course identifier/name/partial name

Related Feature Breakdown: #6

Related Step Number: 2.

R02 - Course Lookup Input Handling

aliekins opened on Oct 8 · edited by aliekins

Edits ▾ Collaborator ...

- Search the "course db" for the course (code/name/year)
- Handle "course not found" (⌚ [R08 - Outcome Notification/Alerting Responsibilities #14](#))

Related Feature Breakdown: #6

Related Step Number: 3.

R03 - Course Resolution In Course DB

aliekins opened on Oct 8

Collaborator ...

- Query the timetable for this year's terms of the found course
- Prepare data needed for display (dates, capacity, location)

Related Feature Breakdown: #6

Related Step Number: 4.

R04 - Term Schedule Retrieval

aliekins opened on Oct 8

Collaborator ...

- Render the list of exam terms and their details
- Present controls to select a term and confirm

Related Feature Breakdown: #6

Related Step Number: 5.

R05 - Exam Term(s) Presentation

aliekins opened on Oct 8

- Record/cache the selected term and explicit confirmation to register

Related Feature Breakdown: #6

Related Step Number: 6.

R06 - Exam Term Selection Capture

aliekins opened on Oct 8 · edited by aliekins

Edits ▾ Collaborator ...

- Enrollment check "student info db" : verify the student is enrolled in the course; stop and inform if not (⌚ R08 - Outcome Notification/Alerting Responsibilities #14)
- Max registrations "student info db" : compare current count with limit; halt if exceeded (⌚ R08 - Outcome Notification/Alerting Responsibilities #14)
- Conflict check "exam timetable db" : detect registration to another term of the same subject; if found, ask for confirmation and plan deregistration of the previous term upon success (TODO - deregistration responsibility link)
- Credit requirement "course db" - "student info db" : read whether credit is required; if yes, confirm the student has it
- Capacity check "exam timetable db" : verify available seats; protect against overbooking (lock/hold)

Related Feature Breakdown: #6

Related Step Number: 7.

R07 - Registration/Enrolment Verification

aliekins opened on Oct 8

Collaborator ...

- Recognize the process has ended (un)successfully or has been halted
- Generate appropriate message/alert/notification
- Trigger/show/send the alert/notification to the user/student (dashboard/email/mobile)

Related Feature Breakdown: #6

Related Step Number: 8.

R08 - Outcome Notification/Alerting Responsibilities

aliekins opened on Oct 8

Collaborator ...

- Record/log delivery status

Related Feature Breakdown: #6

Related Step Number: 9.

R09 - Notification/Alert Logging

RESPONSIBILITIES - FEATURE 02 :

Tryndo225 opened 25 minutes ago · edited by Tryndo225

Edits · Owner · ...

- Load and display the selected exam term's details.
- Verify the User has permission to edit the term.

Related Feature Breakdown: #4

Related Step Number: 1 - 2.

R10 - Exam Term Editor Initialization

Owner · ...

Tryndo225 opened 26 minutes ago

- Detect User interaction with the location field.
- Open the room-selection interface.

Related Feature Breakdown: #4

Related Step Number: 3.

R11 - Location Field Activation

Tryndo225 opened 27 minutes ago

Owner · ...

- Retrieve all school-owned classrooms from the database.
- Filter out classrooms unavailable for the exam term's time window.

Related Feature Breakdown: #4

Related Step Number: 4.

R12 - Classroom Availability Lookup

Owner · ...

Tryndo225 opened 28 minutes ago

- Display the list of available classrooms.
- Include the "Other" option for custom location entry.

Related Feature Breakdown: #4

Related Step Number: 5.

R13 - Room Option Presentation

Tryndo225 opened 28 minutes ago

Owner · ...

- Capture the User's selected classroom choice.
- Validate that the room is still available.

Related Feature Breakdown: #4

Related Step Number: 6.

R14 - Classroom Selection Handling

Owner · ...

Tryndo225 opened 31 minutes ago

Owner ...

- Mark the selected classroom as reserved for the exam term.
- Update the exam term's location in the database.

Related Feature Breakdown: #4

Related Step Number: 7.

R15 - Classroom Reservation & Persistence

Tryndo225 opened 31 minutes ago

Owner ...

- Notify the User that the classroom or custom location update was successful.

Related Feature Breakdown: #4

Related Step Number: 8 / 8b.

R17 - Success Notification

Tryndo225 opened 35 minutes ago · edited by Tryndo225

Edits ▾ Owner ...

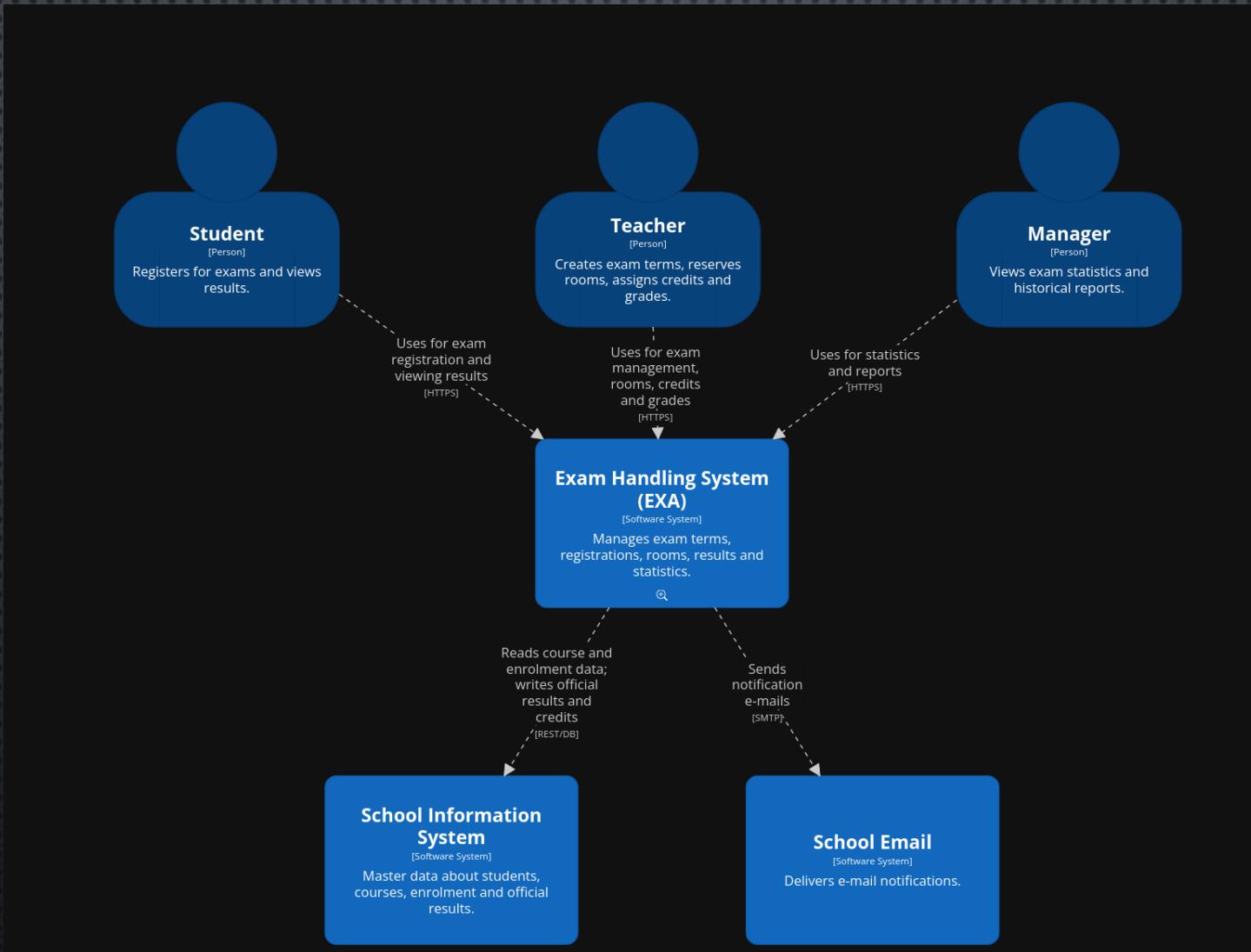
- Refresh the editor view after the location change.
- Ensure the updated room or custom location is displayed consistently across all UI sections.

Related Feature Breakdown: #4

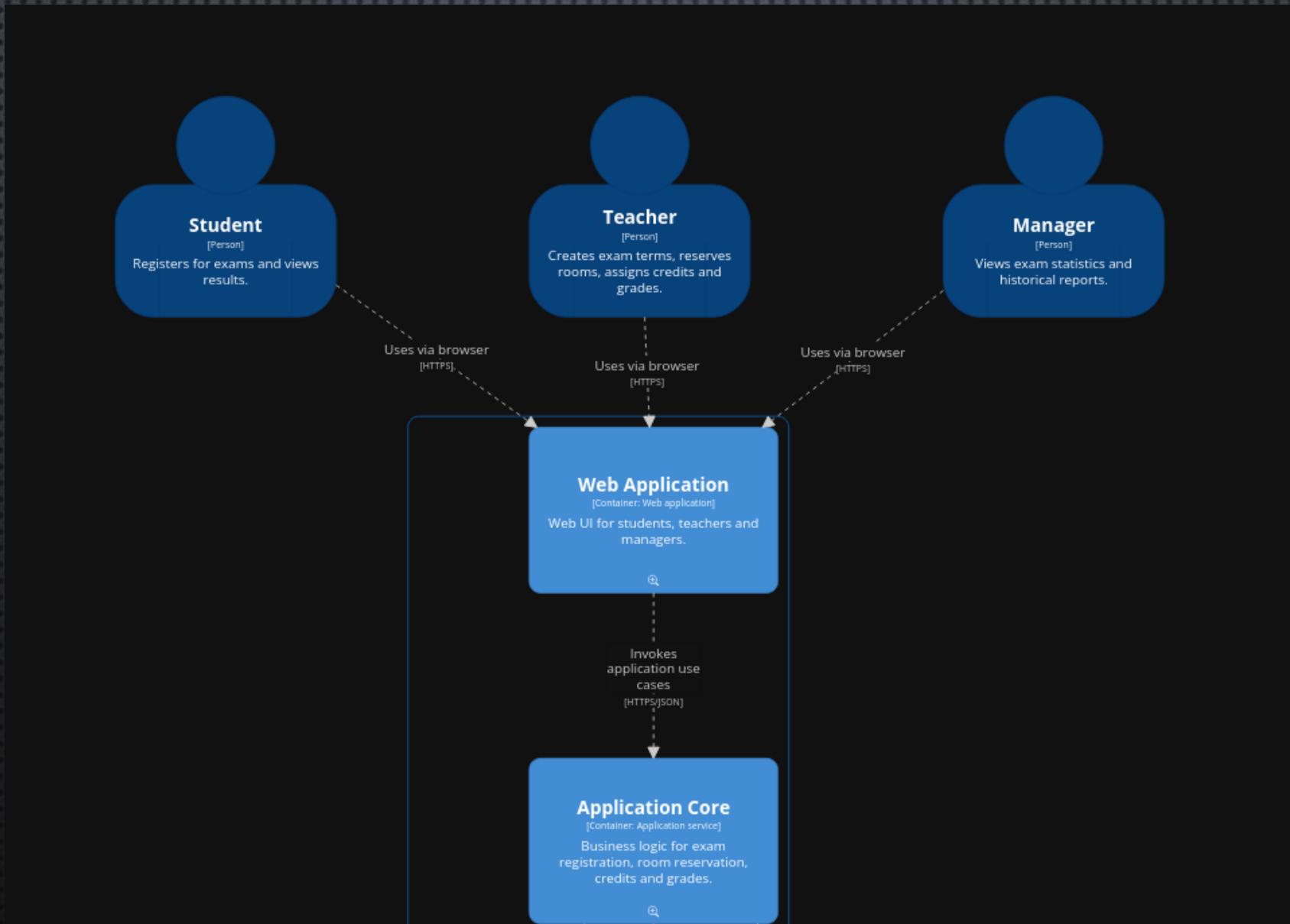
Related Step Number: 8 / 8b.

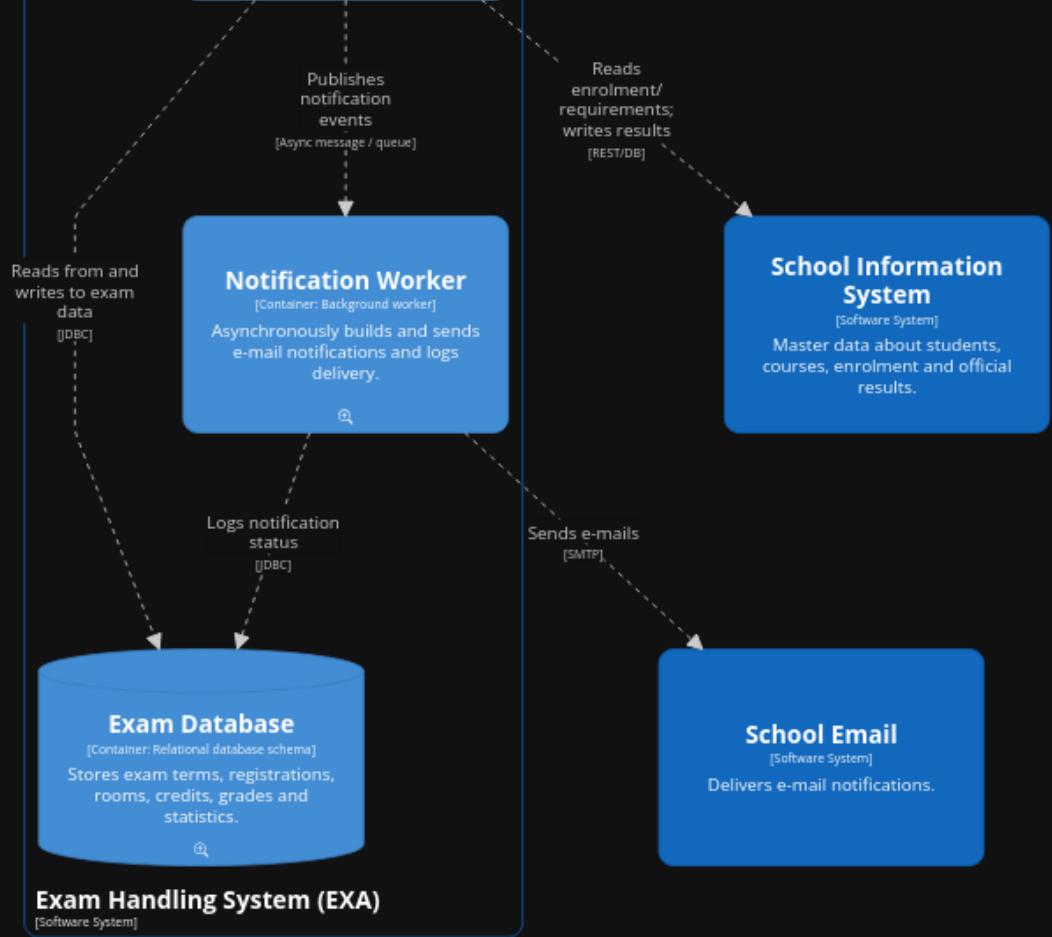
R18 - Editor State Refresh & UI Consistency

L1 DIAGRAM – C4:

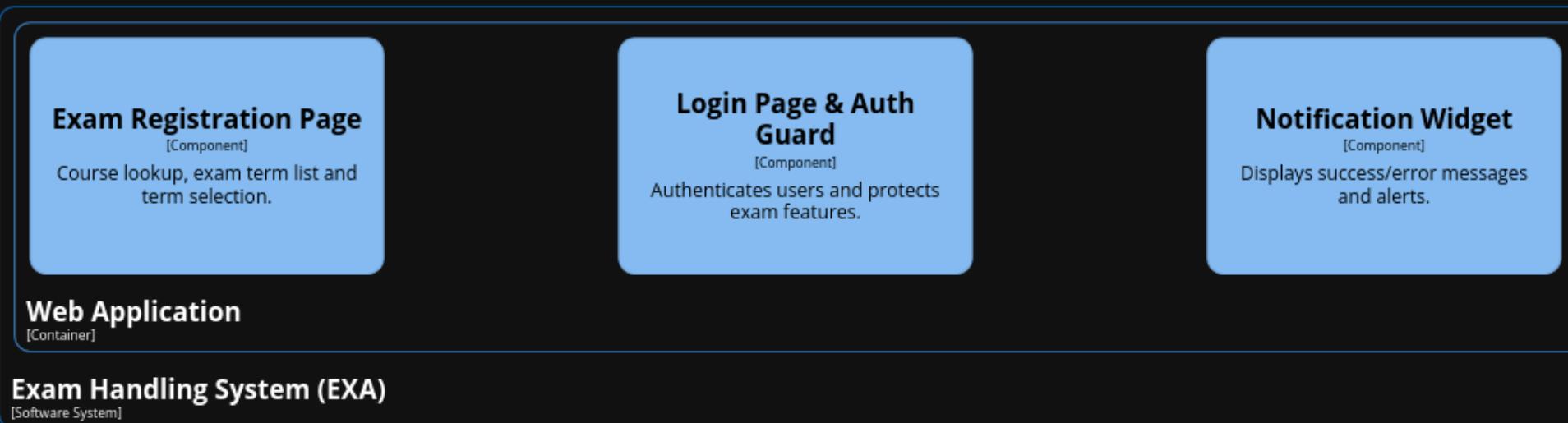


L2 DIAGRAM – C4:





L3 DIAGRAM - WEB APPLICATION - C4:



Component View: Exam Handling System (EXA) - Web Application

Monday, November 24, 2025 at 3:23 AM Central European Standard Time

Results & History Page

[Component]

Shows exam outcomes, grades and statistics.

Room Reservation Page

[Component]

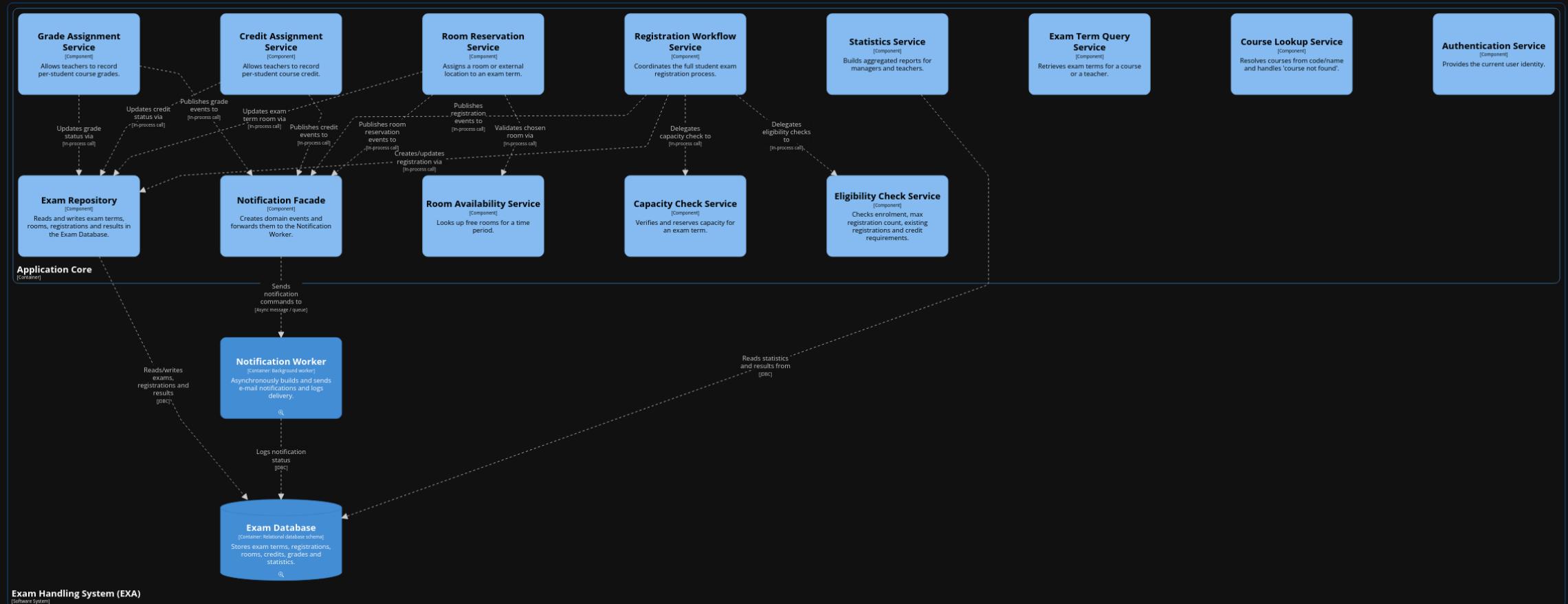
Displays available rooms and 'Other location' selector.

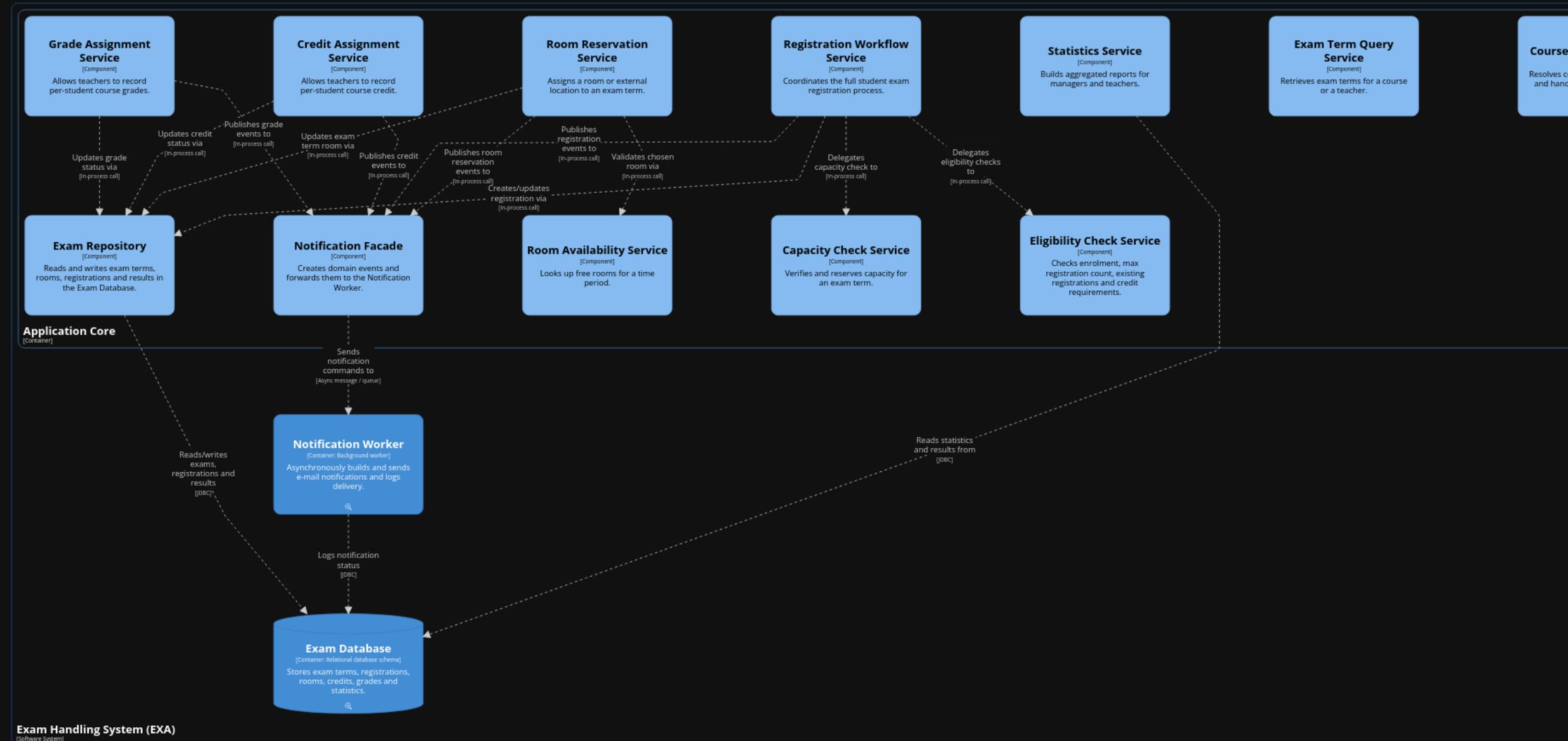
Exam Term Management Page

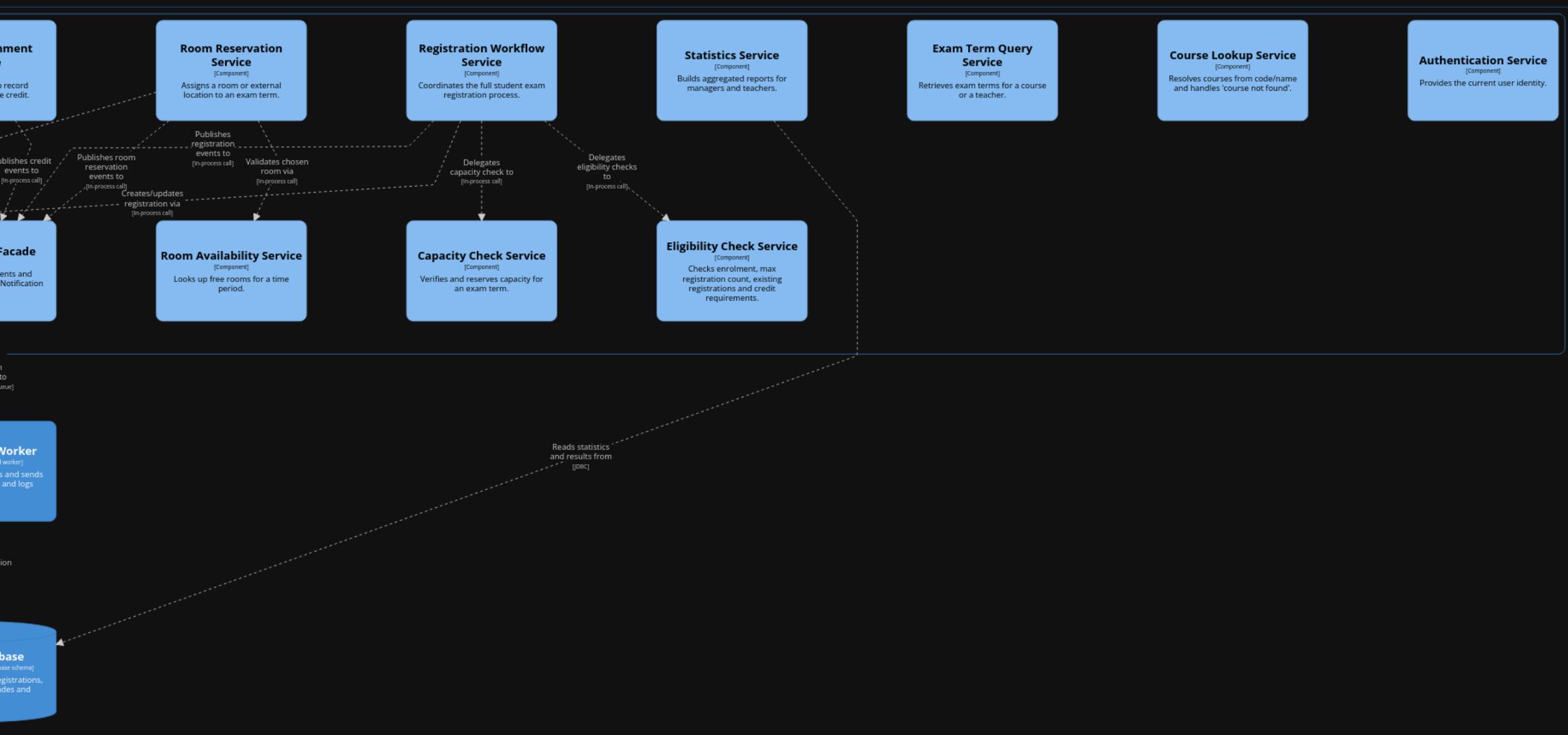
[Component]

Shows teacher's exam terms and opens the editor.

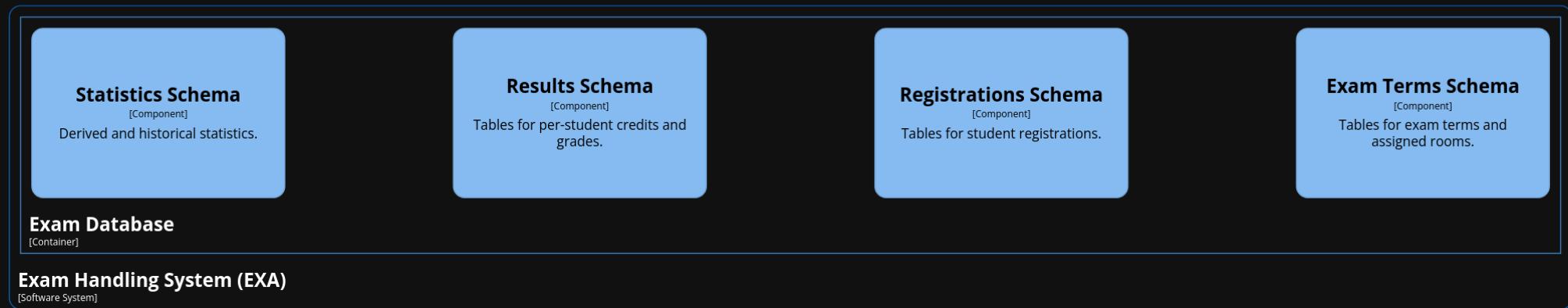
L3 DIAGRAM – APPLICATION CORE - C4:





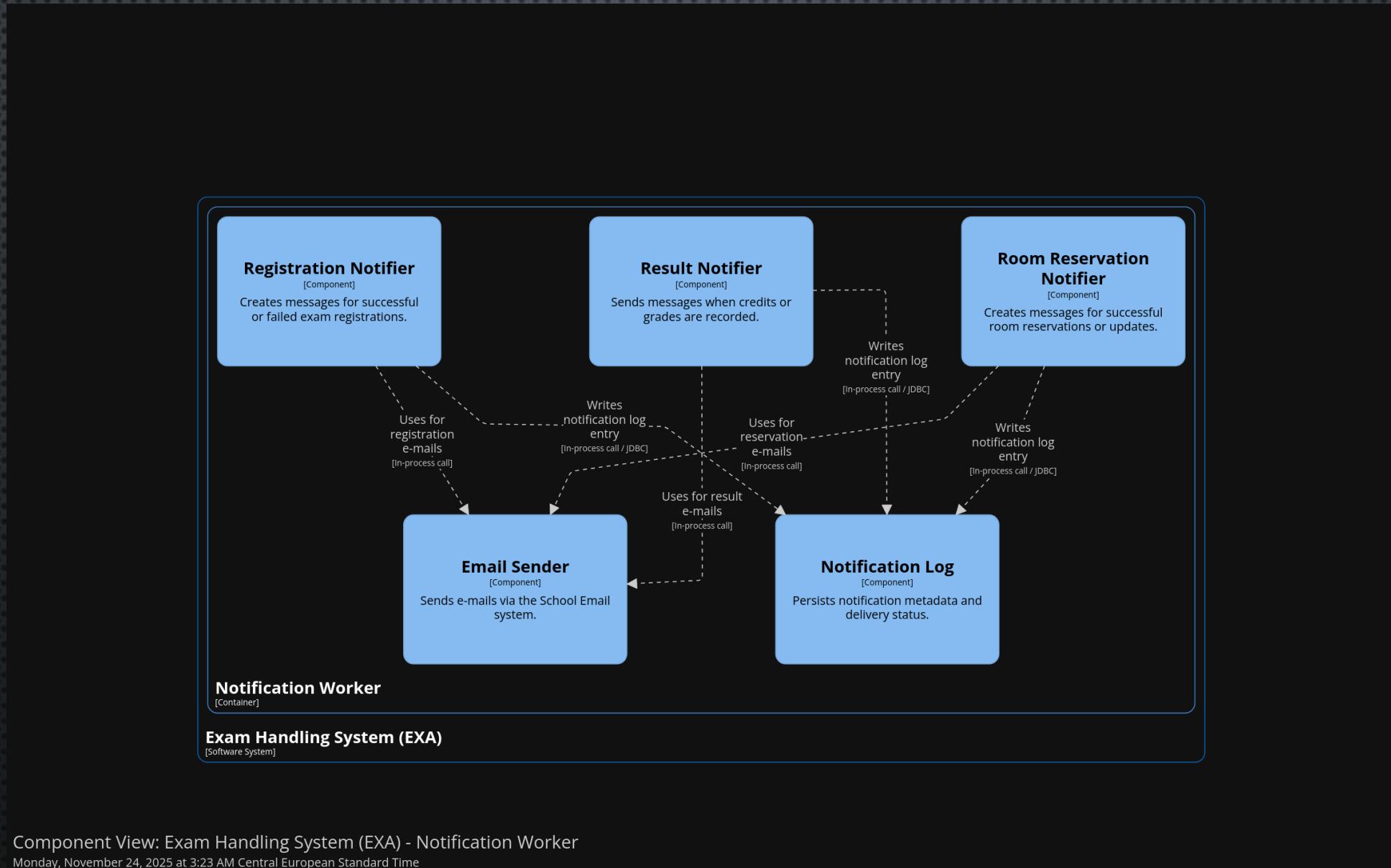


L3 DIAGRAM – EXAM DATABASE - C4:

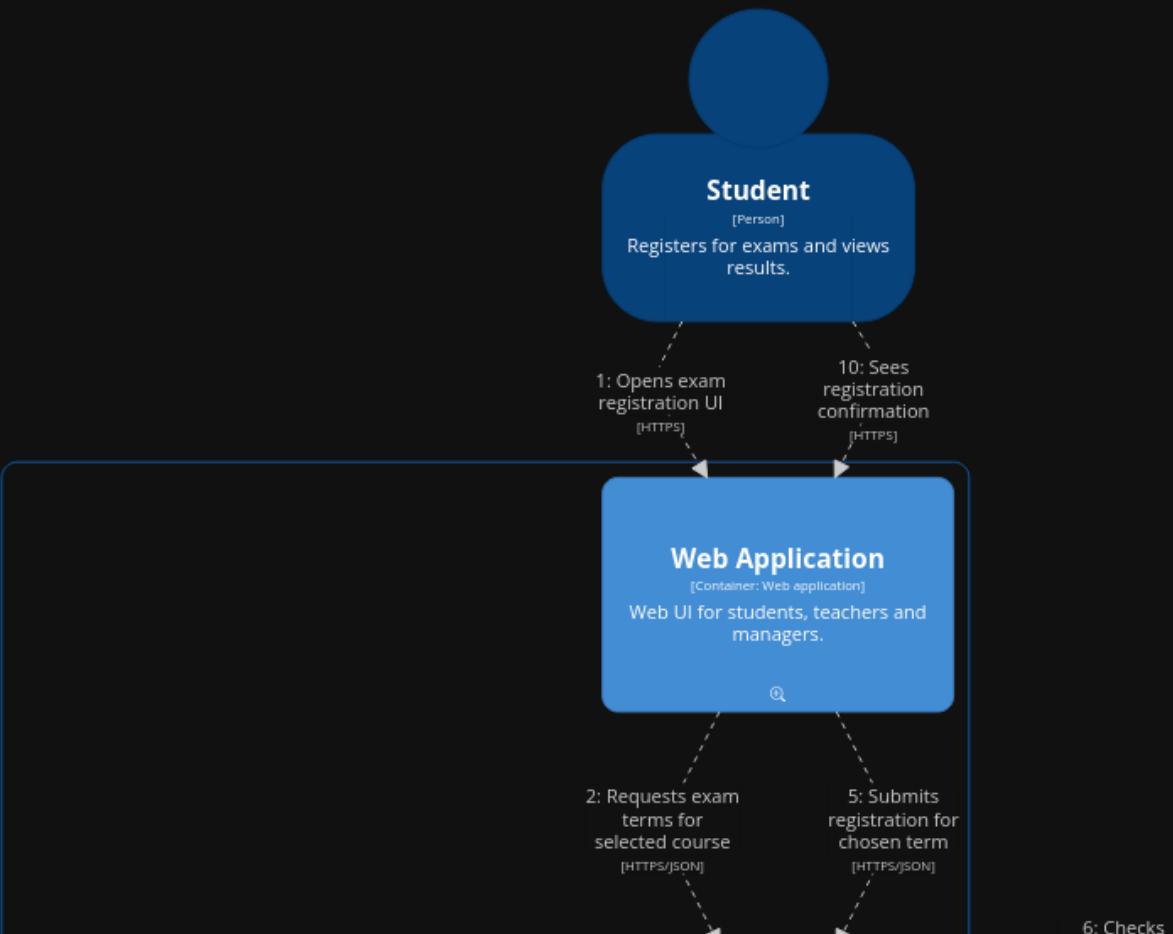


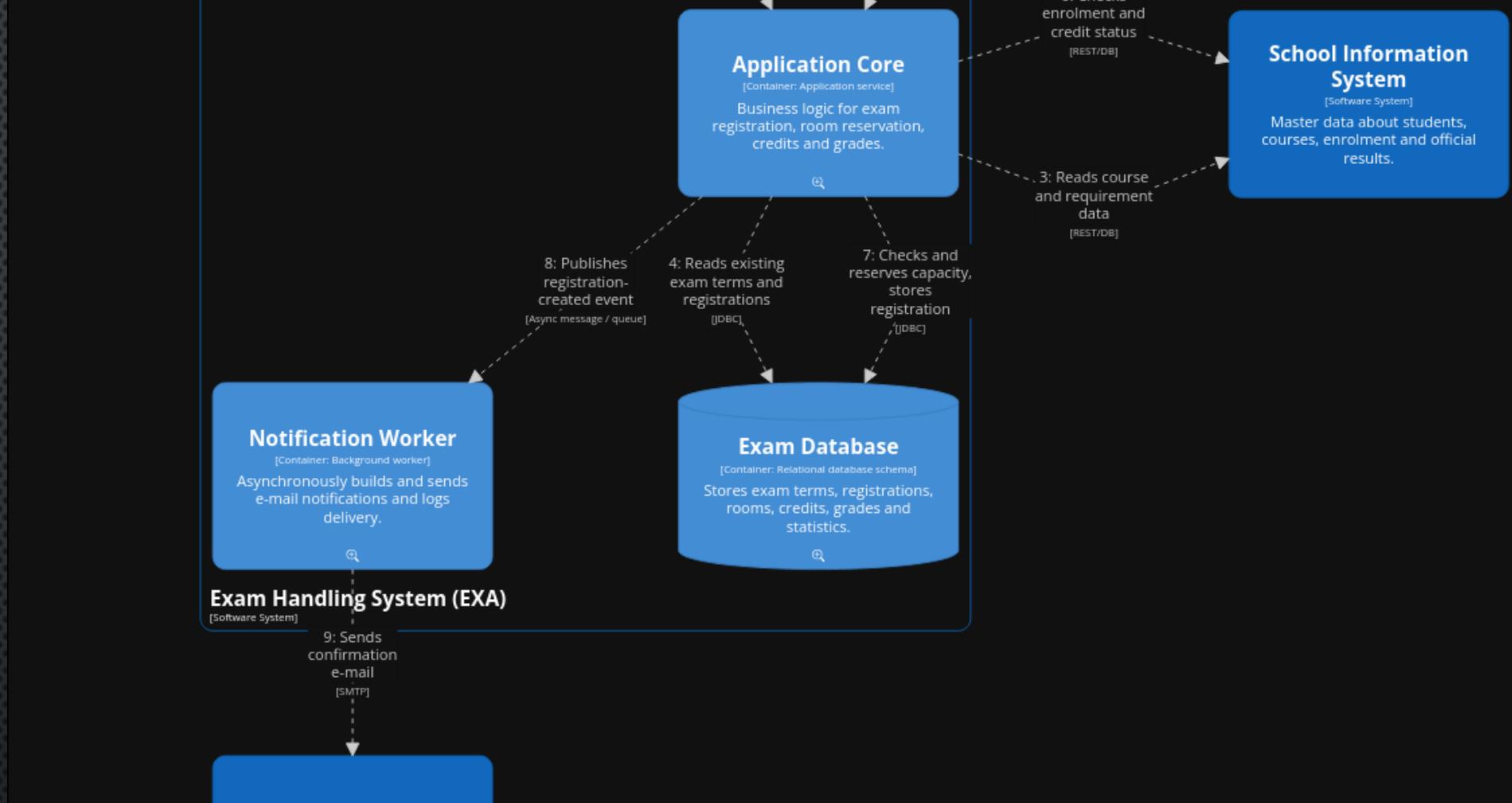
Component View: Exam Handling System (EXA) - Exam Database
Monday, November 24, 2025 at 3:23 AM Central European Standard Time

L3 DIAGRAM – NOTIFICATION WORKER - C4:



FEATURE 01 FLOW - C4:

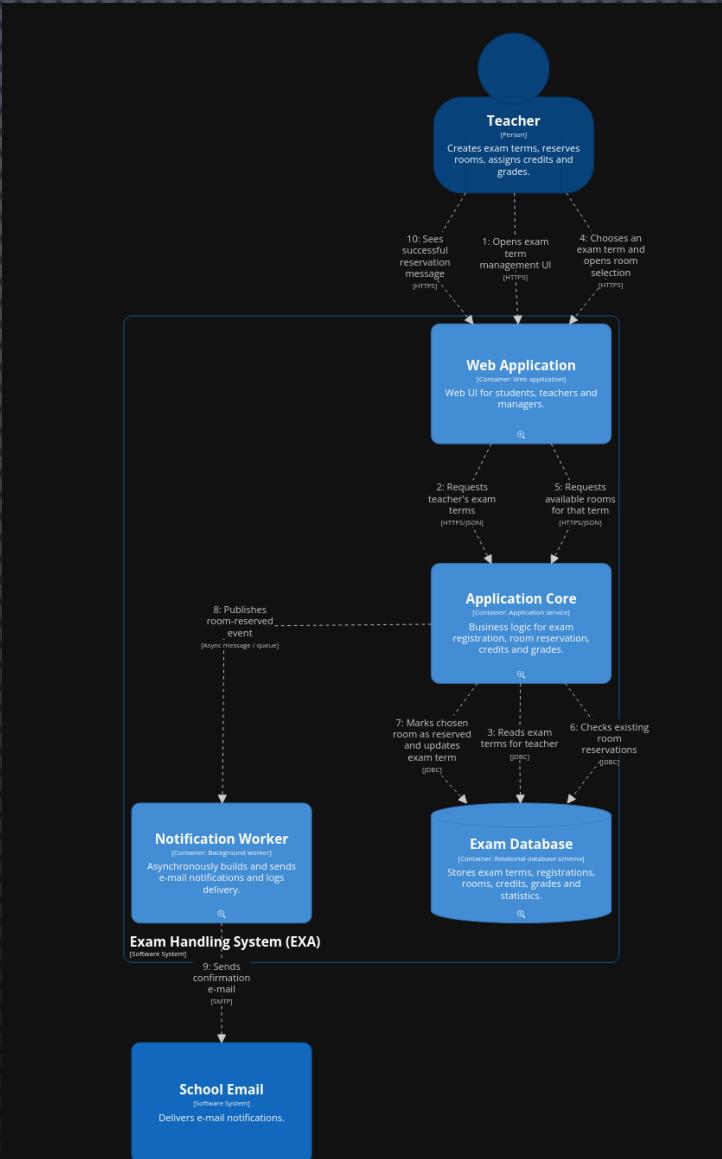


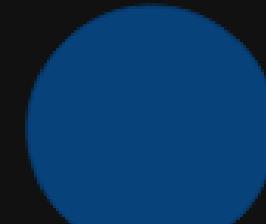


Feature: Student exam registration

Monday, November 24, 2025 at 3:23 AM Central European Standard Time

FEATURE 02 FLOW - C4:





Teacher

[Person]

Creates exam terms, reserves rooms, assigns credits and grades.

10: Sees successful reservation message
[HTTPS]

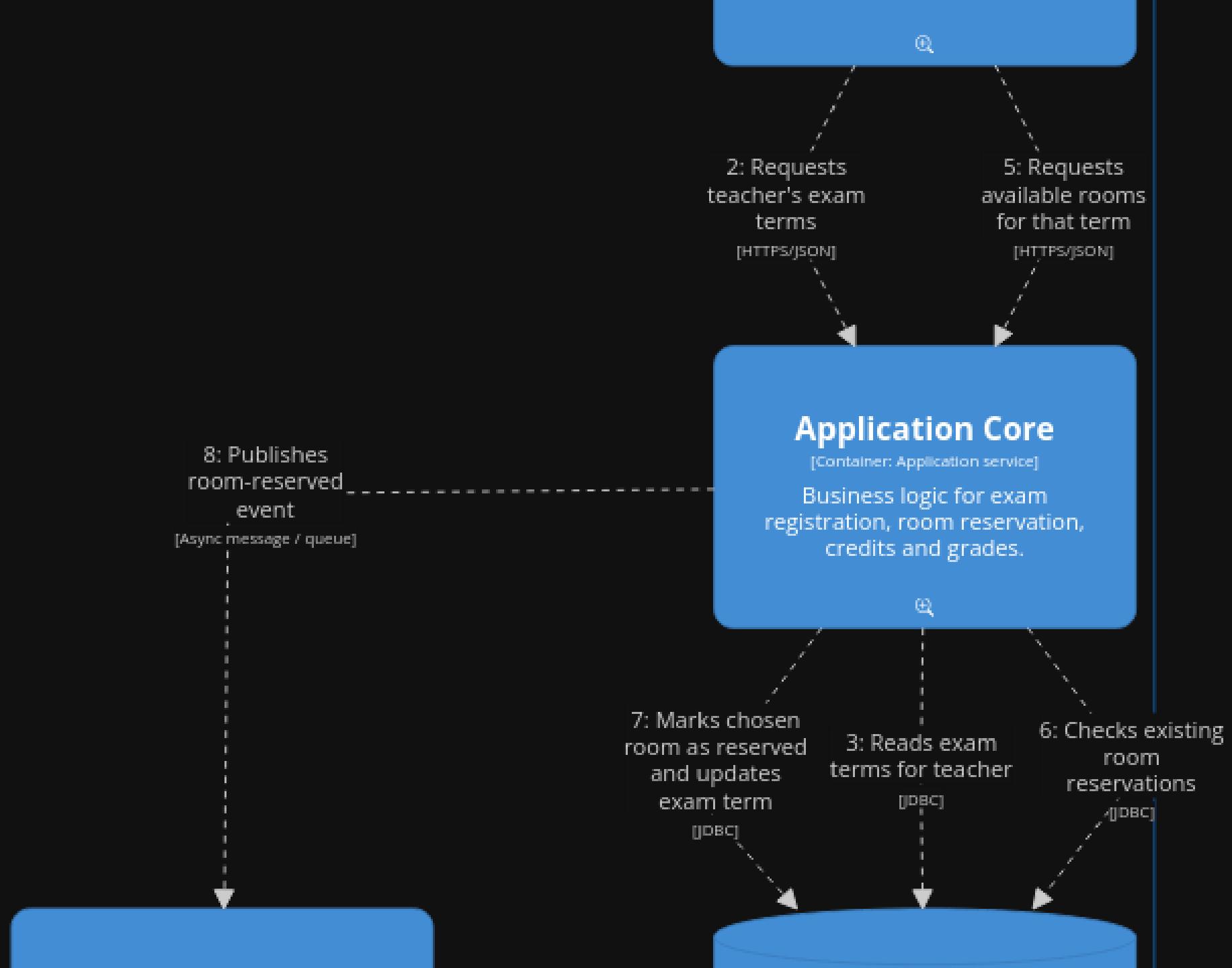
1: Opens exam term management UI
[HTTPS]

4: Chooses an exam term and opens room selection
[HTTPS]

Web Application

[Container: Web application]

Web UI for students, teachers and managers.



Notification Worker

[Container: Background worker]

Asynchronously builds and sends e-mail notifications and logs delivery.



Exam Database

[Container: Relational database schema]

Stores exam terms, registrations, rooms, credits, grades and statistics.



Exam Handling System (EXA)

[Software System]

9: Sends confirmation e-mail
[SMTP]

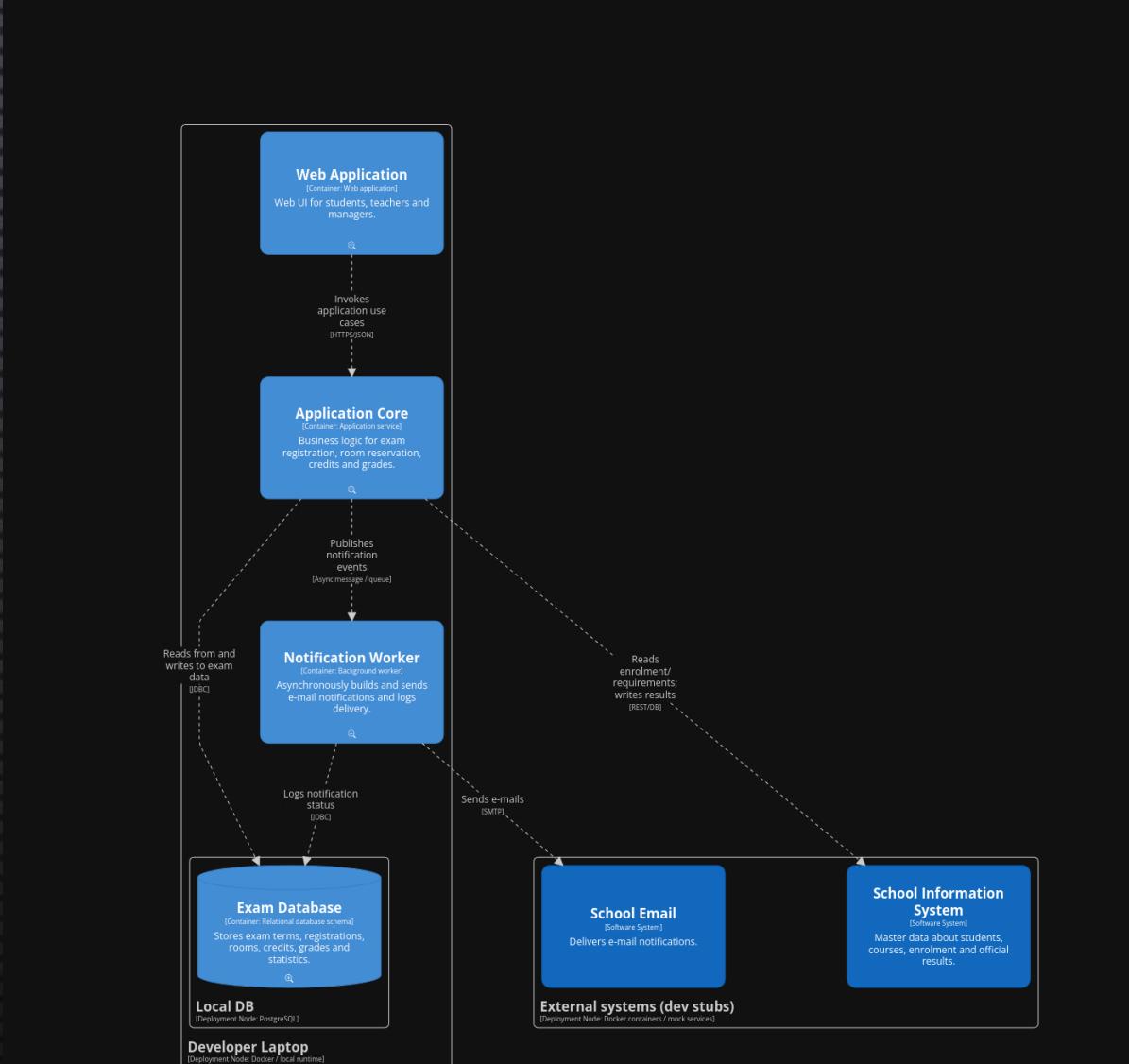


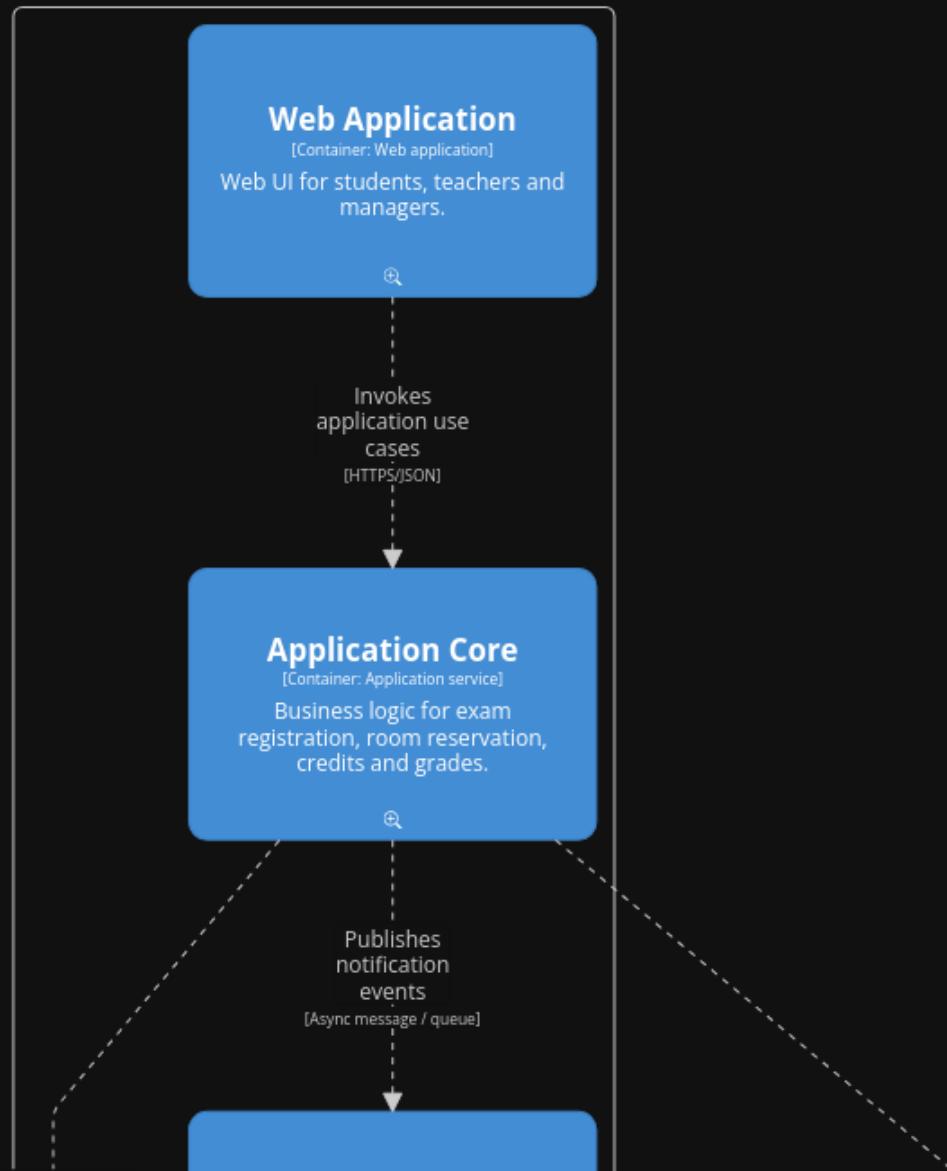
School Email

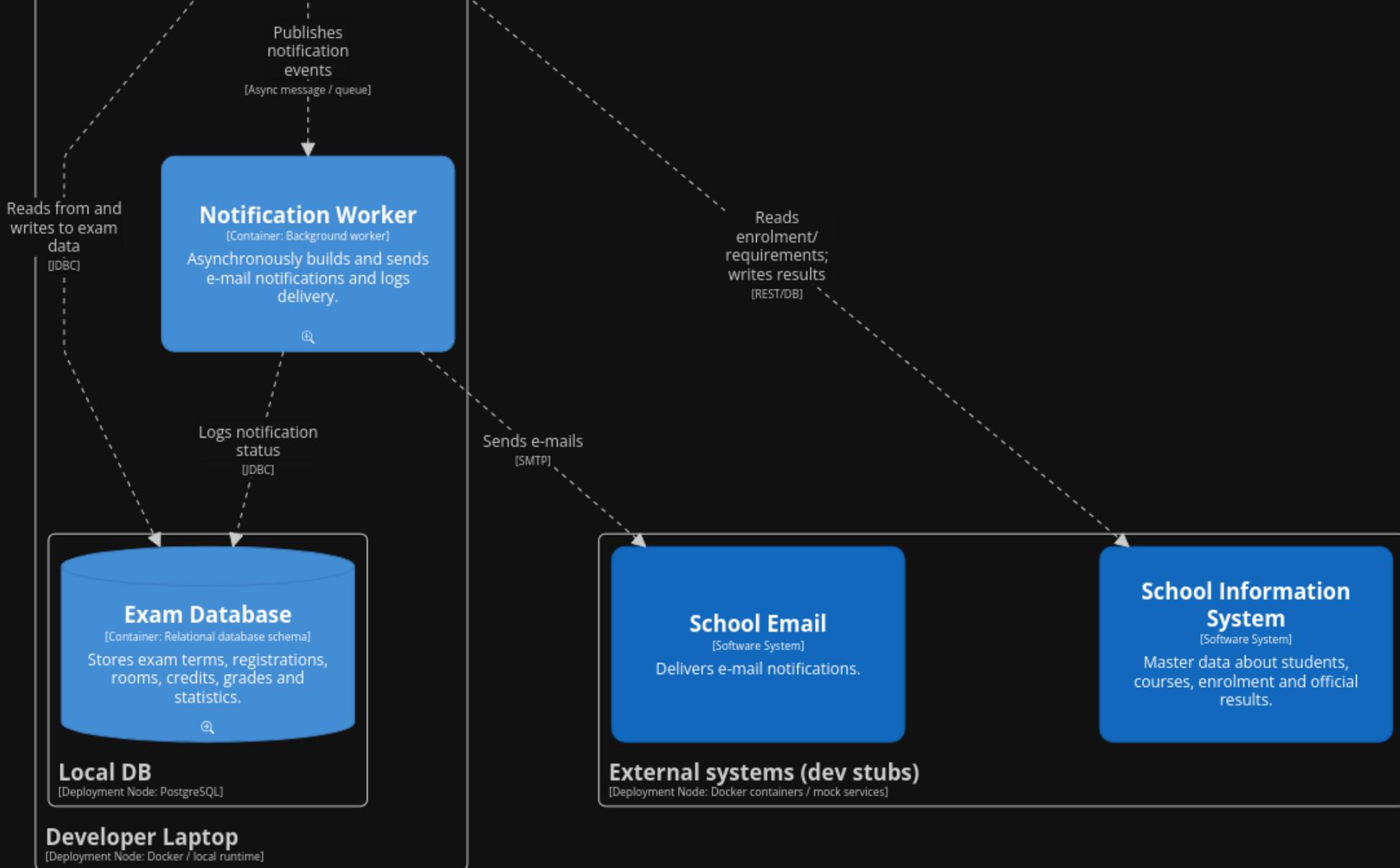
[Software System]

Delivers e-mail notifications.

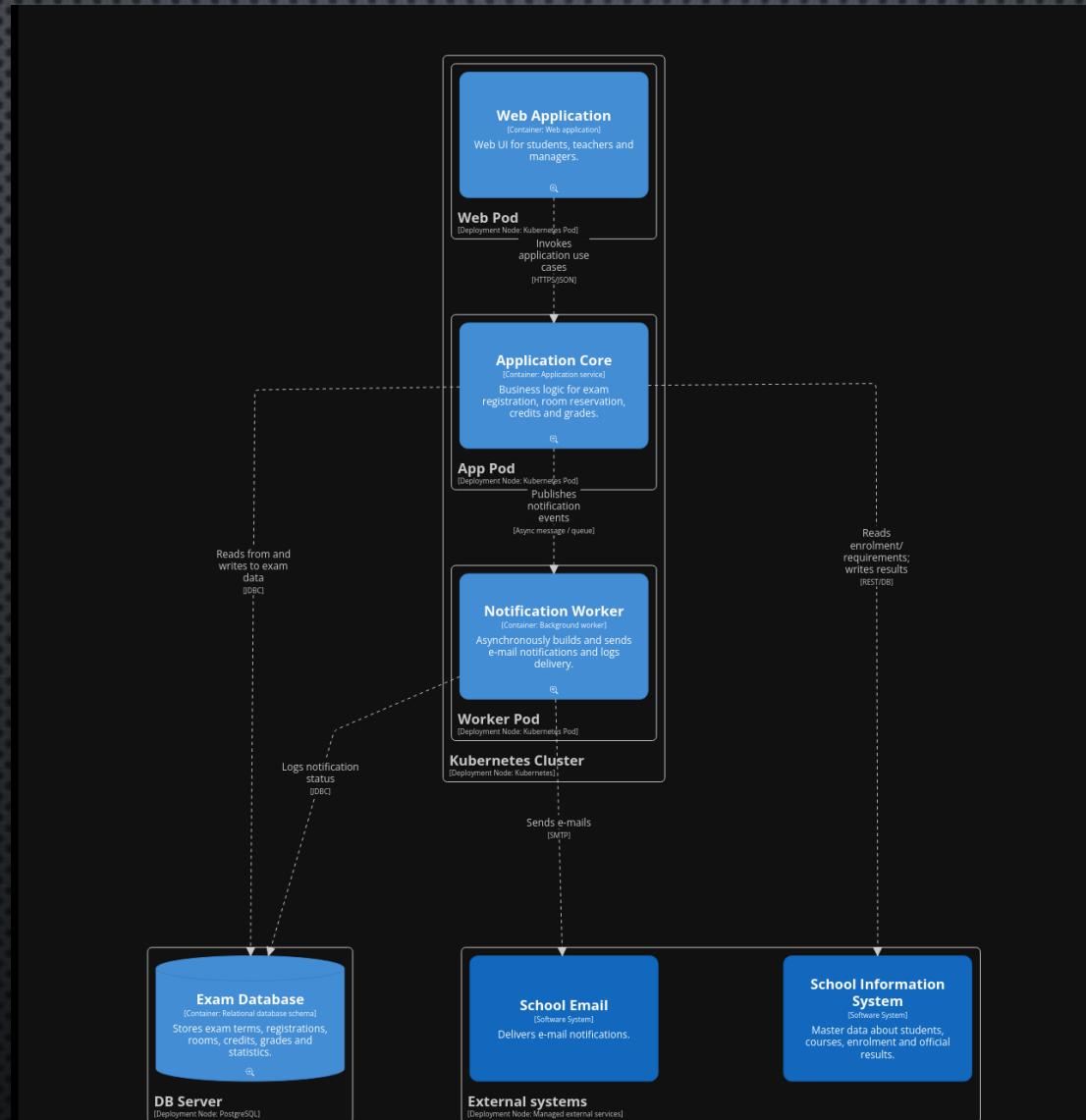
DEPLOYMENT (DEVELOPMENT) - C4:

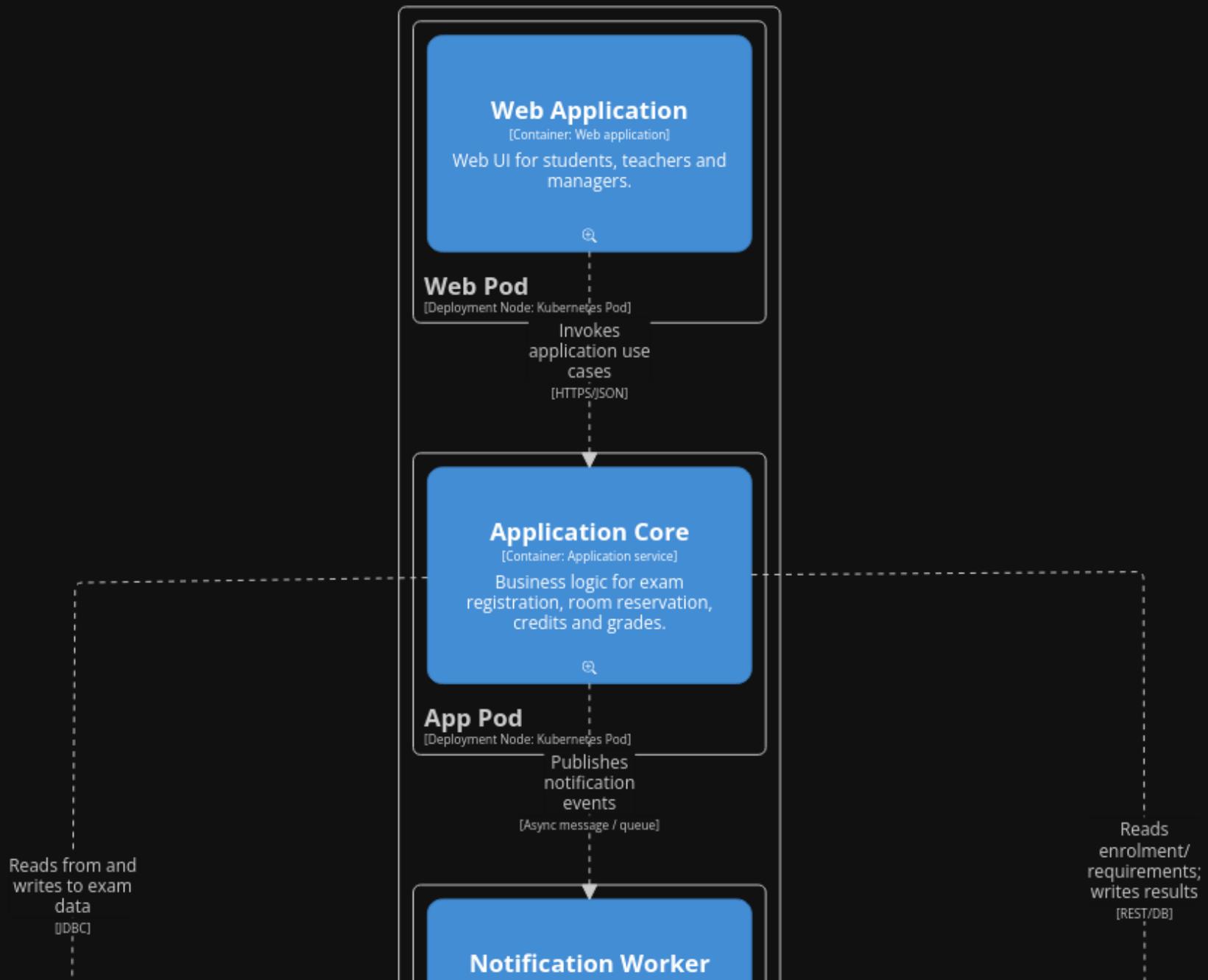


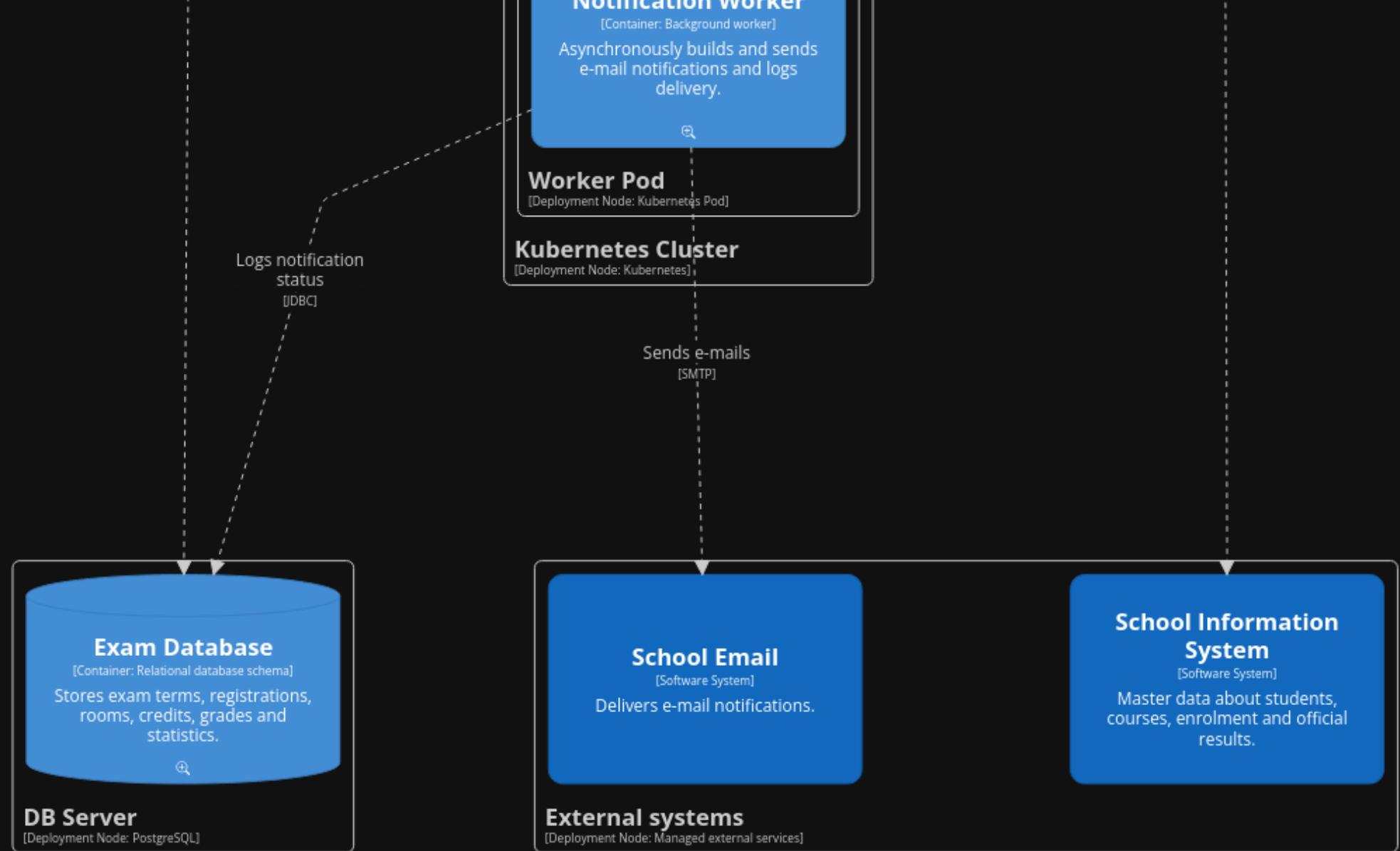




DEPLOYMENT (PRODUCTION) - C4:







THANK YOU FOR YOUR ATTENTION