



Bilkent University

Department of Computer Engineering

CS319 TERM PROJECT

Section 3

Group Lux Aeterna

Bilkent Pandemic Manager

Analysis Report

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1. Introduction

As our group, we decided to implement a pandemic manager application that tries to make Bilkenters' life easier by tracking their Covid-19 status in the campus because Covid-19 outbreak is still continuing and education life has been suspended for a while. Yet, students should not lag behind their rivals since online education is not as efficient as face to face. Therefore, it is important to implement such an application to keep track of students and instructors while they are in the face to face system.

In the light of the needs of a pandemic manager, it is decided to have different features for both students and instructors because they will get through the pandemic in different ways. We, as the group, decided to implement a pandemic manager since it is crucial to prevent more losses from this outbreak now on. Thus, the application has the following features:

- Add/Update HES codes, vaccination cards, and Covid-19 test results
- Add/Eject nearby students
- Access which student is diagnosed
- Warnings for infected students and their instructors
- Covid-19 questionnaires
- Covid-19 Stats in Bilkent

2. Proposed System

2.1. Overview of the System

2.1.1. Login Page

The application will be opened with the login page that users having account can login the main page of the application using their Bilkent ID and the password which created automatically at first by the system. Afterwards, they can change it to a new password. In case of forgetting password, the users can get a new password.

2.1.2. Covid-19 Files Page

In this page, users can add their HES code to the system to inquiry purposes. After it is approved, the status of the users will be changed to “riskless” if they are. In the second box, they can upload or update their vaccination cards as PNG to the system. When they are approved by the E-Devlet API, they will be shown as “verified” with their vaccination card/certificate number. In the third box, the users can upload new diagnoses if they have any. They can also see the test history in this box.

2.1.3. Find User Page

This page will only be visible to admin. Admin will be able to see a user by searching their name. Afterwards, if it is wished, admin can change their information such as Bilkent ID, courses, and dorm info etc.

2.1.4. Courses Page

In this page, student, instructors and admin have different interfaces. Firstly, students can see their courses in order with a button that is called “select”. If they select a course, they will be redirect to a new interface called “Select Your Nearby Contact” which shows all the students in the selected course. So, the students can add or eject their nearby students.

Secondly, this page will include the enrolled courses for instructors. They will not be able to add nearby people since it is only for students but they will be able

to see if anyone is infected or not in the selected course with the specification such as “NEGATIVE”, “POSITIVE”, and “CONTACTED”.

Lastly, admin can create a course in this page with its specification such as “course code”, “quota” etc. Afterwards, admin can add instructors and students to the course. Since students will be a lot in courses generally, admin can add an Excel file for practical purposes.

2.1.5. Dormitories Page

This page is only visible to admin. Admin can create dorm with their specifications such as dorm name, number of students etc. Afterwards, they can add students to dorm and their rooms.

2.1.6. Risk Calculator Page

In this page, users can take questionnaire about their risk status for Covid-19. When a questionnaire finished, users will be able to see their risk status on the screen. They can also take the questionnaire called “Am I Corona” which can be used when a user feels sick and is doubt if they are infected or not. So, it will be helpful for them.

2.1.7. Covid-19 Reports

In this page, users can see various types of Covid-19 statistics in one interface. It will contain the “Overall Corona Report in Turkey”, “Overall Corona Report in Bilkent”, “Dormitory Corona Report”, and “XXX Course Corona Report in Bilkent”. All of the data will be shown sequentially.

2.1.8. News Page

In the news page, users will be able to read the recent news about Covid-19 all around the world.

2.1.9. Send Feedback Page

In this page, users can send feedback about the application.

2.1.10. Profile Page

In this page, users will be able to their information such as Bilkent ID, Dorm Info if there is one and so on.

2.1.11. About Page

Everyone can see the contributors of the application in this page which can be accessed from login page.

2.2. Functional Requirements

2.2.1. Logging

The application will have a login functionality that appears when entering the application:

- Asks for username (ID number) and password
- All users (students, instructors, admin) will be asked for login.
- Forget password option that renews password in case of forgetting their password
- This page directs all users to the main page that is designed differently for admin and students/instructors.

2.2.2. Adding/Updating HES Code

Students/Instructors can add or update their HES codes on the Add/Update HES Code functionality. After they upload their HES codes, they are able to see if they are risky or not while seeing the last update date.

2.2.3. Adding/Updating Vaccination Cards Functionality

In this functionality, students/instructors can see their vaccination cards if they are uploaded, otherwise, they need to upload it first and wait until the admin approves that the vaccination card is valid and true for the student. They can upload vaccination cards for both Turkey and other countries since there will be some people vaccinated abroad. If the user does not want to get vaccinated, they can prefer to take PCR or the Diagnovir test every 72 hours which is required to access the campus and its facilities.

2.2.4. Adding/Updating New Diagnoses and See Test Results

In this functionality, students/instructors can add new diagnoses such as PCR, X-Ray or tomography with their date and files. In case of forgetting or adding wrong files they can update those files in the system. Also, they can see their Covid-19 test history. If their Covid-19 test results are approved and positive, the nearby students and roommates will be notified by email to tell them that they might be infected and need to take Covid-19 test as soon as possible. After they take the Covid-19 test, they have to update the test results constantly every 72 hours to get on campus. Since they are contact students, they will be labeled as contact and risky in the application so the instructor will know their status.

2.2.5. Finding/Updating User

In this functionality of the admin's, admin can access and find a user by searching their name. After finding that specific user, admins can update their information such as course or dormitory.

2.2.6. Sidebar

Sidebar will have 6 buttons. These are called the main page, courses, dorms, risk calculator, covid-19 reports, and news. It will be the same for both users and admins and will not change during the actions.

2.2.7. Profile

Profile part will consist of the user's avatar or profile photo and their status such as riskless or contaminated.

2.2.8. Searching

Users can search any keyword on the search bar.

2.2.9. Seeing Diagnosed Students

Instructors will be able to see who is diagnosed positive for Covid-19 in each of their courses by selecting the course in this functionality. After selecting the course, they can see enrolled students and their diagnosis status in the new interface. So, they will know who should be in quarantine or not.

2.2.10. Adding/Updating Nearby Students

Students will be able to see their course codes, course names and number of close seating classmates immediately. Also, students will be able to select their close seating classmates by clicking the select button at the right. They can add or remove their classmates in this new page. Selected classmates appear or disappear in button below after clicking add or remove buttons.

2.2.11. Creating Course and Adding Students/Instructors

Admin will have the authority to create courses by this function, after that they can add students and instructors to that course in the new interface.

Since there will be many students like up to 60 students, there will be both manual and excel file upload selection to add students.

2.2.12. Creating Dorm and Adding Students

Admin will have the authority to create dorms by this function, after that they can add students to that dorm room in the right box as specified. Admin can add students in the same block in an excel file to make it more practical.

2.2.13. Calculating Risk

Students/Instructors can solve the Risk Calculator test to learn which risk group they are in according to their health conditions, current international criteria etc.

They can also take the Am I Corona test to check out if they are currently showing Covid-19 symptoms or not according to criteria of all diseases.

2.2.14. Accessing to Covid-19 Reports

There will be three types of reports that are open to both students and instructors which have different functionalities:

- Instructors can specifically see who is diagnosed positive for Covid-19 in their courses. They can also see an overall report that does not specifically show who is diagnosed. Instructors naturally cannot see dorms' statistics.

- Students cannot specifically see who is diagnosed positive for Covid-19 in their courses but they can see numbers. They can also see anonymous statistics for their dorms and see the overall report of Bilkent University.

2.2.15. Accessing to News

News will contain current news about Covid-19 pandemic around the world. It will automatically fetch data from Google News API

2.2.16. Sending Feedback

Users can send feedback to improve the application in its further version.

2.3. Non-Functional Requirements

2.3.1. User-Friendly Interface

The application is designed to not be eye-straining since nobody would want an application that is too complicated and difficult to do actions.

Therefore, this application's interface is kept simple to avoid confusion. For example, there are not many options on the sidebar while their functionalities are seen as plain and goal-oriented. On the other hand, using the right colors and designs such as user-friendly buttons like green button for add function while red color for omit/eject button or green color font for status "riskless" while red color font for status "contaminated" will make sure that the users will be more eager to use this application more

2.3.2. Maintainability

Since the application will be designed in an OOP language, it will not be a problem to add or remove features that are not needed anymore and fix the bugs because it will not affect the legacy code. Therefore, there will be no confusion or conflicts in the code while fixing the bugs and adding or removing some features.

2.3.3. Compatibility with Real Life

Since the application will totally be integrated in campus life of students and instruction to maintain and keep track of their Covid-19 status, it can be said that it is fully compatible and integrated with real life. For

example, students will add their nearby students from their actual, real classes. Or, they can be notified when there is someone near to them who is infected.

2.3.4. Safety

The courses will be assigned for each student by the admin so they cannot enroll in another course they are not supposed to do so. Also, students will not be able to see specifically who is diagnosed in their courses since it is confidential and private information of the student. Only the instructors will see who is diagnosed which is necessary to maintain the students' health.

2.4. Pseudo Requirements

The application will be implemented nicely and be supported by all types of operation systems (Windows, Linux etc.). Java and Spring Framework will be used to create the application since they are the most suitable and extensive languages.

2.5. System Models

2.5.1 Scenarios

Use Case 1

Use Case Name: Add Corona Files

Participating Actor: Instructor and Student (user)

Stakeholders and Interests: User wants to add his corona files to the system or wants to update the files

Entry Condition: None

Exit Condition: User successfully add or update the file

Main Flows of Events:

- User add his HES code

- User add his vaccination card
- User add his test result
- Test result is negative

Alternative Flows of Events:

- User add his HES code
- User add his vaccination card
- User add his test result
- Test result is positive
- An email is sent to User's nearby friends in courses and User's roommates in the dormitory to warn that they were in contact with a positive user.

Use Case 2

Use Case Name: Approbation of Corona Files

Participating Actor: E-Devlet API

Stakeholders and Interests: API checks if the added corona files are valid.

Entry Condition: None

Exit Condition: E-Devlet API approves or rejects the file

Main Flows of Events:

- API checks if there is approval request
- If there is, it checks if the request is valid
- According to the request API approves the file or rejects the file

Use Case 3

Use Case Name: Create Course

Participating Actor: Admin

Stakeholders and Interests: Admin can create a course

Entry Condition: None

Exit Condition: Successfully creating a course

Main Flows of Events:

- Admin creates a new course
- Admin adds instructor to the course
- Admin adds students to the course

Use Case 4

Use Case Name: Add Nearby students

Participating Actor: Student

Stakeholders and Interests: Student can add his nearby student in a specific course

Entry Condition: User has to attend a course

Exit Condition: User successfully add or eject his nearby friends

Main Flows of Events:

- User select a course
- User finds his friend from the student list
- User add his friend ass nearby

Alternative Flows of Events:

- User selects a course
- User indeliberately add wrong student
- User ejects the wrong student
- User adds his nearby friend

Use Case 5

Use Case Name: Add Student to a Dormitory

Participating Actor: Admin

Stakeholders and Interests: Admin adds students to dormitories

Entry Condition: Student must stay at dormitory

Exit Condition: Successfully adding the student

Main Flows of Events:

- Admin chooses a dormitory
- Admin adds student's floor, block and room number

Use Case 6

Use Case Name: Find User

Participating Actor: Admin

Stakeholders and Interests: Admin can find users and update their information.

Entry Condition: None

Exit Condition: None

Main Flows of Events:

Main Flows of Events:

- Admin searches for a student or instructor
- Admin update user's information such as ID number etc.

Alternative Flows of Events:

- Admin searches for a student.
- Admin update user's dormitory.

Use Case 7

Use Case Name: Solve Calculate Your Risk Tests

Participating Actor: Instructor and Student (User)

Stakeholders and Interests: User can solve questions to see his risk level of fatal impact from corona or to see if he shows corona symptoms

Entry Condition: None

Exit Condition: User finishes the test

Main Flows of Events:

- User choose the test type
- User answer the questions
- User submit the test
- User receive his test result

Use Case 8

Use Case Name: Check News

Participating Actor: Admin, Instructor, Student

Stakeholders and Interests: User can check daily Covid-19 news

Entry Condition: None

Exit Condition: User exit from news section

Main Flows of Events:

- User enter news section
- User checks daily news

Use Case 9

Use Case Name: Send Feedback

Participating Actor: Instructor and Student

Stakeholders and Interests: User can send feedback to admin about his complaints

Entry Condition: None

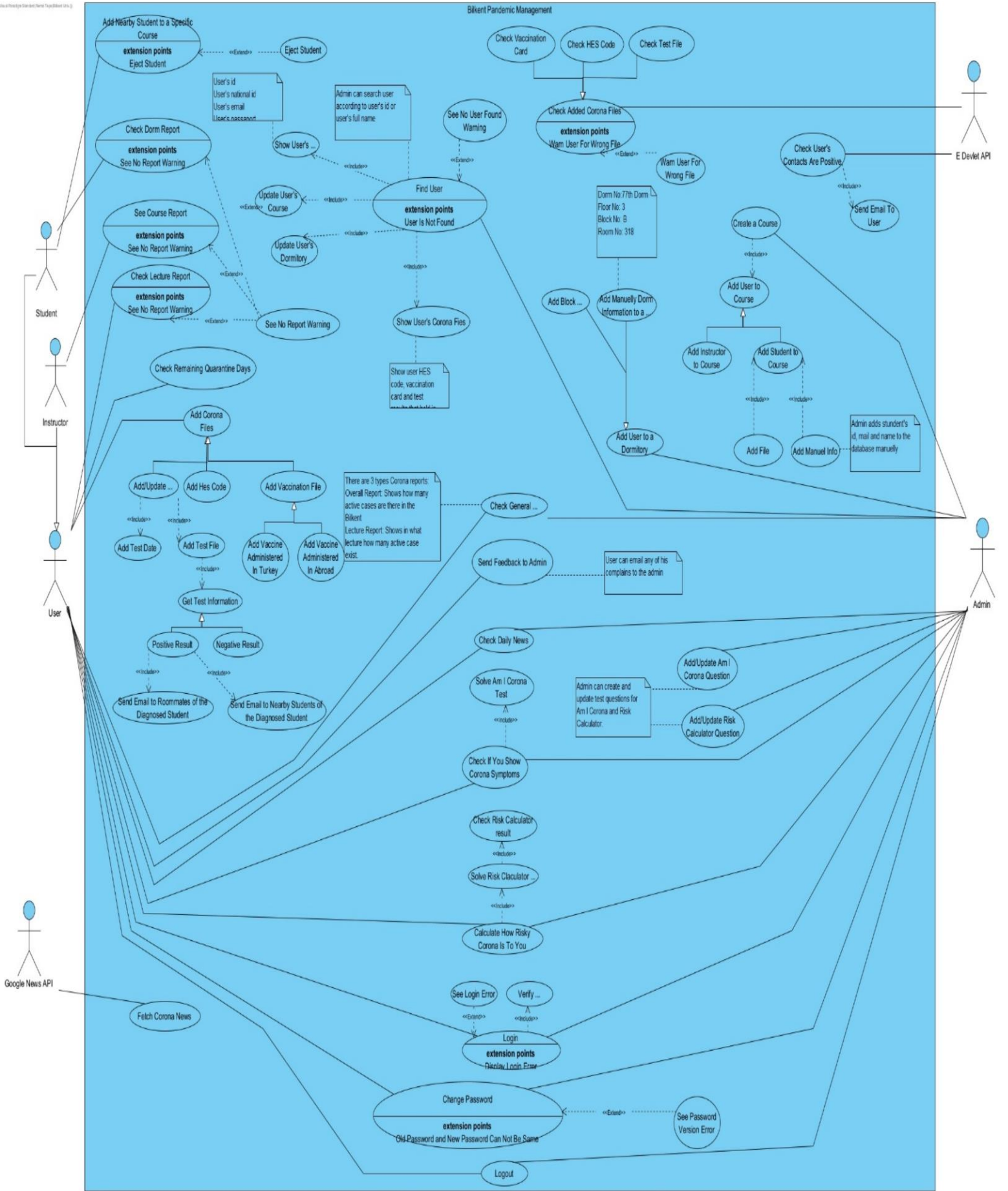
Exit Condition: User successfully send his feedback

Main Flows of Events:

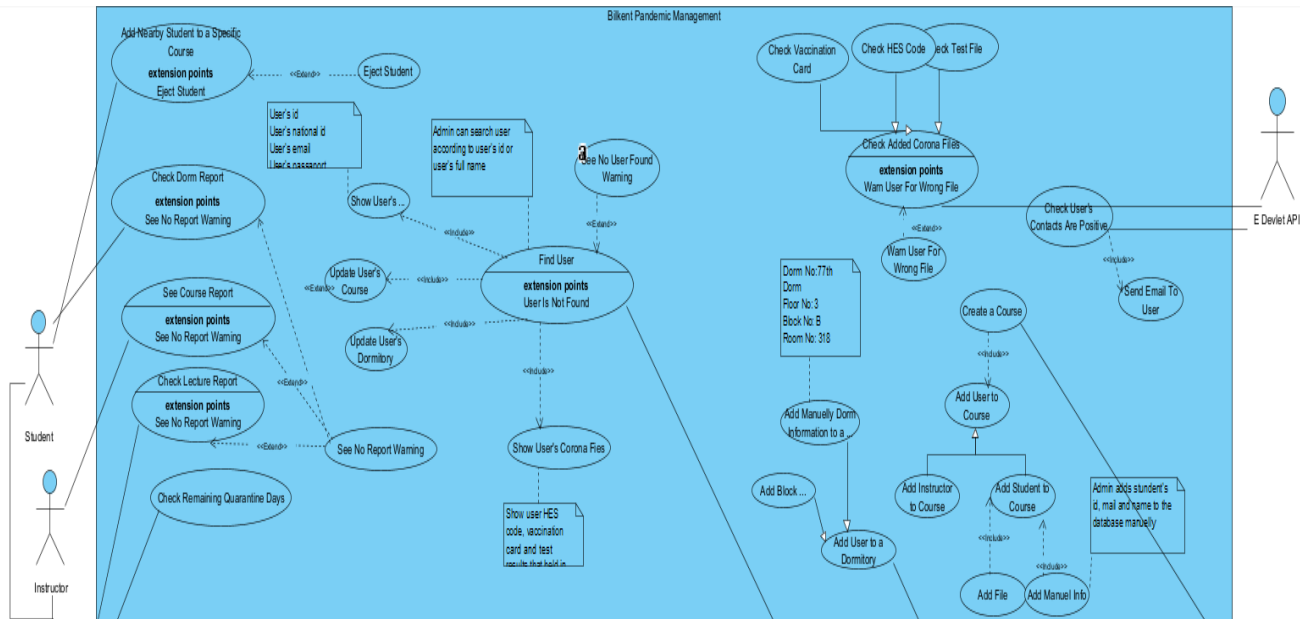
- User writes his feedback
- User send his feedback

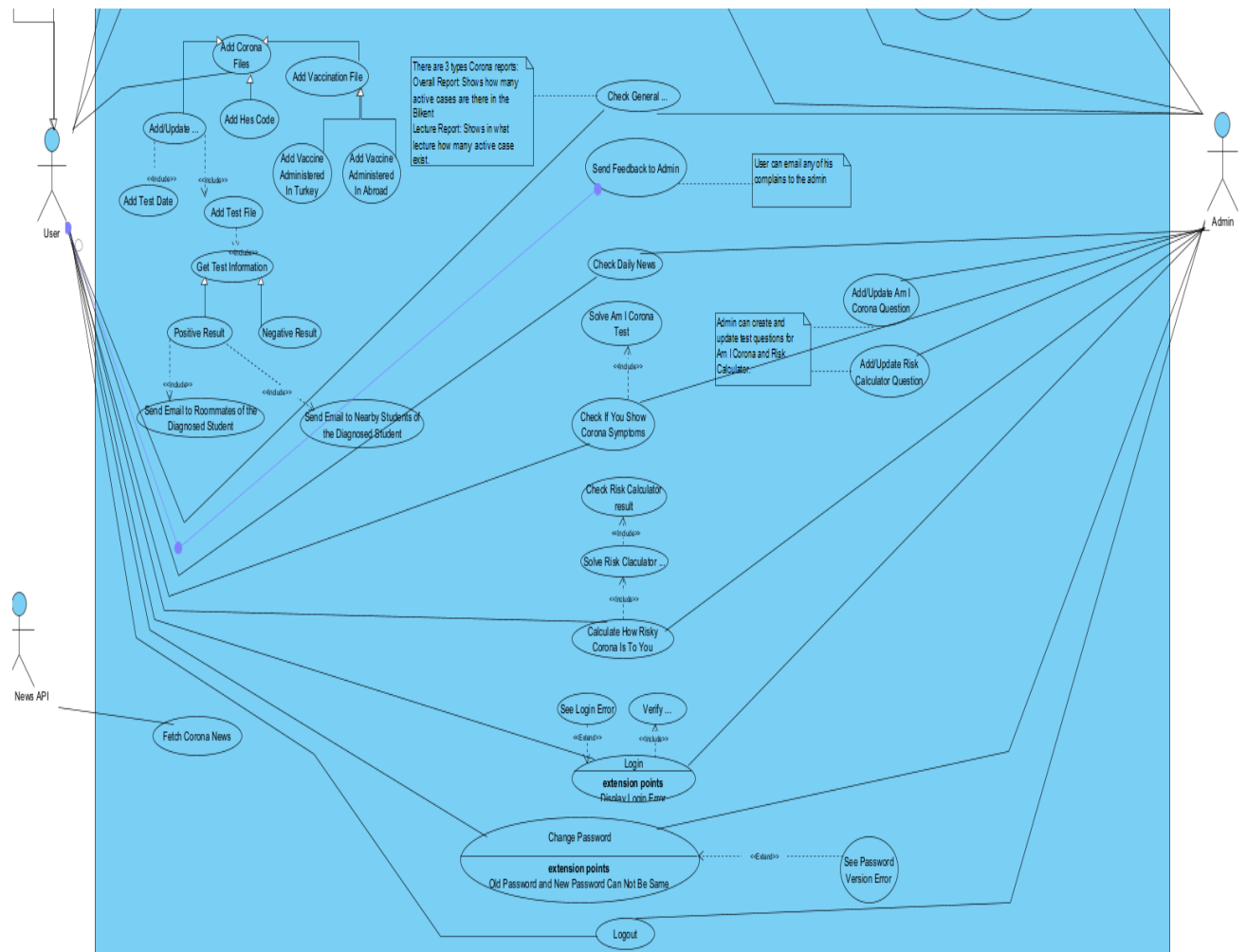
2.5.2. Use Case Model

Full Model:



Divided Model:

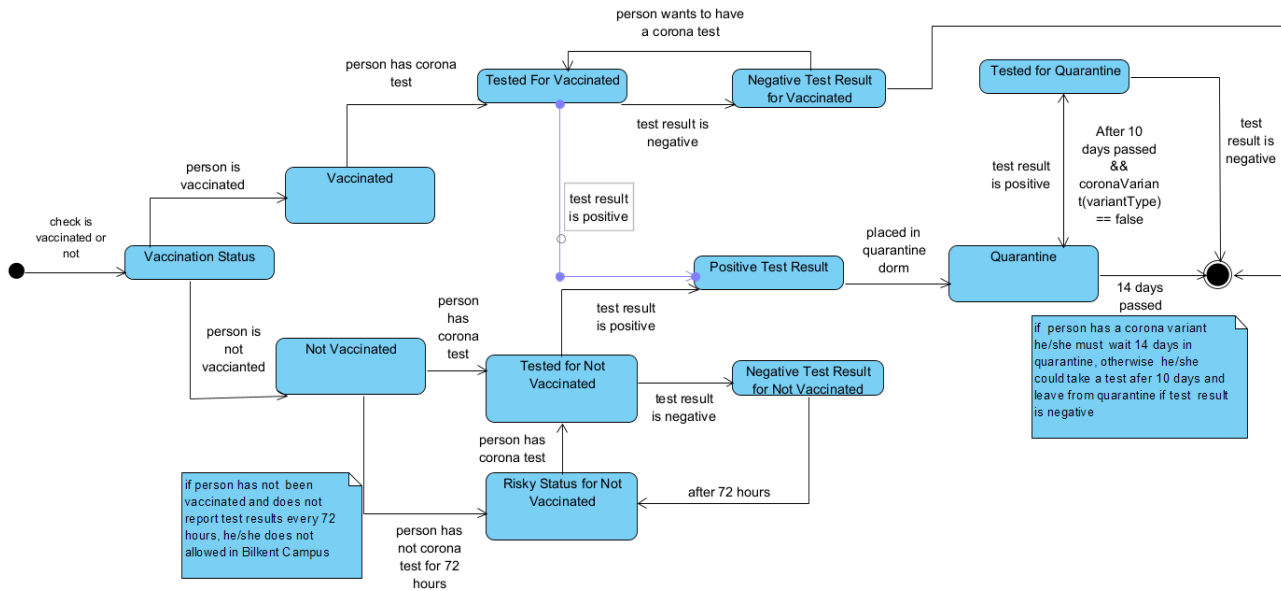




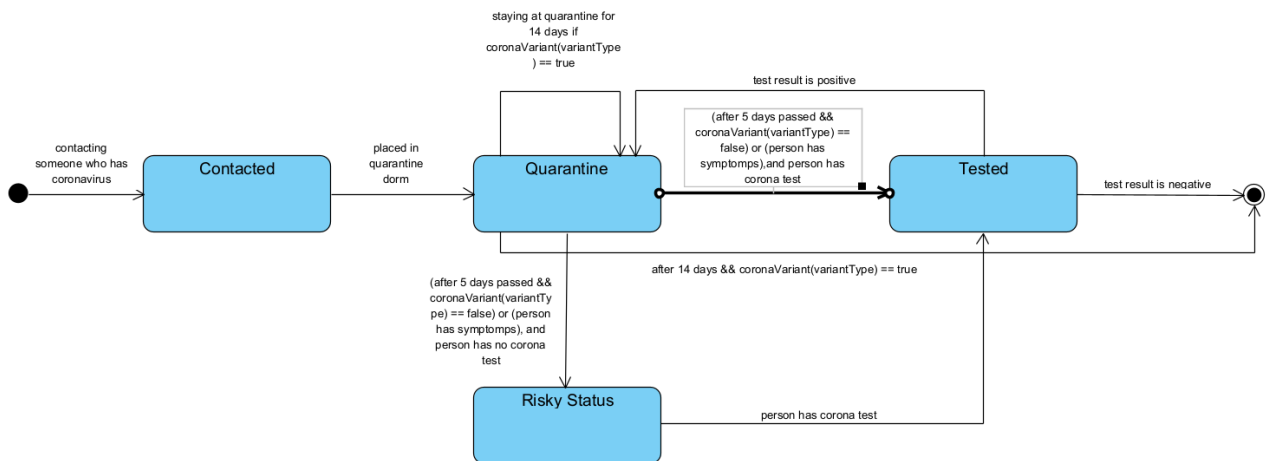
2.5.3. Dynamic Models

2.5.3.1 State Diagrams

Quarantine State According to Test Result Diagram

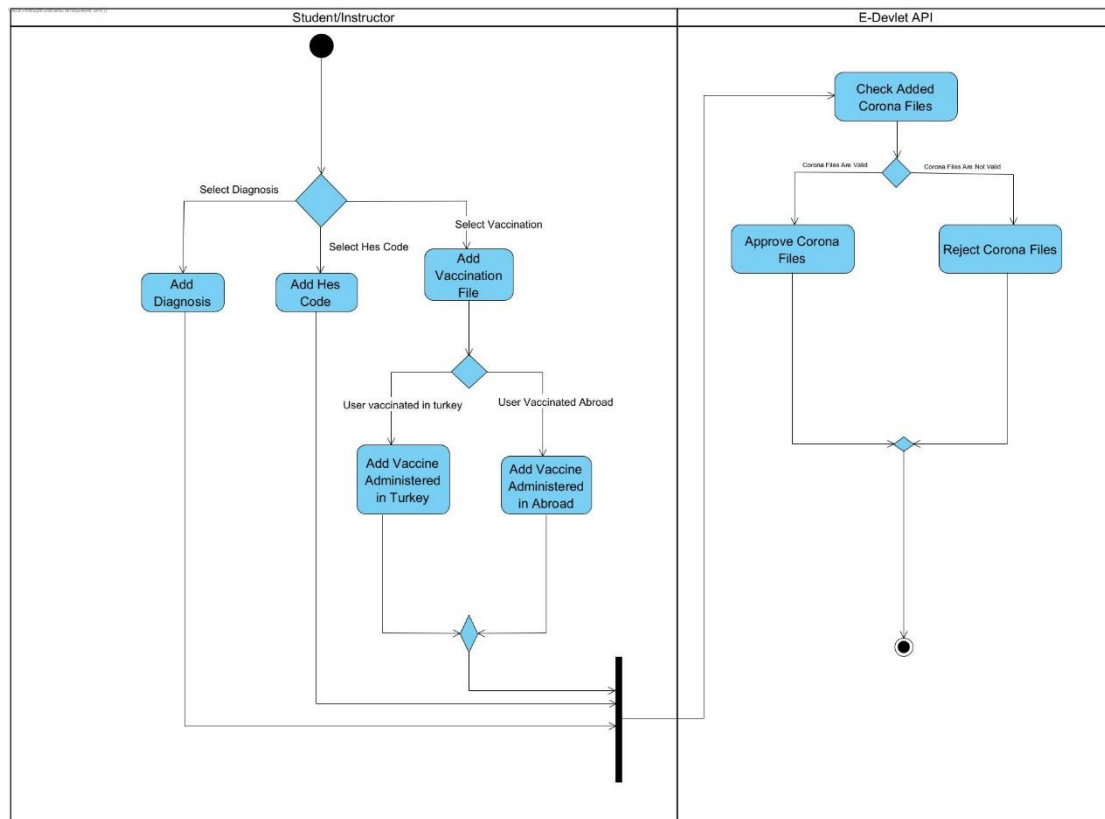


Contacted Status State Diagram

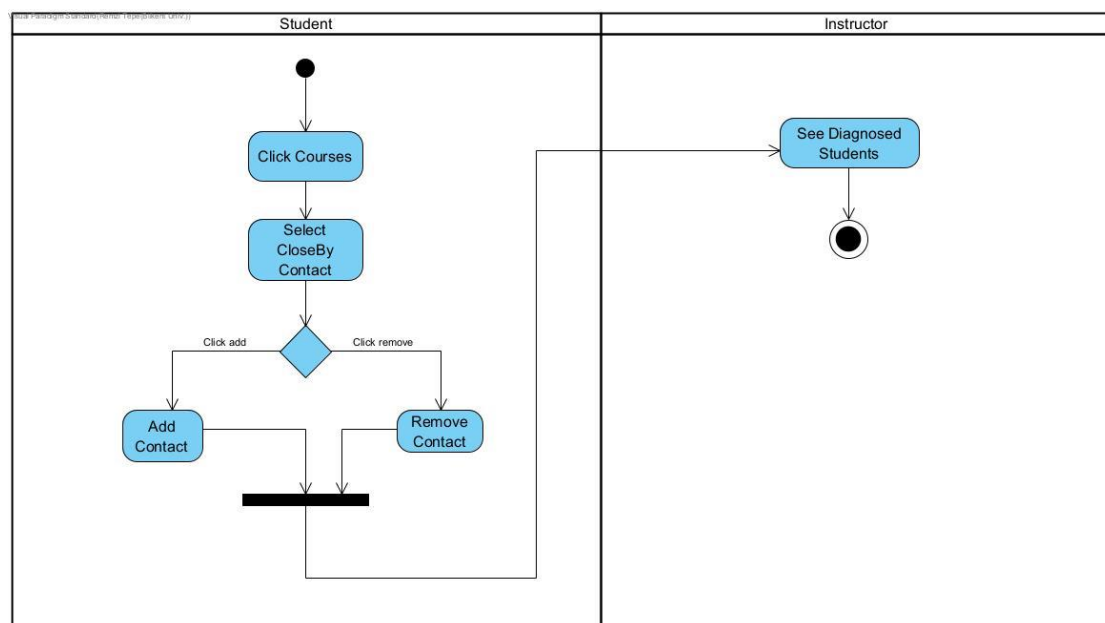


2.5.3.2 Activity Diagram

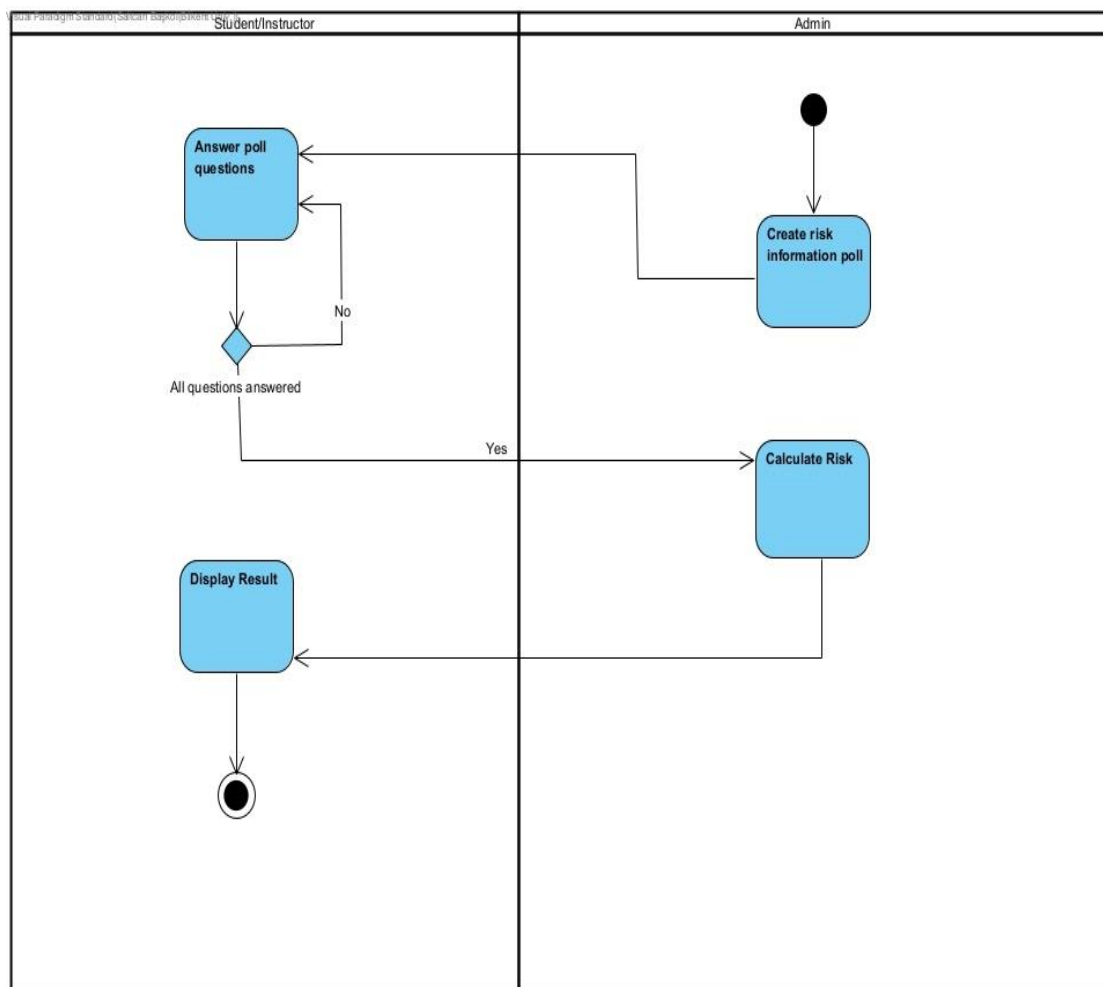
Manage Corona Files Activity Diagram



Select Nearby Contact Activity Diagram

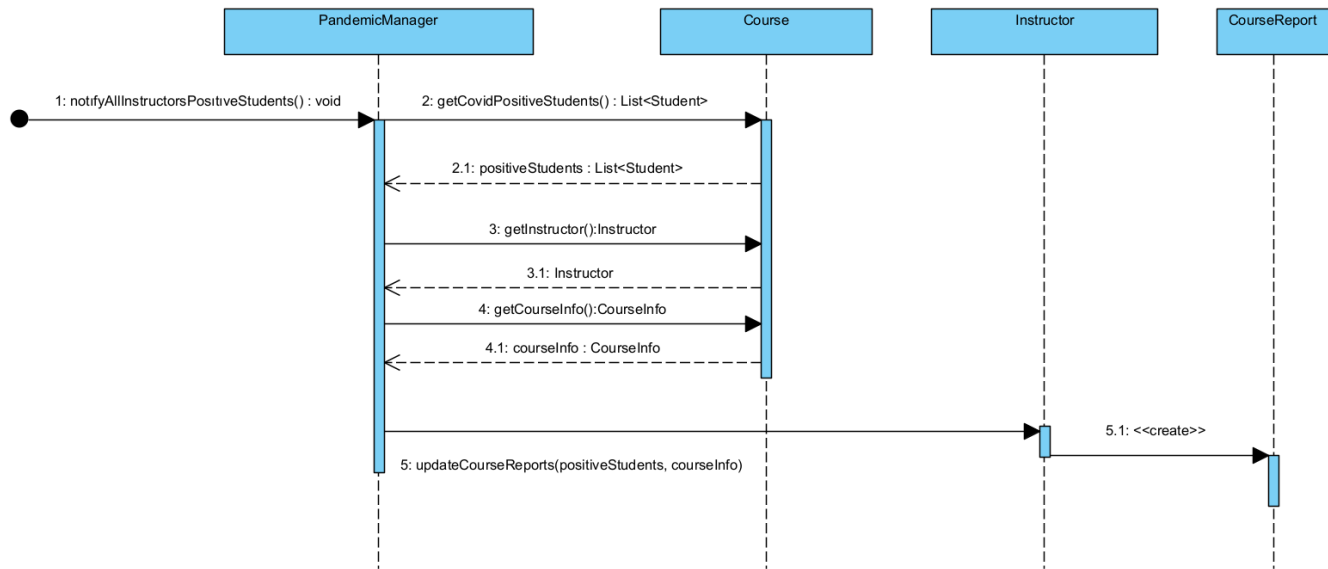


Risk Calculator Activity Diagram

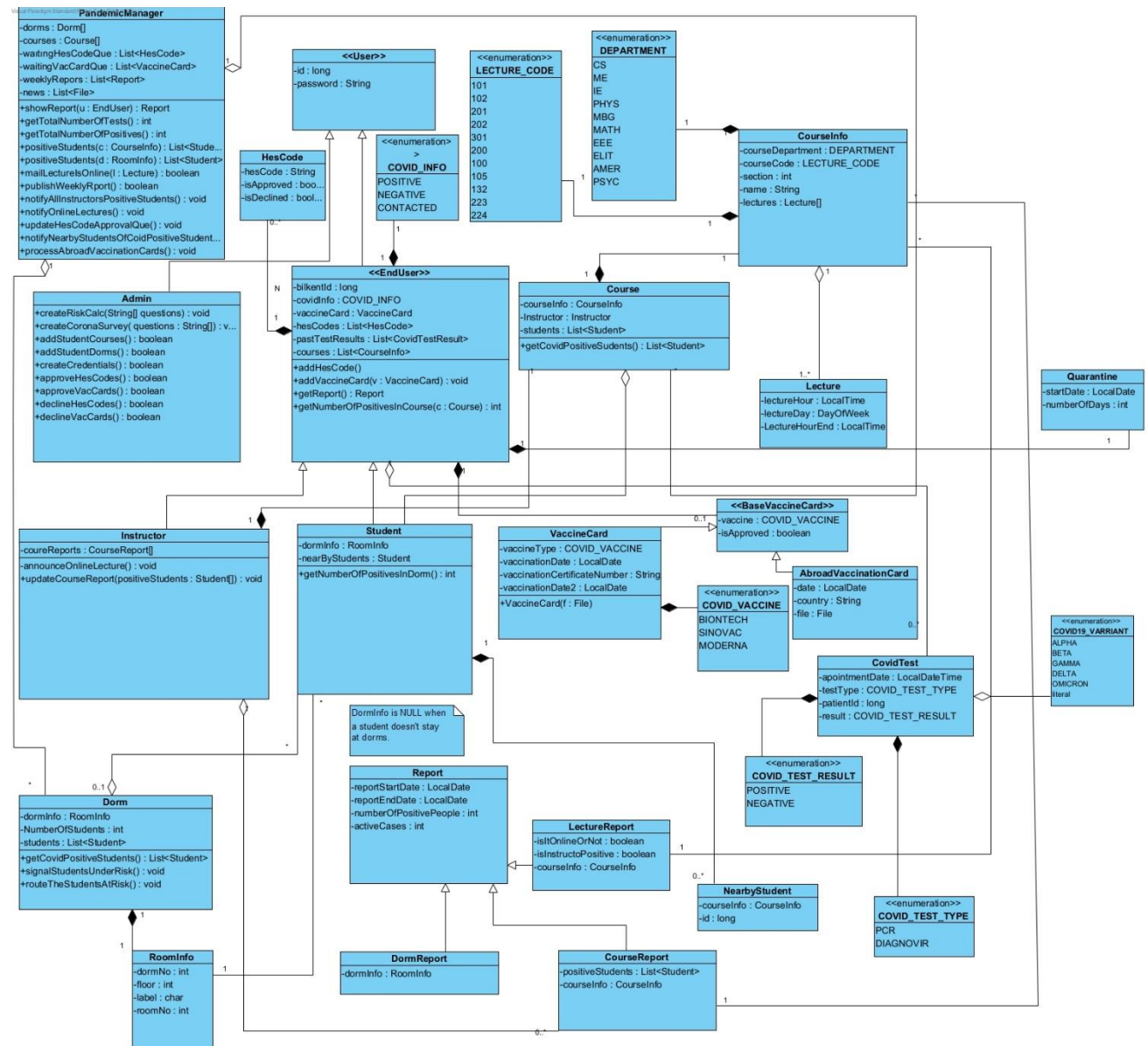


2.5.3.3 Sequence Diagram

Getting Course Report for Instructor Sequence Diagram



2.5.4. Object and Class Model



Further Explanation for Object and Class Model

PandemicManger: This class is where the actual management happens. Collected vaccination cards and HES codes are stored here before approval lest it is wrong.

Later, added to database if approved.

Course: Since the courses are the one of the main meeting reasons of people in a university it needs its own set of functionalities.

CourseInfo: CourseInfo object creates an ease of use since courses taken by a student is an aspect of Student object and Students are an aspect of Course objects. In order to avoid infinite recursive cases, it is added.

DEPARTMENT: Predetermined Enum for department codes to make editing easier.

LECTURE_CODE: Predetermined Enum for lecture codes to make editing easier.

COVID_INFO: POSITIVE is covid positive, NEGATIVE is covid negative and CONTACTED is for people who are contaminated with the ones testes positive for Covid-19

Lecture: Lecture object is a way to create regular informing gaps for EndUsers who are part of that Course object. Since POSITIVE students are not allowed in a lecture, Instructors must know covid POSITIVE students before every lecture.

RoomInfo: RoomInfo object creates an ease of use since the room of a student is an aspect of Student object and Students are an aspect of Room objects. In order to avoid infinite recursive cases, it is added.

Dorm: Since the Dorms are again a place for crowds or close contacts, it needs its own set of functionalities. Positive students must go to quarantine dorms and their roommates must be labeled as CONTACTED covid info.

User: It is an abstract class to keep the code DRY. Since everybody has to have a Bilkent Pandemic Manager id it is required.

EndUser: It is an abstract class to group the similar requirements of Student and Instructor. Every user that is not admin must be an EndUser.

Quarantine: It is a class that includes the start date of quarantine and number of days left.

Student: Different from Instructor object, student object has dorm information which is null if student is not staying at dorms and nearby student information.

NearbyStudent: It contains the nearby students of a student with their ID and course code.

Instructor: Since the absence of Instructor because of covid creates different scenarios such as lectures being online if Instructor is covid positive this class is needed.

Report: Report object is required to determine the formation of a report that is fetched to EndUser.

DormReport: A special type of Report object which contains the information of dorm and covid POSITIVE students.

CourseReport: A special type of Report object which contains the information of course and covid POSITIVE students.

VaccineCard: VaccineCard is an abstract class to store both BaseVaccineCard objects and AbroadVaccineCard objects in the same queue.

BaseVaccineCard: Vaccine cards given in Turkey stored and processed via this object.

AbroadVaccineCard: Vaccination cards given in Turkey abroad are stored and processed via this object. Since the information contained within these vaccine cards are not known priorly it is stored as a File object.

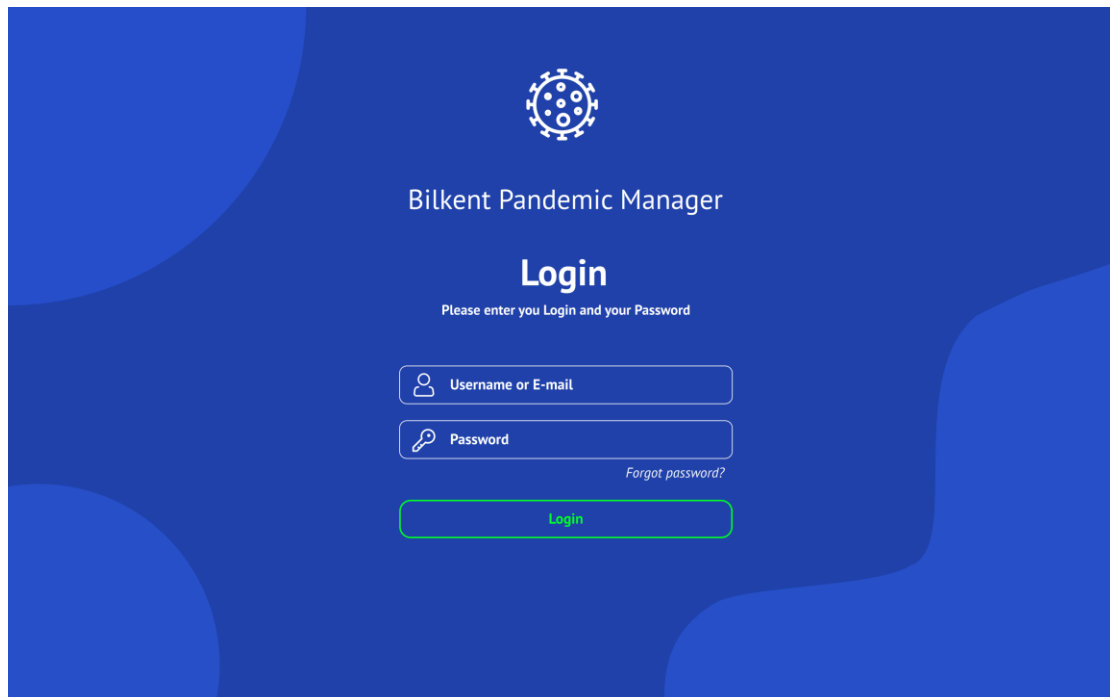
COVID_TEST_TYPE: in order to differentiate different test types such as PCR and Diagnovir.

COVID_VACCINE: In order to differentiate different types of vaccines.

COVID19_VARIANT: Different variants of Covid-19

2.5.5. User Interface – Screen Mockups

Login Page:



The login page features a dark blue background with a white virus icon at the top center. Below the icon, the text "Bilkent Pandemic Manager" is displayed. The main heading "Login" is in a large, bold font, followed by the instruction "Please enter you Login and your Password". There are two input fields: "Username or E-mail" and "Password", both with icons (a person and a key respectively). A "Forgot password?" link is located below the password field. A green "Login" button is at the bottom.

Bilkent Pandemic Manager

Login

Please enter you Login and your Password

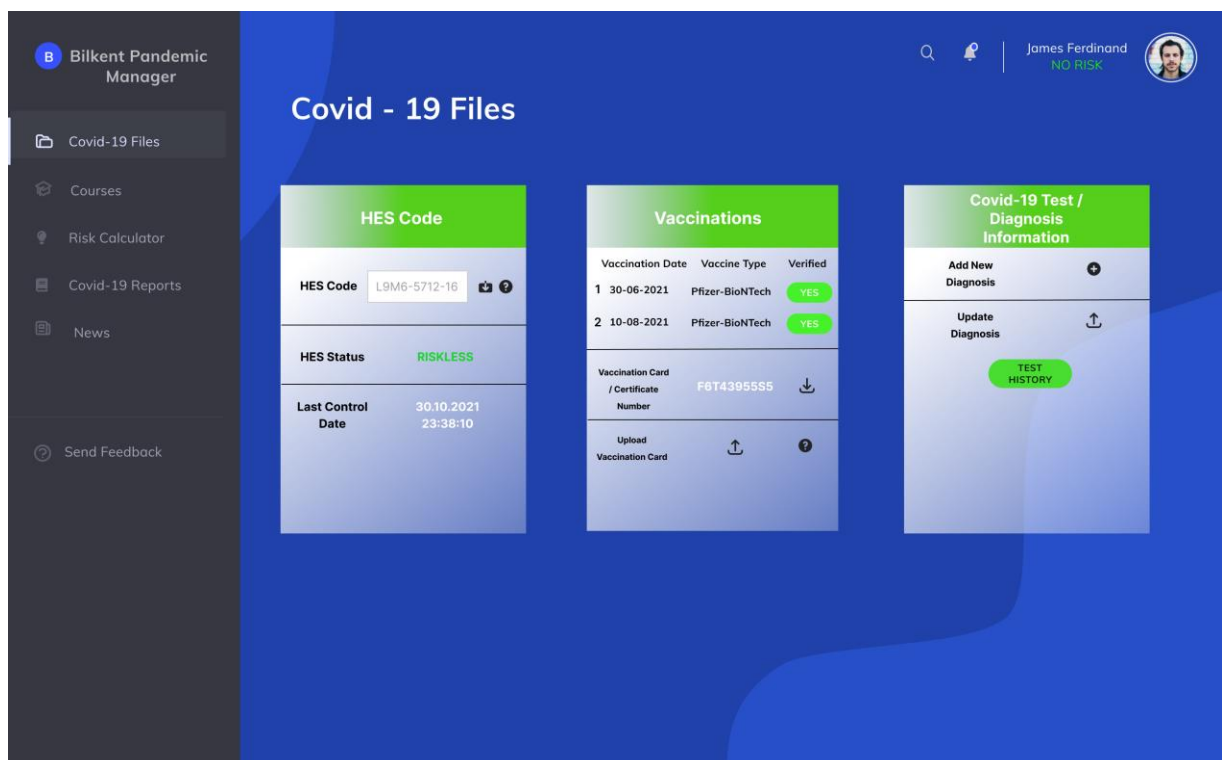
Username or E-mail

Password

[Forgot password?](#)

Login

User Main Page -> Covid-19 Files



The main page has a dark blue sidebar on the left with the "Bilkent Pandemic Manager" logo and a list of menu items: "Covid-19 Files", "Courses", "Risk Calculator", "Covid-19 Reports", "News", and "Send Feedback". The main content area has a header with a search icon, a notification bell, and a user profile for "James Ferdinand" with a "NO RISK" status. The title "Covid - 19 Files" is centered at the top of the main area. Below the title, there are three panels: "HES Code", "Vaccinations", and "Covid-19 Test / Diagnosis Information".

Bilkent Pandemic Manager

- Covid-19 Files
- Courses
- Risk Calculator
- Covid-19 Reports
- News
- Send Feedback

Search | James Ferdinand NO RISK

Covid - 19 Files

HES Code

HES Code: L9M6-5712-16

HES Status: **RISKLESS**

Last Control Date: 30.10.2021 23:38:10

Vaccinations

Vaccination Date	Vaccine Type	Verified
1 30-06-2021	Pfizer-BioNTech	YES
2 10-08-2021	Pfizer-BioNTech	YES

Vaccination Card / Certificate Number: F6T43955S5

Upload Vaccination Card

Covid-19 Test / Diagnosis Information

Add New Diagnosis

Update Diagnosis

TEST HISTORY

User Main Page -> Covid-19 Files -> Upload Vaccination Card

Bilkent Pandemic Manager

Upload Vaccination Card

Adding Vaccination Turkey

Upload File Max file size 10MB.

UPDATE CANCEL

Add Vaccination Abroad

Vaccine Name Select one...

In Which Country Were You Vaccinated? Select one...

Vaccination Date

Document Upload File Max file size 10MB.

UPDATE CANCEL

James Ferdinand
NO RISK

User Main Page -> Covid-19 Files -> Add New Diagnosis

Bilkent Pandemic Manager

Add New Diagnosis

Diagnosis Type Select one...

Diagnosis Date

Document Upload File Max file size 10MB.

UPDATE CANCEL

James Ferdinand
NO RISK

User Main Page -> Covid-19 Files -> Test History

B Bilkent Pandemic Manager

Covid-19 Files

Courses

Risk Calculator

Covid-19 Reports

News

Send Feedback

James Ferdinand
NO RISK

Test History

Test History

	Test Date	Diagnosis (Test) Type	Result
1	31-10-2021	PCR Test	NEGATIVE
2	21-10-2021	X-Ray Test	NEGATIVE
3	15-09-2021	PCR Test	POSITIVE

User Main Page -> My Profile Page

B Bilkent Pandemic Manager

Covid-19 Files

Courses


Risk Calculator

Covid-19 Reports

Send Feedback

James Ferdinand
NO RISK

My Profile



Name: James Ferdinand

Bilkent ID: 21145648

National ID No: 32073524612

Passport No:

E-mail: james.ferdinand@bilkent.edu.tr

You are allowed in on Campus.

You are fully vaccinated

User (Student) Main Page -> Courses

B

Bilkent Pandemic Manager

Covid-19 Files

Courses

Risk Calculator

Covid-19 Reports

Send Feedback

James Ferdinand

NO RISK

Courses

	Course Code	Course Name	Number of Close Seating Classmates	Select Your Closeby Contact
1	CS 299 - 001	Summer Training I	0	<button>SELECT</button>
2	CS 315 - 003	Programming Languages	2	<button>SELECT</button>
3	CS 319 - 003	Object-Oriented Software Engineering	0	<button>SELECT</button>
4	ENG 401 - 008	Technical Report Writing and Presentation	1	<button>SELECT</button>
5	MATH 230 - 003	Probability and Statistics for Engineers	4	<button>SELECT</button>

User (Student) Main Page -> Courses -> Select Your Closeby Contact

B

Bilkent Pandemic Manager

Covid-19 Files

Courses

Risk Calculator

Covid-19 Reports

Send Feedback

James Ferdinand

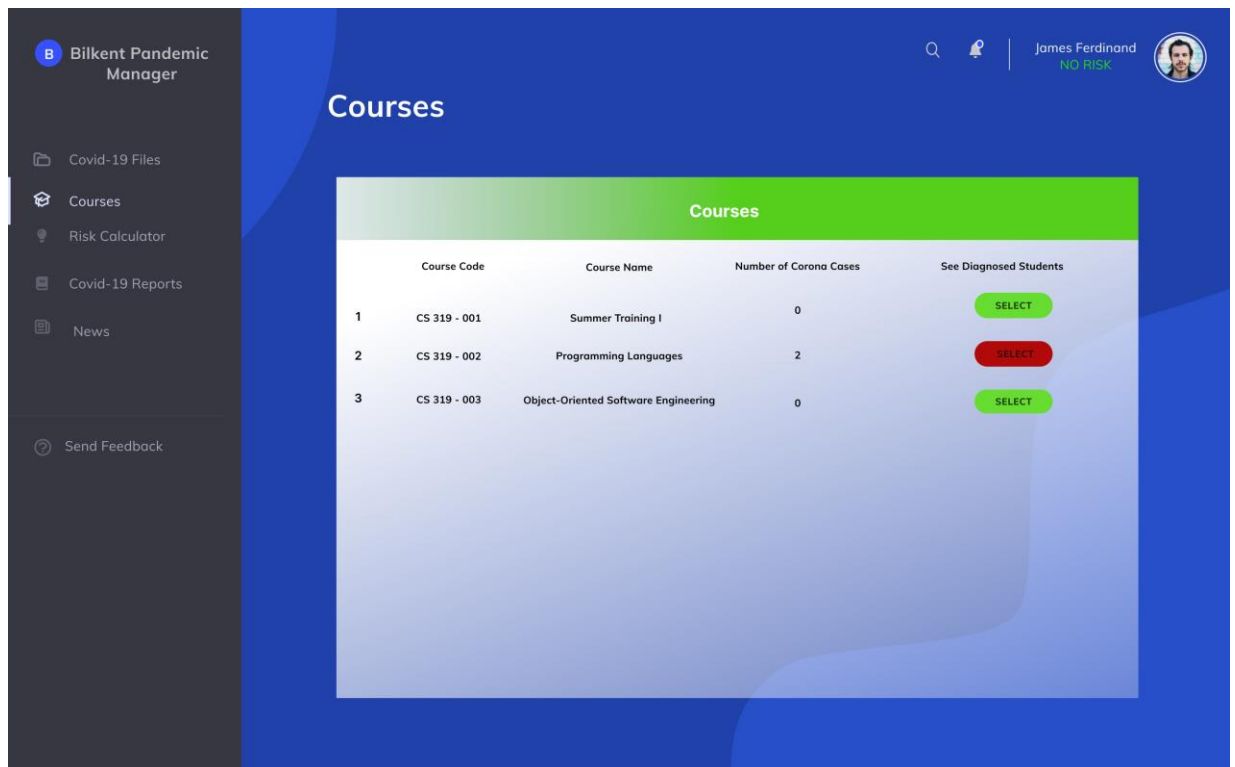
NO RISK

Select Your Closeby Contact

	Name	Bilkent ID	Select Your Closeby Contact
1	Mehmet Can	21804567	<button>ADD</button> <button>REMOVE</button>
2	Huseyin Kaya	21803283	<button>ADD</button> <button>REMOVE</button>
3	Serkan Yasa	21809237	<button>ADD</button> <button>REMOVE</button>
4	James Mardock	21803746	<button>ADD</button> <button>REMOVE</button>
5	Feridun Sana	21903947	<button>ADD</button> <button>REMOVE</button>

Selected Classmates: Mehmet Can
Serkan Yasa
Feridun Sana

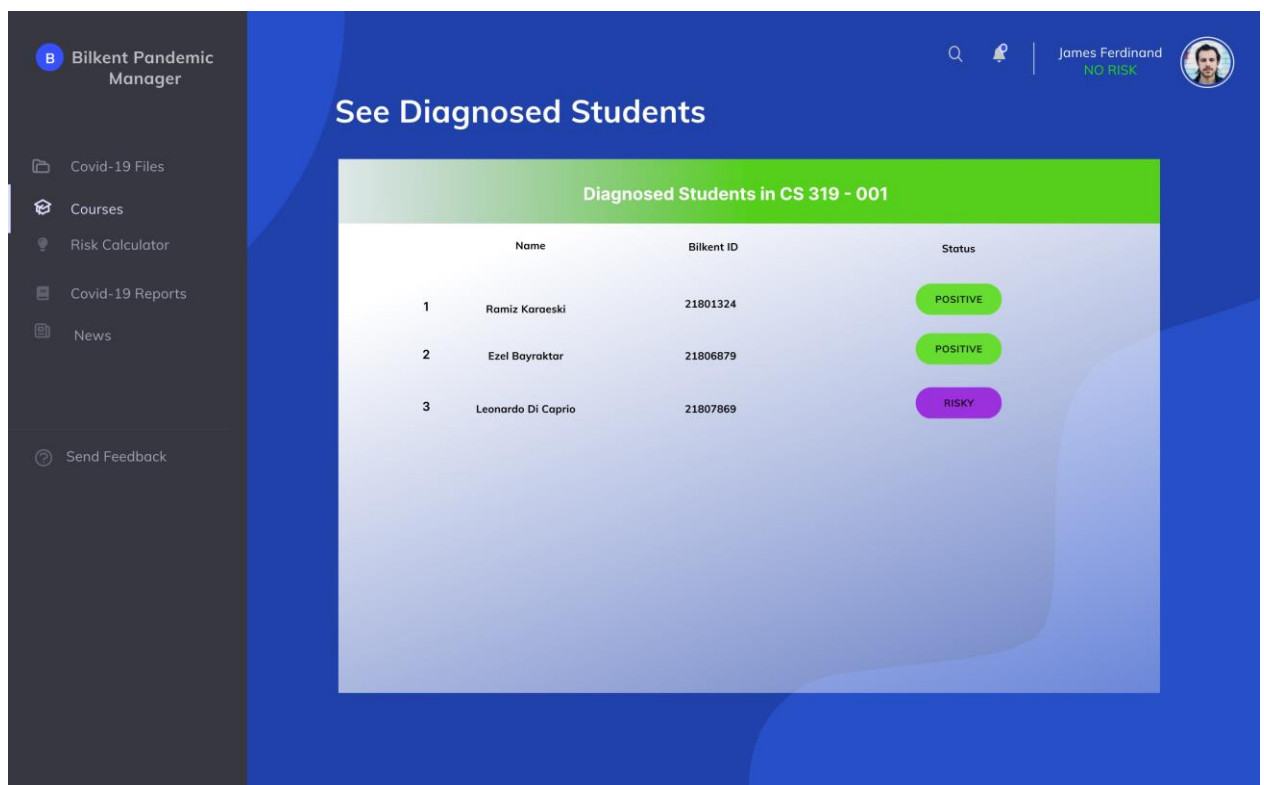
User (Instructor) Main Page -> Courses



The screenshot shows the 'Courses' page for an instructor in the Bilkent Pandemic Manager. The left sidebar contains navigation links: 'Covid-19 Files', 'Courses' (selected), 'Risk Calculator', 'Covid-19 Reports', 'News', and 'Send Feedback'. The top right shows the user 'James Ferdinand' with a 'NO RISK' status and a profile picture. The main content area is titled 'Courses' and displays a table with three courses. Each course has a 'SELECT' button to view diagnosed students.

	Course Code	Course Name	Number of Corona Cases	See Diagnosed Students
1	CS 319 - 001	Summer Training I	0	<button>SELECT</button>
2	CS 319 - 002	Programming Languages	2	<button>SELECT</button>
3	CS 319 - 003	Object-Oriented Software Engineering	0	<button>SELECT</button>

User (Student) Main Page -> Courses -> See Diagnosed Students



The screenshot shows the 'See Diagnosed Students' page for a student in the Bilkent Pandemic Manager. The left sidebar is identical to the instructor page. The top right shows the user 'James Ferdinand' with a 'NO RISK' status and a profile picture. The main content area is titled 'See Diagnosed Students' and displays a table for 'Diagnosed Students in CS 319 - 001'. The table lists three students with their names, Bilkent IDs, and risk statuses.

	Name	Bilkent ID	Status
1	Ramiz Karaeski	21801324	<button>POSITIVE</button>
2	Ezel Bayraktar	21806879	<button>POSITIVE</button>
3	Leonardo Di Caprio	21807869	<button>RISKY</button>

User Main Page -> Risk Calculator

The screenshot shows the 'Risk Calculator' page within the 'Bilkent Pandemic Manager' application. The interface is split into two main sections: 'Calculate Your Risk Group' and 'Am I Corona'. Both sections contain three questions for user input.

Header: Bilkent Pandemic Manager | James Ferdinand | NO RISK

Risk Calculator

Calculate Your Risk Group

1. Question text goes here.

☐ Multiple choice answer
☐ Multiple choice answer
☐ Multiple choice answer

2. Question text goes here. 1 = Strongly Agree, 5 = Strongly Disagree.

1 2 3 4 5

3. Question text goes here.

Select one... ▼

APPLY

Am I Corona

1. Question text goes here.

☐ Multiple choice answer
☐ Multiple choice answer
☐ Multiple choice answer

2. Question text goes here. 1 = Strongly Agree, 5 = Strongly Disagree.

1 2 3 4 5

3. Question text goes here.

Select one... ▼

APPLY

User Main Page -> Covid-19 Reports

B Bilkent Pandemic Manager

Covid-19 Files

Courses

Risk Calculator

Covid-19 Reports

News

James Ferdinand

NO RISK

Q

🔔

Covid-19 Reports

Covid-19 Reports				
Daily Cases	Daily Death Number	Number of Tests	Number of recoveries	
23096	203	344163	982	

Overall Corona Report in Bilkent

Sep 15, 2021

Dormitory Corona Report in Bilkent

Sep 15, 2021

Lecture Corona Report in Bilkent

Sep 15, 2021

User Main Page -> Covid-19 Reports -> Overall Corona Report in Bilkent

B Bilkent Pandemic Manager

Covid-19 Files

Courses

Risk Calculator

Covid-19 Reports

News

Send Feedback

James Ferdinand

NO RISK

Q

🔔

Overall Corona Report in Bilkent

Overall Corona Report in Bilkent

Bilkent University COVID-19 Report (October 22, 2021)

COVID-19 cases among Bilkent University staff and students currently followed up by the Health Center are as follows:

There are a total of 36 active cases.

Of these patients, 7 are academic staff, 3 are administrative staff, 2 are support staff, 21 are students, 3 are employees of on campus companies. During the last week, 20 new cases were reported and 23 patients have recovered.

All patients are being treated at home and in isolation. Their contacts in campus are thoroughly followed up by the Health Center. Those who are thought to be at risk are asked to get tested and/or quarantine themselves for 14 days.

We wish speedy recovery to all COVID patients.

User Main Page -> Dormitory Corona Report in Bilkent

B Bilkent Pandemic Manager

Covid-19 Files

Courses

Risk Calculator

Covid-19 Reports

News

Send Feedback

Q

🔔

James Ferdinand

NO RISK

Covid-19 Reports

Dormitory Corona Report in Bilkent

	Dormitory	Location	Number of Corona Cases
1	78	Central Campus	4
2	77	Central Campus	2
3	76	Central Campus	1
4	91	East Campus	0

User Main Page -> Lecture Corona Report in Bilkent

B Bilkent Pandemic Manager

Covid-19 Files

Courses

Risk Calculator

Covid-19 Reports

News

Send Feedback

Q

🔔

James Ferdinand

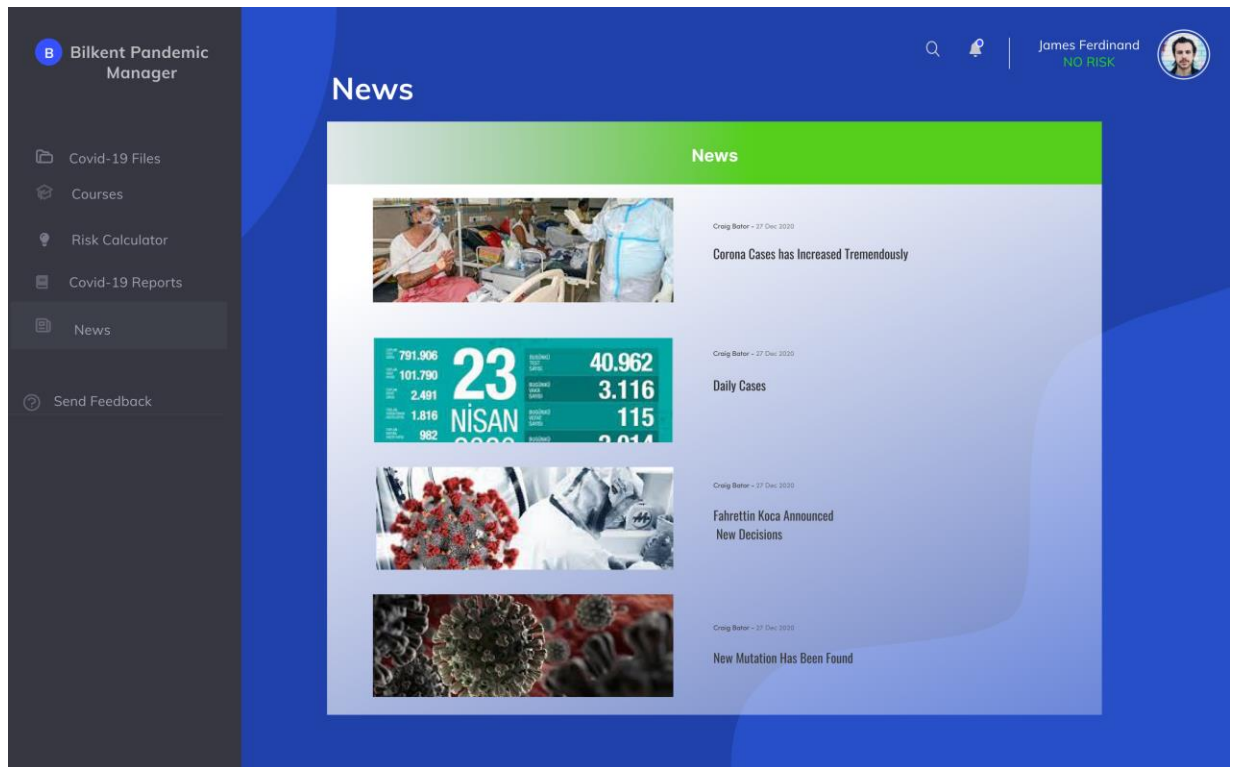
NO RISK

Covid-19 Reports

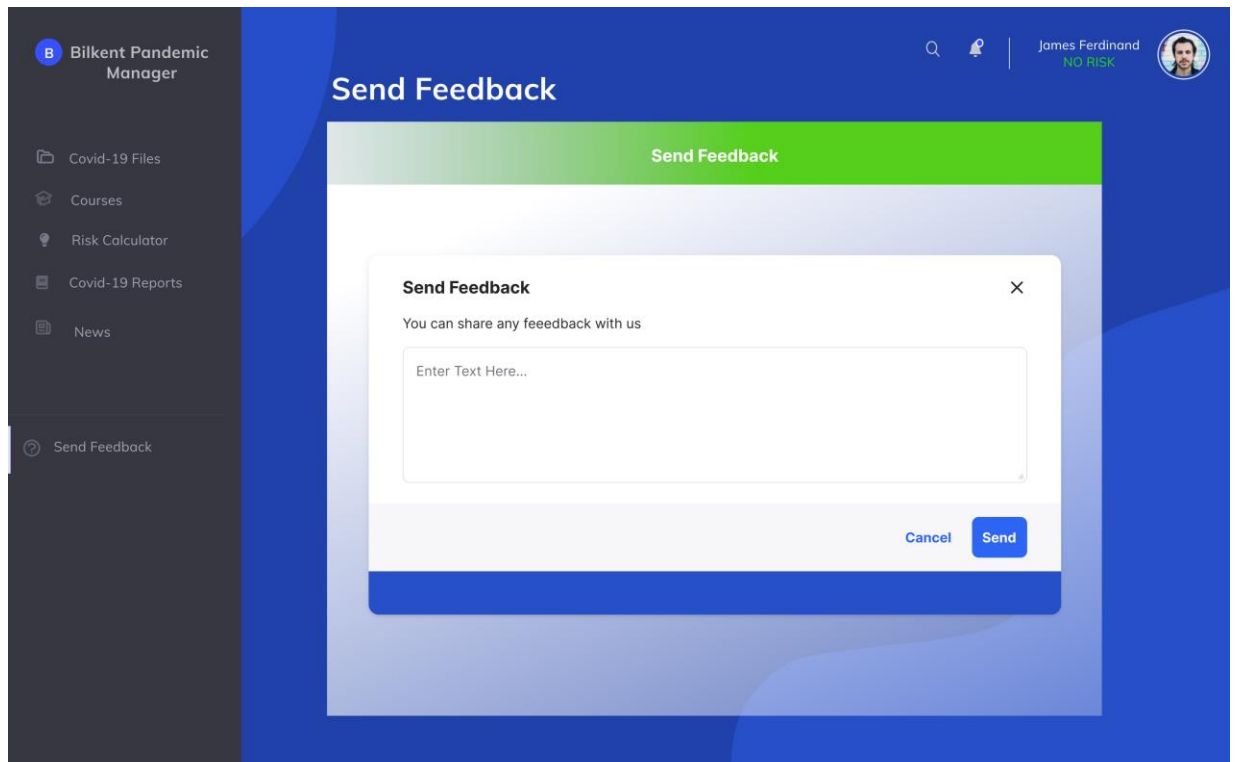
Lecture Corona Report in Bilkent

	Course Code	Course Name	Number Of Corona Cases
1	CS 299 - 001	Summer Training I	0
2	CS 315 - 003	Programming Languages	2
3	CS 319 - 003	Object-Oriented Software Engineering	0
4	MATH 230 - 003	Probability and Statistics for Engineers	1

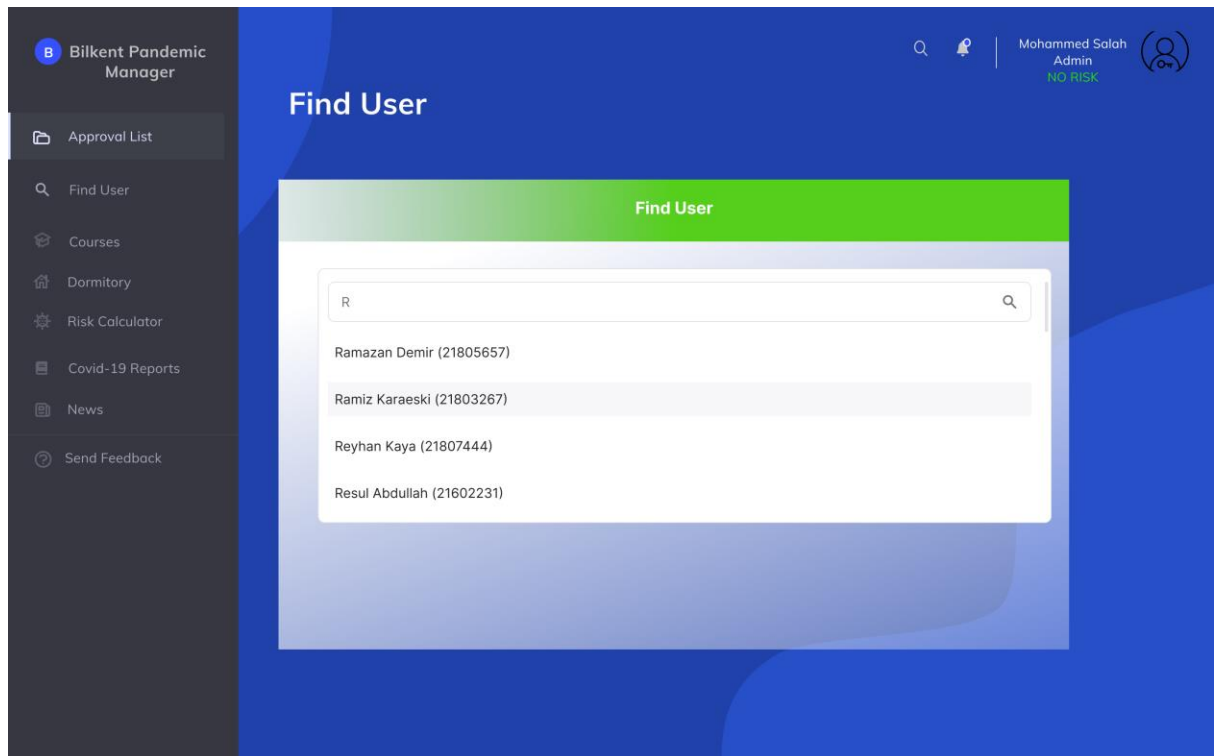
User Main Page ->News



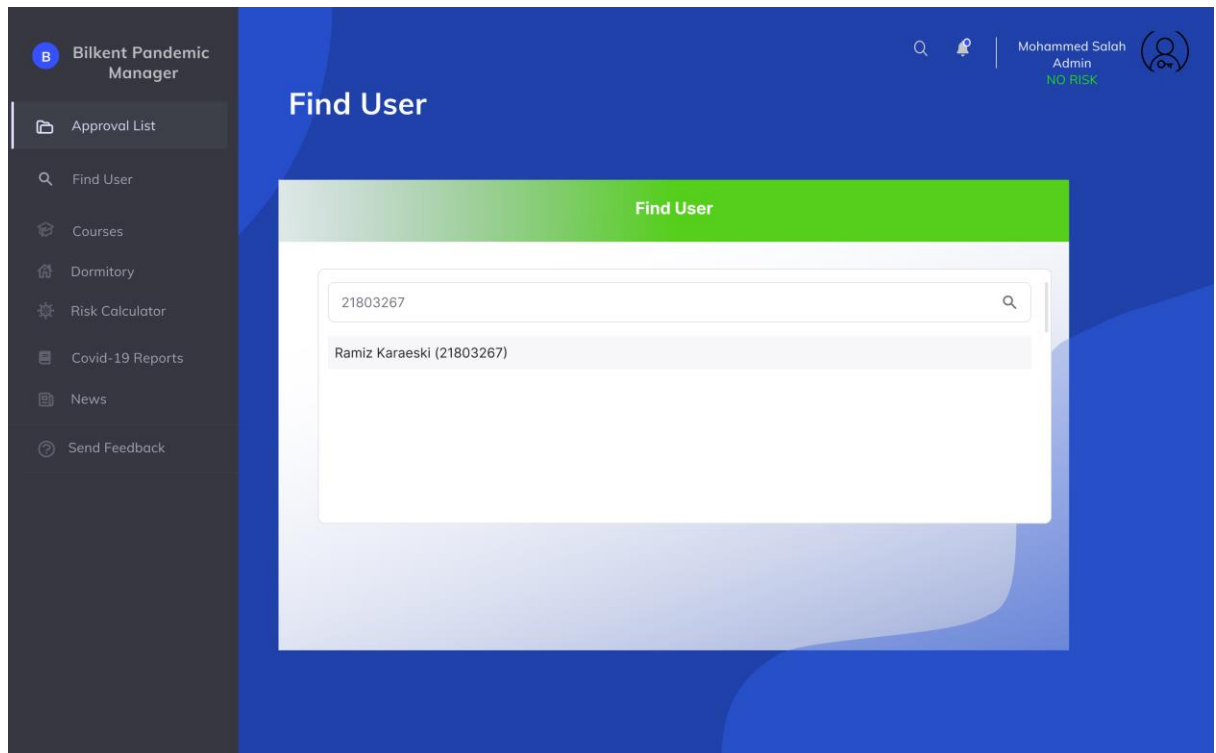
User Main Page -> Send Feedback



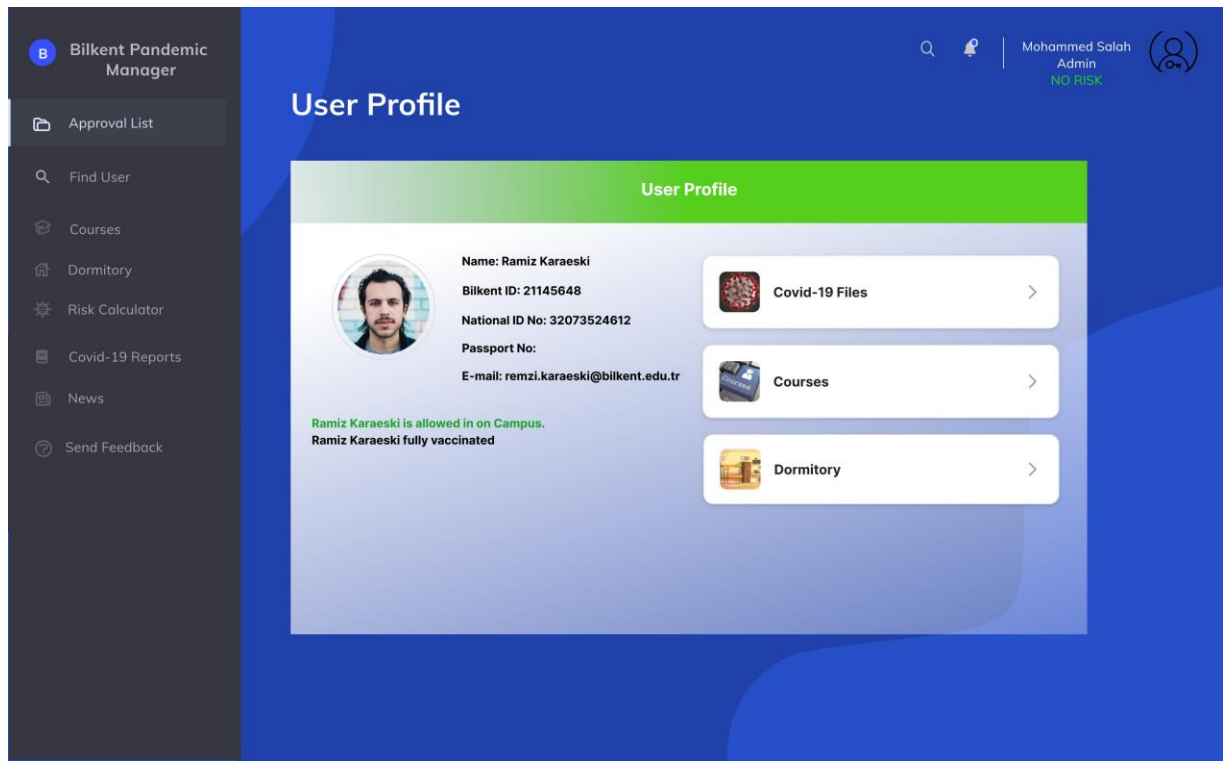
Admin Main Page -> Find User (Search By Name)



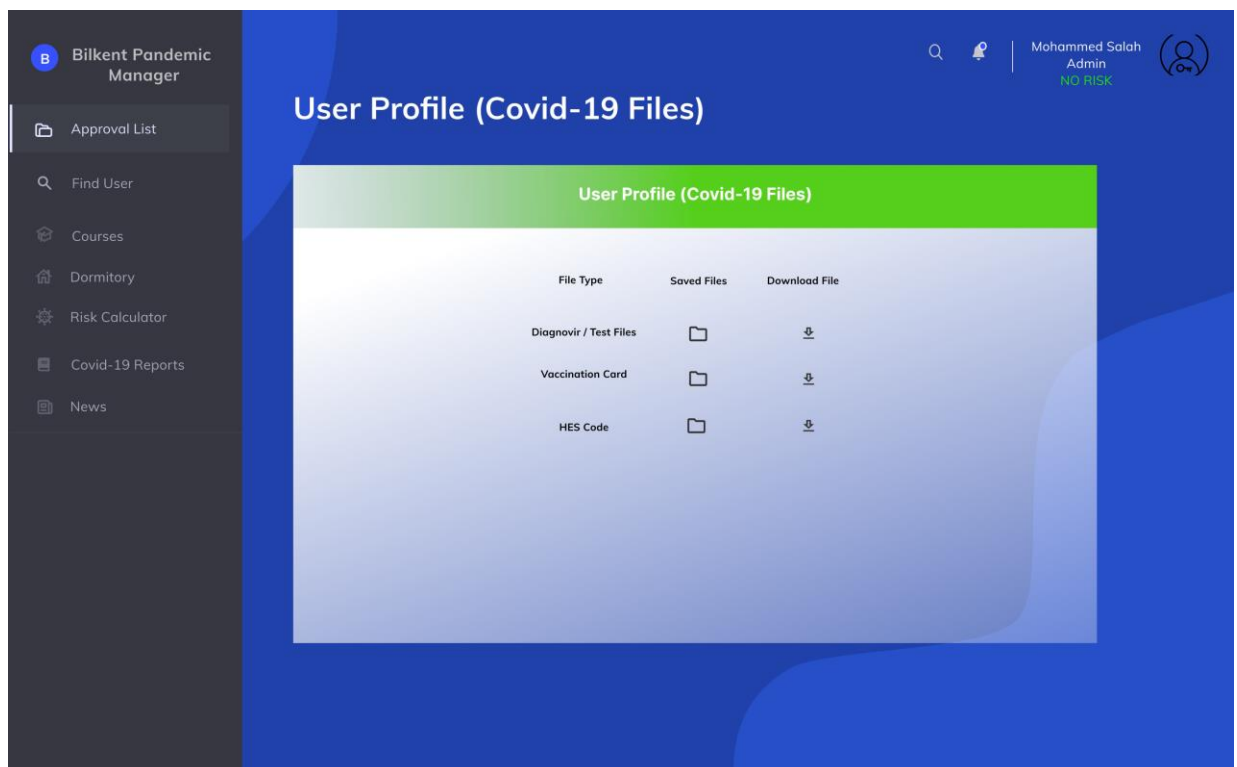
Admin Main Page -> Find User (Search By ID)



Admin Main Page -> User Profile (After Selecting User)



Admin Main Page -> User Profile-> Covid-19 Files



Admin Main Page -> User Profile -> Courses

B

Bilkent Pandemic Manager

Approval List

Find User

Courses

Dormitory

Risk Calculator

Covid-19 Reports

News

Q

🔔

Mohammed Salah

Admin

NO RISK

👤

0%

User Profile (Courses)

User Profile (Courses)

	Courses	Department	Section	Instructor	Number of Students
1	CS 101	CS	01	.....	49
2	MATH 101	MATH	02	.....	55
3	MBG 110	MBG	03	.....	60
4	ENG 101	ENG	04	.....	60

ADD COURSE

REMOVE COURSE

UPDATE COURSE

Admin Main Page -> User Profile -> Dormitory

B

Bilkent Pandemic Manager

Approval List

Find User

Courses

Dormitory

Risk Calculator

Covid-19 Reports

News

Q

🔔

Mohammed Salah

Admin

NO RISK

👤

0%

User Profile (Dormitory)

User Profile (Dormitory)

Dormitory	Floor	Block	Room	Number of Students	Date
78	1	B	143	3	21.09.2021 - Current
74	4	-	466	3	01.01.2020 - 25.06.2020

ADD DORMITORY INFO

REMOVE DORMITORY INFO

UPDATE DORMITORY INFO

41

Admin Main Page -> Courses

The screenshot displays the 'Courses' management interface within the Bilkent Pandemic Manager. The left sidebar contains navigation links: Approval List, Find User, Courses, Dormitory, Risk Calculator, Covid-19 Reports, and News. The main content area features a table with columns for Course, Department, Section, Instructor, and Number Of Students. The table lists four entries for CS 101, each with a unique section number (01, 02, 03, 04) and a corresponding number of students (49, 55, 60, 60). Below the table are three buttons: ADD COURSE (green), REMOVE COURSE (red), and UPDATE COURSE (blue). The top right corner shows the user profile: Mohammed Salah Admin, with a status of NO RISK.

	Course	Department	Section	Instructor	Number Of Students
1	CS 101	CS	01	.....	49
2	CS 101	CS	02	.....	55
3	CS 101	CS	03	.....	60
4	CS 101	CS	04	.....	60

ADD COURSE REMOVE COURSE UPDATE COURSE

Admin Main Page -> Dormitory

B

Bilkent Pandemic Manager

Approval List

Find User

Courses

Dormitory

Risk Calculator

Covid-19 Reports

News

Q

🔔

Mohammed Salah Admin
NO RISK

Dormitory

Dormitory No

Floor

Block

Room

Number Of Students

78	1	B	143	3
78	1	B	144	3
78	1	B	145	3
78	1	B	146	3

ADD DORMITORY

REMOVE DORMITORY

UPDATE DORMITORY

Admin Main Page -> Risk Calculator

B

Bilkent Pandemic Manager

Approval List

Find User

Courses

Dormitory

Risk Calculator

Covid-19 Reports

News

Q

🔔

Mohammed Salah Admin
NO RISK

Risk Calculator

1.Question text goes here.

2. Question text goes here.

APPLY

Admin Main Page -> Covid-19 Reports

The screenshot displays the 'Covid-19 Reports' section of the 'Bilkent Pandemic Manager' admin interface. The sidebar on the left contains navigation links: Approval List, Find User, Courses, Dormitory, Risk Calculator, Covid-19 Reports (selected), and News. The main content area features a green header for 'Covid-19 Reports' and a summary table with the following data:

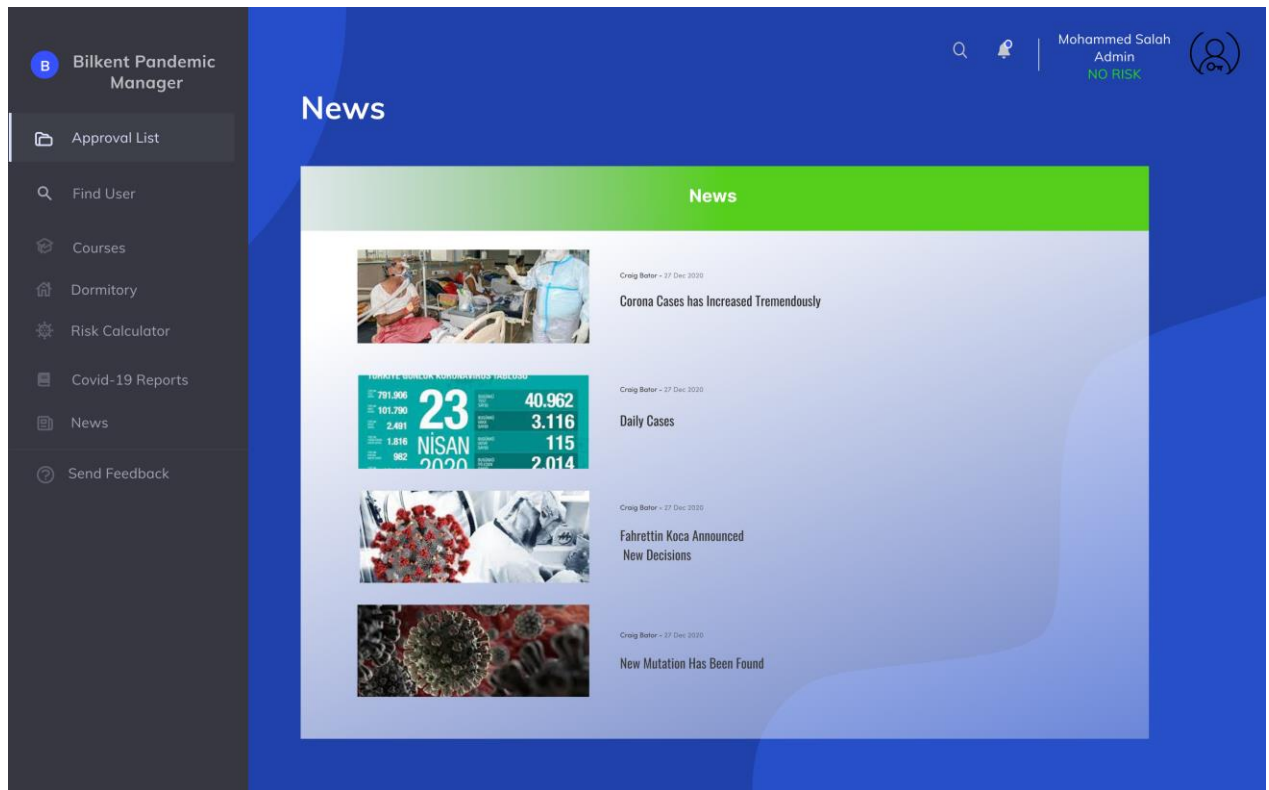
Daily Cases	Daily Death Number	Number of Tests	Number of recoveries
23096	203	344163	982

Below the table, there are three report cards, each dated 'Sep 15, 2021':

- Overall Corona Report in Bilkent
- Dormitory Corona Report in Bilkent
- Lecture Corona Report in Bilkent

The top right of the page shows the user 'Mohammed Salah Admin' with a 'NO RISK' status and a profile icon.

Admin Main Page -> News



3. Improvement Summary

There are some improvements present in this iteration over first iteration. They all explained briefly below.

3.1. General

The indentation problem in the overall report has been fixed and now it is better designed.

The organization and the order of some requirements such as “overview of the system” have been fixed and they are now correctly added.

3.2. Overview of the System

This part was not specified in the first iteration. Instead of this part, just a brief summary of the pages was explained. Now, all the pages are explained in detail for all users and admins.

This part was combined with the functional requirements in the first iteration. Now, it has a separate section which explains all the futures in more detail.

3.3. Functional Requirements

As mentioned earlier, this part was combined with “overview of the system”. Therefore, all the pages are omitted from here and added to “overview of the system” section. Instead of pages, only actual functionalities have been explained here.

3.4. Non- Functional Requirements

In this section, the non-functional requirements have been explained with more specifics such as which color should be used or which font size is better for a user-friendly interface.

3.5. Use Case Diagrams

Approving the Corona Files function has been handed over to E-Devlet API instead of admin itself. Also, earlier, the use case diagram was not readable at all. So, its size has been magnified and in case of insufficiency, it is divided into two part which are greater and more readable than the previous one.

3.6. State Diagrams

State diagrams re-designed and they are now more elegant and complex than before. They also meet all the corner cases etc.

3.7. Activity Diagrams

As state diagrams, activity diagrams are re-designed as well according to TA’s and instructor’s feedback.

3.8. Sequence Diagram

Insufficient sequence diagrams have been omitted. Instead of them, a well-designed sequence diagram has been added.

3.9. Class Diagram

New classes have been added such as “VARIANTS” and “QUARANTINE”. Also, unnecessary functions omitted from some classes.

4. Glossary and References

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