

# Exam Scheduler – Help & User Guide

## 1. Introduction

Exam Scheduling is intended to automatically generate the schedules for exams by considering the students, courses, classrooms, and some constraints related to academics. The system shall prevent conflicts in scheduling and provide an interface that is flexible and user-friendly in the processing of examination information.

This help document provides information on the use of the application, the process of scheduling, and procedures undertaken by the user to view, modify, reschedule, and export the exam schedules.

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## 2. Main Interface Overview

When the application is launched, the main window displays three primary data tables:

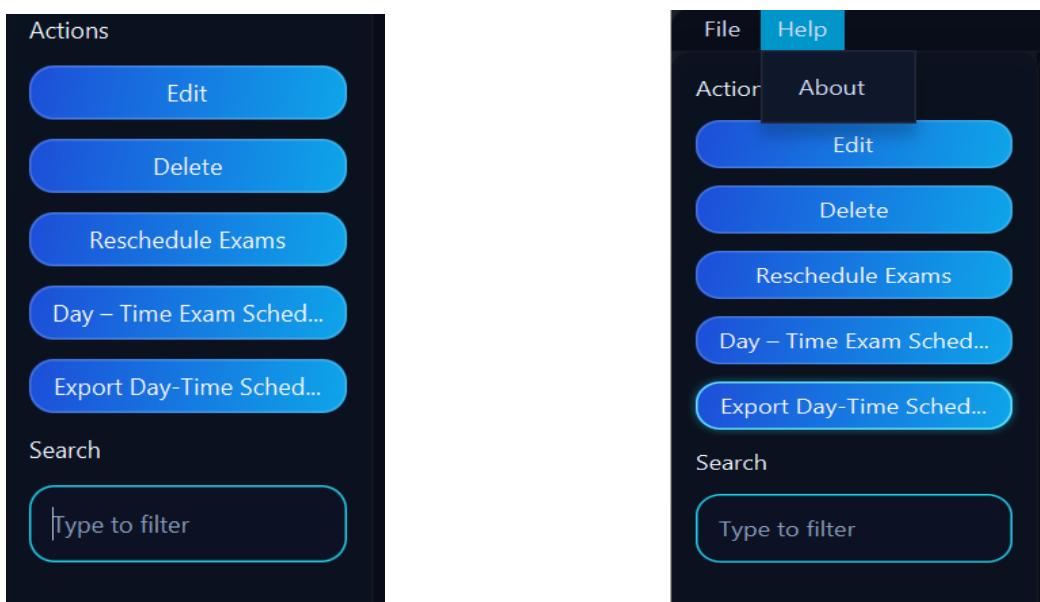
Courses Table – shows all courses, exam durations, and the number of enrolled students

Classrooms Table – shows classrooms, their capacities, and booking status

Students Table – shows students and the courses they are enrolled in

On the left side, the Actions Panel provides buttons for editing, deleting, rescheduling exams, viewing and exporting day-time schedules, and search area.

A menu bar at the top allows users to import and export data files and access this help document.



### 3. Importing Data

Before scheduling exams, the user must load the required data files.

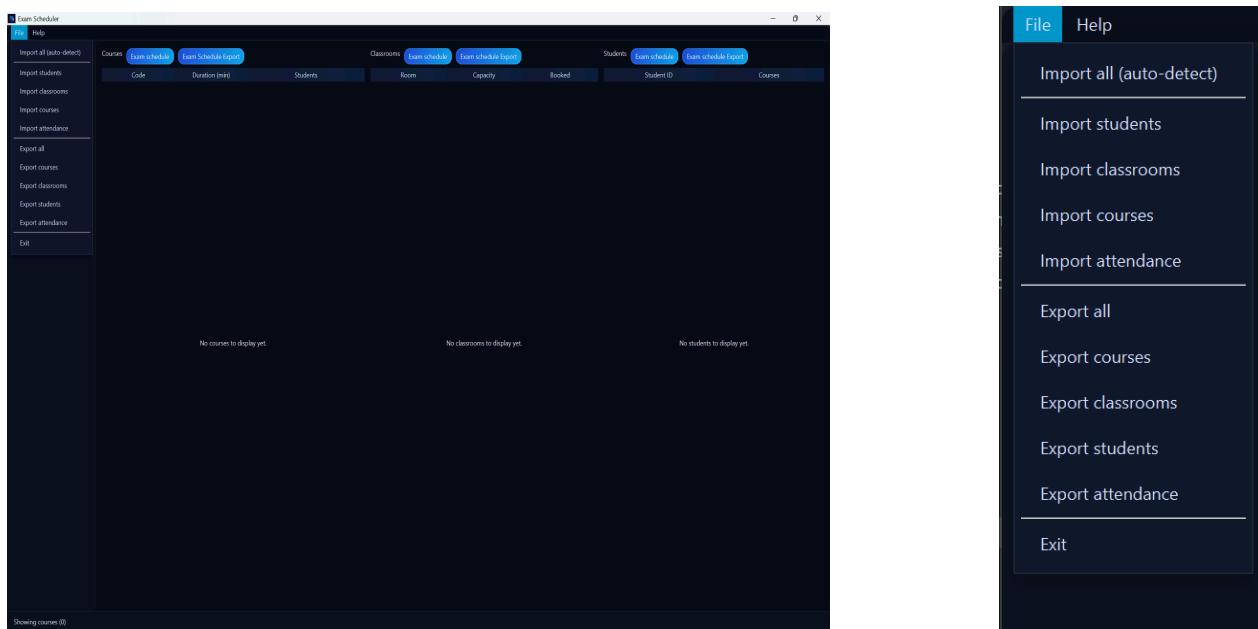
#### Supported Data Files

- **Students file** – list of all students in the system.
- **Courses file** – list of all courses and their exam durations.
- **Classrooms file** – classroom numbers and capacities.
- **Attendance file** – mapping between courses and enrolled students.
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#### File Menu and Options

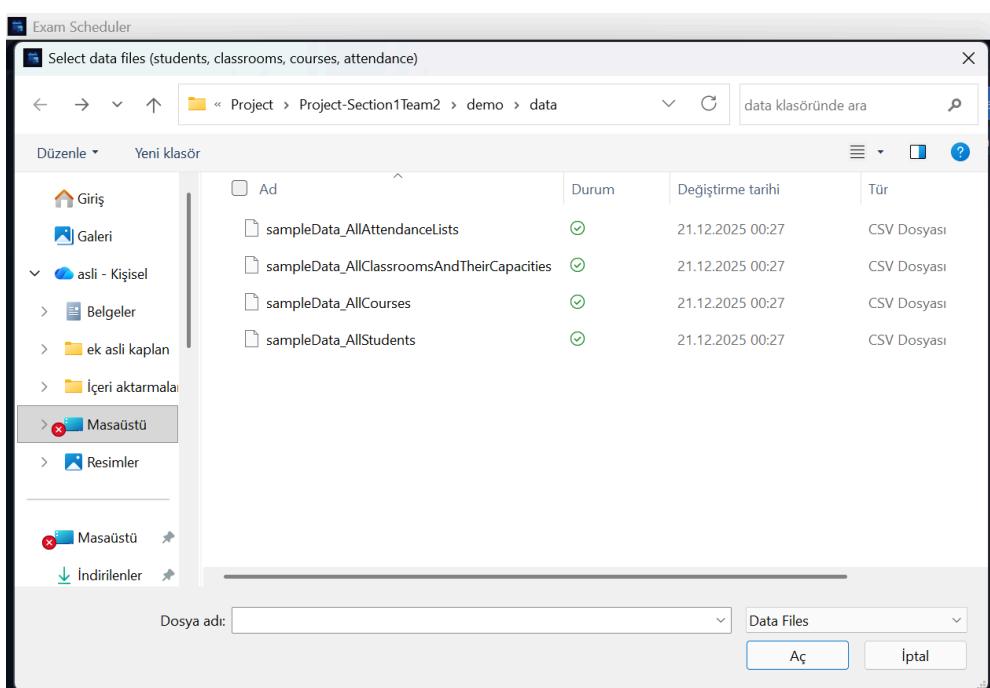
When the user clicks on the **File** menu, the following options are displayed:

- **Import all (auto-detect)**: The recommended method that automatically reads all required files.
- **Individual Import/Export**: Separate options for Students, Classrooms, Courses, and Attendance.
- **Exit**: Closes the application.



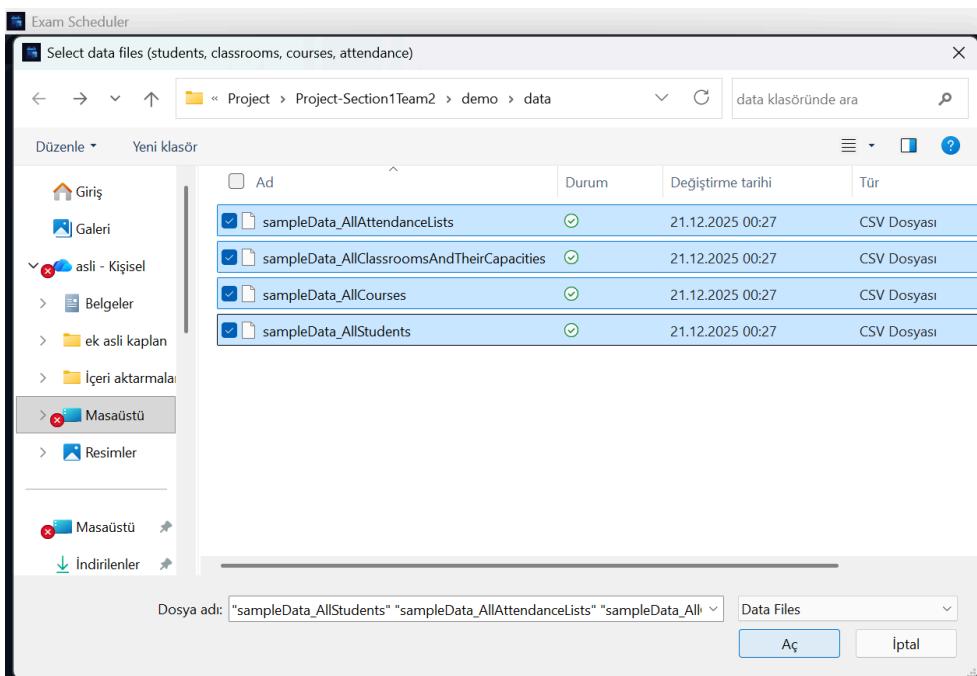
## 3.1 Locating Data Files

The recommended method is **File → Import All (Auto Detect)**. Clicking this opens a file selection window where the four necessary data files (Attendance, Classrooms, Courses, and Students) are located in the data folder.



## 3.2 Selecting Files for Import

To perform the "Import All" action, the user must select all four files simultaneously from the browser window. Once all files are highlighted, clicking the "**Aç**" (Open) button starts the automated detection and loading process.



### 3.3 Dashboard View After Import

After the "Import All" process is complete, the program screen updates with the following details:

- **Courses:** Shows the **Code**, **Duration (min)**, and the list of **Students** assigned to each course.
- **Classrooms:** Displays the **Room** number, its **Capacity**, and the current **Booked** status.
- **Students:** Lists each **Student ID** and the number of **Courses** they are taking.

A status message at the bottom confirms: "Auto-imported students, classrooms, courses, attendance."

Courses				Classrooms			Students		
	Code	Duration (min)	Students	Room	Capacity	Booked	Student ID	Courses	
	1	90	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29	1	40	0	1	4	
	2	90	30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59	2	40	0	2	4	
	3	90	60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89	3	40	0	3	4	
	4	90	90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115	4	40	0	4	4	
	5	90	120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143	5	40	0	5	4	
	6	90	150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173	6	40	0	6	4	
	7	90	180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203	7	40	0	7	4	
	8	90	210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233	8	40	0	8	4	
	9	90	240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263	9	40	0	9	4	
	10	90	270, 271, 272, 273, 274, 275, 276, 277	10	40	0	10	4	
	11	90		11	40	0	11	4	
	12	90		12	40	0	12	4	
	13	90		13	40	0	13	4	
	14	90		14	40	0	14	4	

Auto-imported students, classrooms, courses, attendance.

## 4. Exam Scheduling Rules

The scheduling algorithm follows these rules:

Each exam day lasts from 09:00 to 21:00

Time is divided into 30-minute blocks

A student can have at most two exams per day

There must be at least 30 minutes of break time between two exams for the same student

Exams cannot overlap in the same classroom

A classroom must have enough capacity for all attending students

If a single classroom is insufficient, the system may assign multiple classrooms to the same exam

These rules are enforced automatically during scheduling.

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## 5. Creating the Exam Schedule

Once all data is loaded, the system automatically generates the exam schedule.

The algorithm:

Prioritizes longer exams

Assigns the smallest possible suitable classroom

Distributes exams across multiple days if necessary

Ensures that all constraints are met

When scheduling is impossible, that is, in conflicting scenarios with the absence of resources, a warning message will appear and the program will end.

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## 6. Rescheduling Exams

The Reschedule Exams tool will recreate an entire examinations schedule.

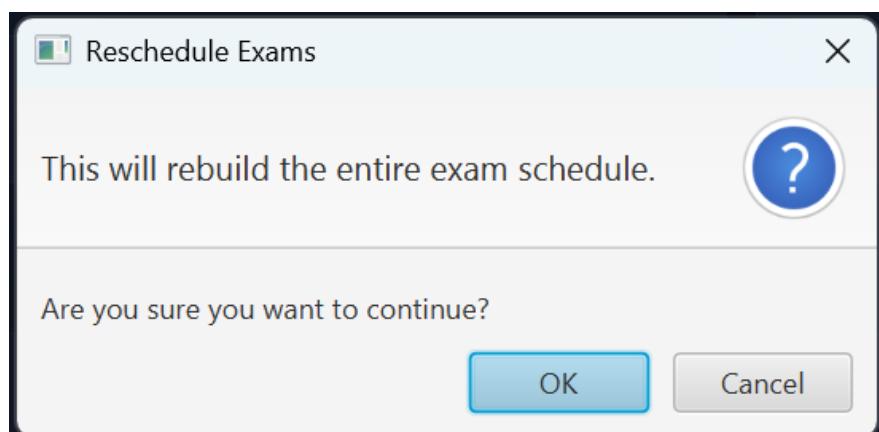
If this option is chosen:

All previous exam assignments are cleared

Student daily exam counters are reset

Classroom availability is reset

A new schedule is generated using the same rules.



## 7. Viewing Exam Schedules

The application provides multiple ways to view schedules:

**All Courses Exam Schedule** – shows every exam with classroom, day, time, and students

The screenshot shows the 'All Courses Exam Schedule' window. The grid displays the following data:

Course	Classroom	Capacity	Day	Time	Students
1	1	40	1	09:00 - 10:30	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29
2	5	40	2	12:30 - 14:00	30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59
3	5	40	2	14:00 - 15:30	60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89
4	1	40	1	13:00 - 14:30	90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119
5	3	40	1	13:00 - 14:30	120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146
6	2	40	2	12:30 - 14:00	150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176

At the bottom of the grid, there are two rows of student IDs: 185, 186, 187, 188, 189, 190, 191, 192, 193, 194 and 185, 186, 187, 188, 189.

Auto-imported students, classrooms, courses, attendance.

**Classroom Schedule** – displays all exams assigned to a specific classroom

The screenshot shows the 'All Classroom Exam Schedules' window for Classroom 1. The grid displays the following data:

Classroom	Capacity	Course	Day	Time	Students
1	40	1	1	09:00 - 10:30	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29
1	40	4	1	13:00 - 14:30	90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119
2	40	6	2	12:30 - 14:00	150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176
2	40	13	2	09:00 - 10:30	360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386

At the bottom of the grid, there are two rows of student IDs: 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164 and 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194.

Auto-imported students, classrooms, courses, attendance.

## Student Schedule – shows the personal exam timetable of a student

Student	Course	Classroom	Day	Time
1	1	1	1	09:00 - 10:30
1	14	5	4	09:00 - 10:30
1	27	4	1	15:00 - 16:30
1	40	5	2	09:00 - 10:30
2	1	1	1	09:00 - 10:30
2	14	5	4	09:00 - 10:30

Auto-imported students, classrooms, courses, attendance.

## Day–Time Schedule – displays exams grouped by day and time

These views help users easily analyze and verify the generated schedule.

Day	Time	Classroom	Course	Students
1	09:00 - 10:30	1	1	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29
1	09:00 - 10:30	5	7	180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209
1	09:00 - 10:30	3	12	330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359
1	09:00 - 10:30	2	15	30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 300, 301, 302, 303, 304, 305, 306, 307, 308
1	09:00 - 10:30	4	15	30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 300, 301, 302, 303, 304, 305, 306, 307, 308

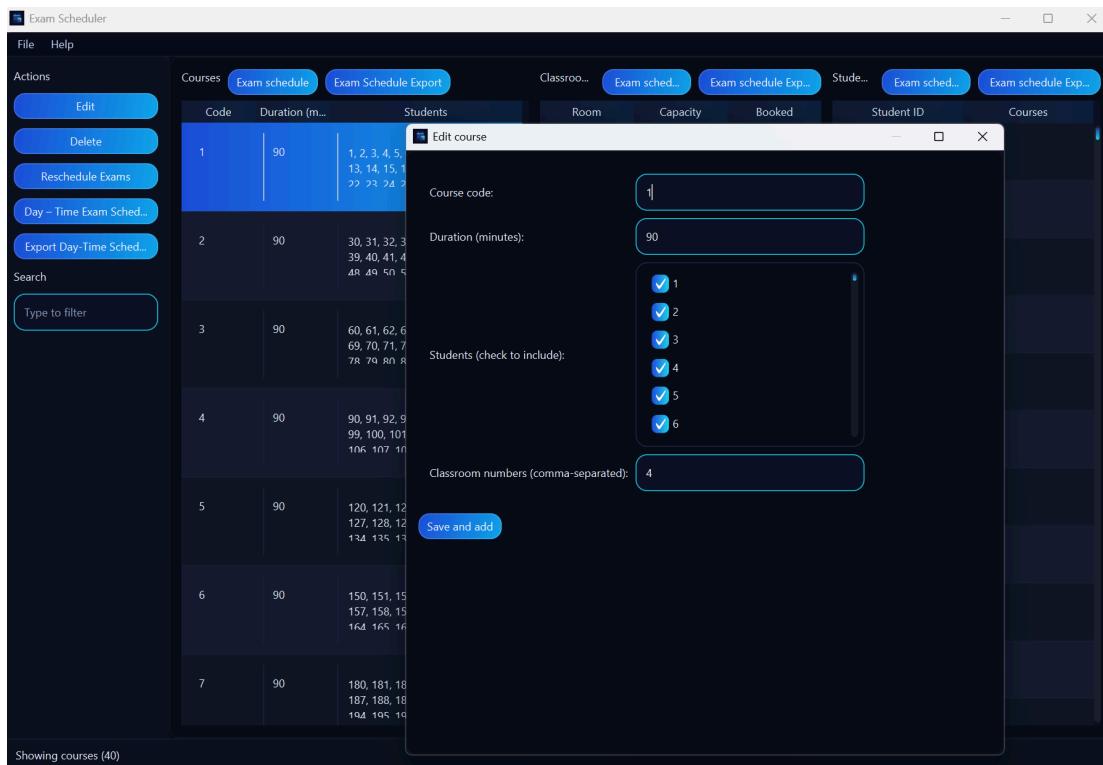
Auto-imported students, classrooms, courses, attendance.

## 8. Editing and Managing Data

Users can edit or delete students, courses, or classrooms to keep the system updated. After any major change, it is recommended to use Reschedule Exams to regenerate a consistent timetable.

### Edit Courses

In this window, you can update the **Course code** and **Duration (minutes)**. You can manage the **Attendance** list by checking or unchecking specific students to include or remove them from the course. Finally, use the **Save and add** button to apply the changes.



### Edit Classrooms

This screen allows you to modify the **Room number** and the maximum student **Capacity** for the selected classroom. Click the **Save changes** button to finalize your updates.

The screenshot shows the Exam Scheduler application window. On the left, a sidebar contains actions like Edit, Delete, Reschedule Exams, Day-Time Exam Sched..., Export Day-Time Sched..., and Search, along with a 'Type to filter' input field. The main area has tabs for Courses, Exam schedule, Exam Schedule Export, Classroom, Exam sched..., Exam schedule Exp..., Student, Exam sched..., and Exam schedule Exp... The Classroom tab is active, displaying a grid of classrooms. A modal dialog titled 'Edit classroom' is open over the grid, showing fields for Room number (set to 2) and Capacity (set to 40), with a 'Save changes' button at the bottom. The grid below shows various classrooms with their room numbers, capacities (mostly 40), and booked status (mostly 0). The bottom status bar indicates 'Showing classrooms (5)'.

## Edit Students

You can use this interface to update the **Student ID** to ensure individual records are correct. Once edited, click **Save changes** to store the new information.

The screenshot shows the Exam Scheduler application window. The sidebar and tabs are identical to the previous screenshot. A modal dialog titled 'Edit student' is open over the grid, showing a field for Student ID (set to 1) and a 'Save changes' button at the bottom. The grid below shows various students with their student IDs, courses (mostly 4), and booked status (mostly 0). The bottom status bar indicates 'Showing students (400)'.

# 9. Exporting Data

The system supports exporting all processed data and generated schedules in **CSV format**, allowing them to be opened and managed in spreadsheet applications like **Microsoft Excel**.

## 9.1 Dynamic Exporting Logic

The application features a context-sensitive export system. Depending on whether a specific row is selected, the exported content will change:

- Specific Export:** If a specific row (Course, Classroom, or Student) is selected in the dashboard, the system exports only the data related to that specific item.

### Example of classroom category:

```
demo > data > [ ] specific classroom export schedule.csv
1 Classroom,Capacity,Course,Day,Time,Students
2 5,40,1,1,13:00 - 14:30;"1; 2; 3; 4; 5; 6; 7; 8; 9; 10; 11; 12; 13; 14; 15; 16; 17; 18; 19; 20; 21; 22; 23; 24; 25; 26; 27; 28; 29"
3 5,40,3,2,16:30 - 18:00;"60; 61; 62; 63; 64; 65; 66; 67; 68; 69; 70; 71; 72; 73; 74; 75; 76; 77; 78; 79; 80; 81; 82; 83; 84; 85; 86; 87; 88; 89"
4 5,40,5,1,14:30 - 16:00;"120; 121; 122; 123; 124; 125; 126; 127; 128; 129; 130; 131; 132; 133; 134; 135; 136; 137; 138; 139; 140; 141; 142; 143; 144; 145; 146; 147; 148; 149; 150; 151; 152; 153; 154; 155; 156; 157; 158; 159; 160; 161; 162; 163; 164; 165; 166; 167; 168; 169; 170; 171; 172; 173; 174; 175; 176; 177; 178; 179; 180; 181; 182; 183; 184; 185; 186; 187; 188; 189; 190; 191; 192; 193; 194; 195; 196; 197; 198; 199; 200; 201; 202; 203; 204; 205; 206; 207; 208; 209; 210; 211; 212; 213; 214; 215; 216; 217; 218; 219; 220; 221; 222; 223; 224; 225; 226; 227; 228; 229; 230; 231; 232; 233; 234; 235; 236; 237; 238; 239; 240; 241; 242; 243; 244; 245; 246; 247; 248; 249; 250; 251; 252; 253; 254; 255; 256; 257; 258; 259; 260; 261; 262; 263; 264; 265; 266; 267; 268; 269; 270; 271; 272; 273; 274; 275; 276; 277; 278; 279; 280; 281; 282; 283; 284; 285; 286; 287; 288; 289; 290; 291; 292; 293; 294; 295; 296; 297; 298; 299; 300; 301; 302; 303; 304; 305; 306; 307; 308; 309; 310; 311; 312; 313; 314; 315; 316; 317; 318; 319; 320; 321; 322; 323; 324; 325; 326; 327; 328; 329; 330; 331; 332; 333; 334; 335; 336; 337; 338; 339; 340; 341; 342; 343; 344; 345; 346; 347; 348; 349; 350; 351; 352; 353; 354; 355; 356; 357; 358; 359; 360; 361; 362; 363; 364; 365; 366; 367; 368; 369; 370; 371; 372; 373; 374; 375; 376; 377; 378; 379; 380; 381; 382; 383; 384; 385; 386; 387; 388; 389; 390; 391; 392; 393; 394; 395; 396; 397; 398; 399; 400; 1; 2; 3; 4; 5; 6; 7; 8; 9; 10; 11; 12; 13; 14; 15; 16; 17; 18"
```

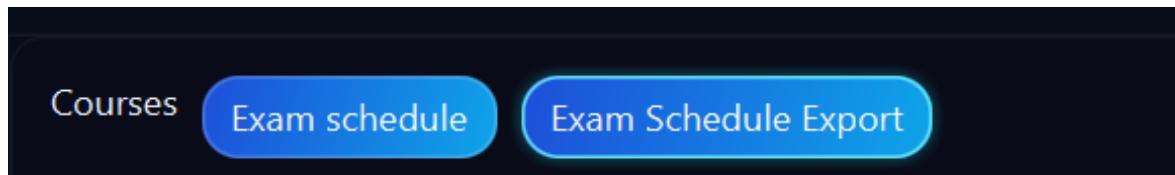
- Bulk Export:** If no row is selected, clicking an export button will automatically export all data for that entire category.

```
demo > data > [ ] bulk classroom export schedule.csv
1 Classroom,Capacity,Course,Day,Time,Students
2 1,40,7,1,09:00 - 10:30;"100; 181; 182; 183; 184; 185; 186; 187; 188; 189; 190; 191; 192; 193; 194; 195; 196; 197; 198; 199; 200; 201; 202; 203; 204; 205; 206; 207; 208; 209; 210; 211; 212; 213; 214; 215; 216; 217; 218; 219; 220; 221; 222; 223; 224; 225; 226; 227; 228; 229; 230; 231; 232; 233; 234; 235; 236; 237; 238; 239; 240; 241; 242; 243; 244; 245; 246; 247; 248; 249; 250; 251; 252; 253; 254; 255; 256; 257; 258; 259; 260; 261; 262; 263; 264; 265; 266; 267; 268; 269; 270; 271; 272; 273; 274; 275; 276; 277; 278; 279; 280; 281; 282; 283; 284; 285; 286; 287; 288; 289; 290; 291; 292; 293; 294; 295; 296; 297; 298; 299; 300; 301; 302; 303; 304; 305; 306; 307; 308; 309; 310; 311; 312; 313; 314; 315; 316; 317; 318; 319; 320; 321; 322; 323; 324; 325; 326; 327; 328; 329; 330; 331; 332; 333; 334; 335; 336; 337; 338; 339; 340; 341; 342; 343; 344; 345; 346; 347; 348; 349; 350; 351; 352; 353; 354; 355; 356; 357; 358; 359; 360; 361; 362; 363; 364; 365; 366; 367; 368; 369; 370; 371; 372; 373; 374; 375; 376; 377; 378; 379; 380; 381; 382; 383; 384; 385; 386; 387; 388; 389; 390; 391; 392; 393; 394; 395; 396; 397; 398; 399; 400; 1; 2; 3; 4; 5; 6; 7; 8; 9; 10; 11; 12; 13; 14; 15; 16; 17; 18; 19; 20; 21; 22; 23; 24; 25; 26; 27; 28; 29"
```

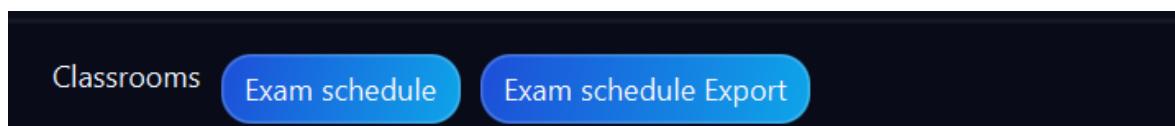
## 9.2 Available Export Options

Users can export specific datasets directly from the main dashboard headers or the actions panel:

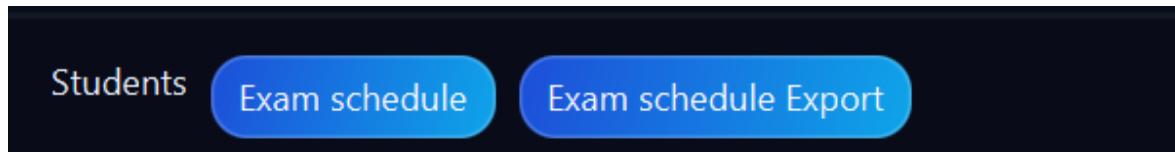
- **Course Schedules:** Export course schedules



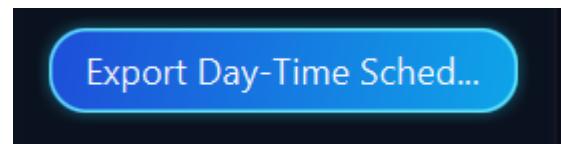
- **Classroom Schedules:** Export classroom schedule



- **Student Schedules:** Export student schedules

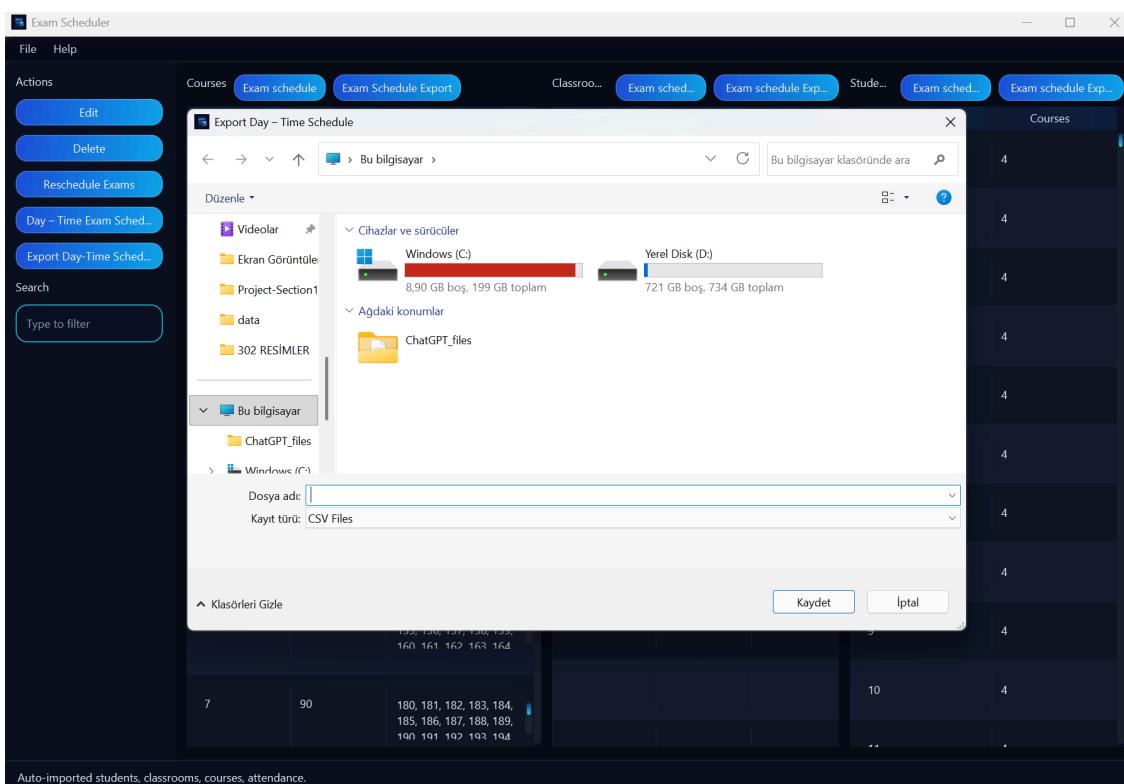


- **Day-Time Schedules:** A comprehensive export of the entire exam period organized chronologically. This file exports the Day, Time, Classroom, Course, and Students list for every scheduled exam.



## 9.3 How to Export

- Select Data (Optional):** Click on a specific row for a single item export, or leave all rows unselected for a full category export.
- Initiate Export:** Click the Exam Schedule Export button above the desired table or the Export Day-Time Schedule button in the Actions panel.
- Save File:** A system dialogue will appear. Choose your save location, enter a file name, and click **Kaydet (Save)** to generate the CSV file.



(example of Export Day-Time Exam Schedule)

## 10. Help and Support

This help document can be viewed at any time from the Help menu, which is inside the application.

It aims to help the user navigate all major facilities of the system and comprehensively interpret the logic of the scheduling system.