

CENG206 Proje Report

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Pseudocode for our algorithm

1. Create empty lists: allCourses, allInstructors, allServices, allClassrooms
2. Create a new Schedule object with allClassrooms
3. Define weekdays: Monday, Tuesday, Wednesday, Thursday, Friday
4. Define time slots: 8:30, 9:30, 10:30, 11:30, ..., 15:30
5. Call busyService to get and store instructor list
6. Call classroomService to get and store classroom list (resetting each classroom)
7. Call courseService to get and store course list (resetting each course)
8. Call serviceService to get and store service list
9. For each service in allServices:
 - 9.1. Find corresponding course using course code
 - 9.2. Loop through service timings
 - 9.2.1. If course hours are full or instructor is busy, skip to next service
 - 9.2.2. Loop through all classrooms
 - 9.2.2.1. Check if current or next classroom has space for this course at this time
 - 9.2.2.2. If there's space and student count fits, add course to schedule in that classroom
10. For each course in allCourses:
 - 10.1. If course hours are full, skip to next course
 - 10.2. Loop through required course hours
 - 10.2.1. Loop through weekdays
 - 10.2.1.1. If course hours are full, break out of weekday loop
 - 10.2.1.2. If course requirement is met, move to next required hours
 - 10.2.2. Loop through time slots starting from this time onwards
 - 10.2.2.1. If course hours are full, break out of time loop
 - 10.2.2.2. Check if instructor is busy or there's a course from the same semester at
 - 10.2.2.3. Loop through all classrooms
 - 10.2.2.3.1. If there's space for this course and student count fits (considering
 - 10.3. If course hours are not yet full, try to increase classroom capacity to fit the course
11. Check for unplaced courses: loop through allCourses, add unplaced courses to a separate list
12. If there are unplaced courses:
 - 12.1. Repeat steps 10 and 11 for the unplaced courses
 - 12.2. If there are still unplaced courses after another attempt, raise an alert and exit
13. Otherwise, convert the schedule object into arrays for better manipulation

Class Diagrams

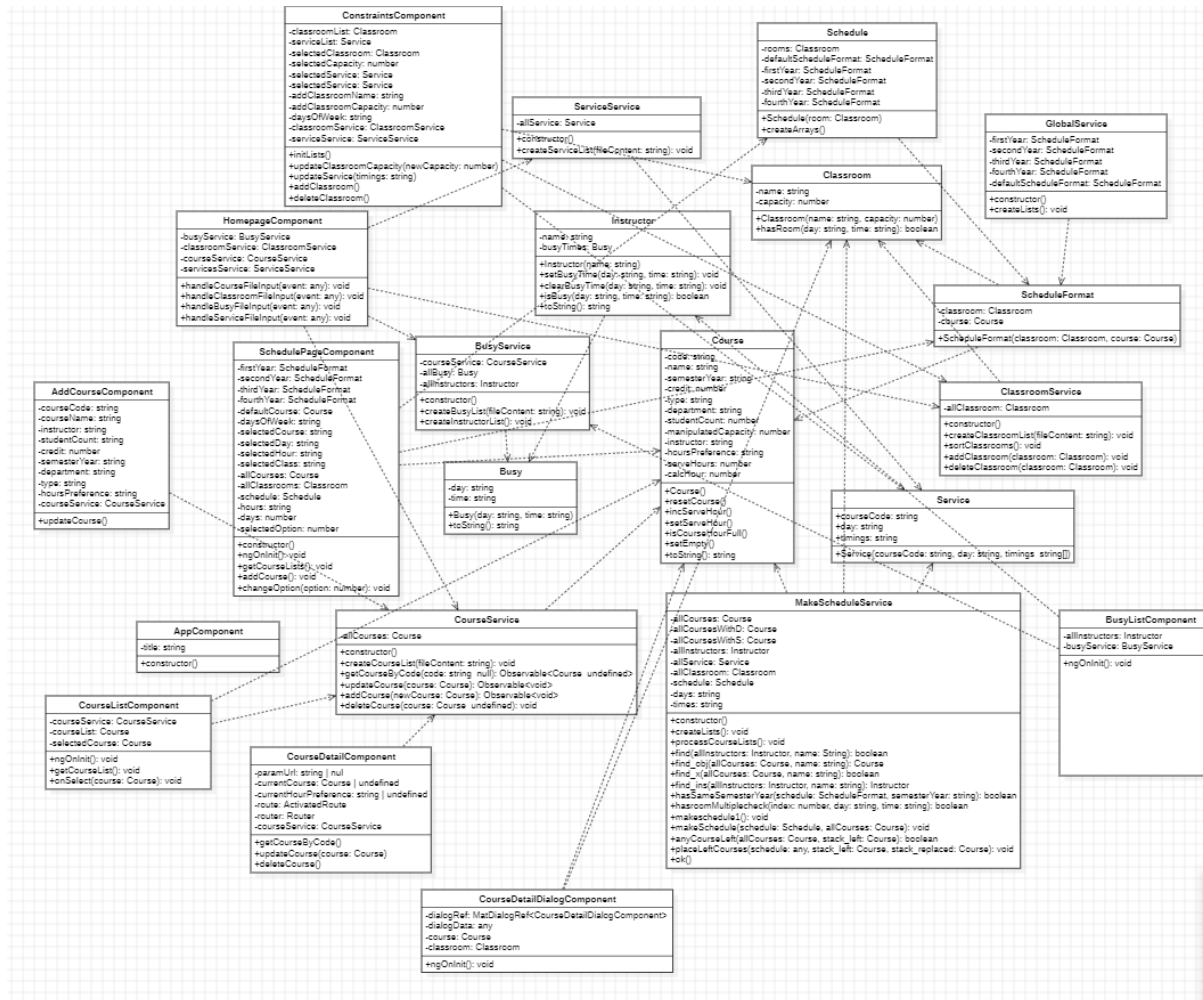


Figure 1: Class Diagram

Screenshots

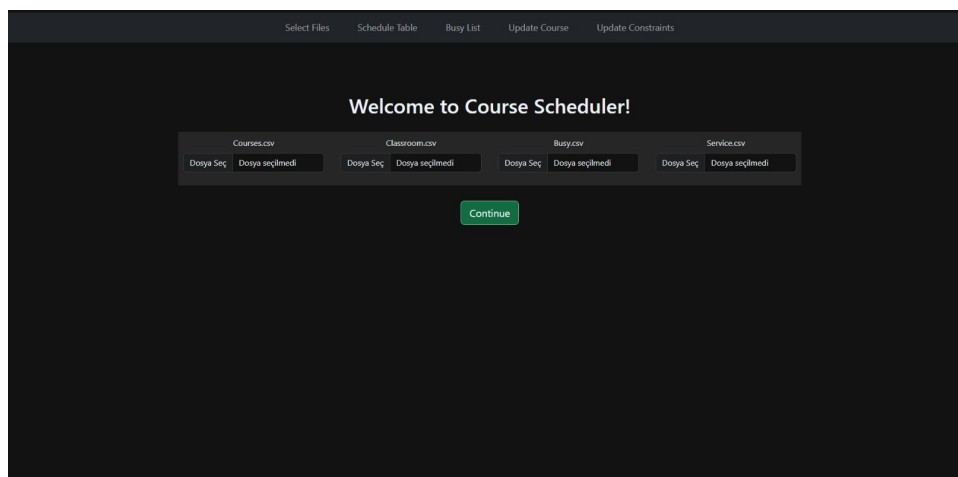


Figure 2: Select Course Page

Select Files

Schedule Table

Busy List

Update Course

Update Constraints

Course Schedule Table

I.YII

TIME	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
08:30-09:30	-	-	-	-	-
09:30-10:30	-	-	-	-	-
10:30-11:30	-	-	-	-	-
11:30-12:30	-	-	-	-	-
12:30-13:30	-	-	-	-	-
13:30-14:30	-	-	-	-	-
14:30-15:30	-	-	-	-	-
15:30-16:30	-	-	-	-	-

Add Course Manually

Select Course Name

Select Day

Select Hour

Select Class

Make Automatic Schedule

Figure 3: Empty Table Page

II.YII

TIME	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
8:30-09:30	-	-	-	-	-
9:30-10:30	-	-	-	-	-
10:30-11:30	-	-	-	-	-
11:30-12:30	-	-	-	-	-
12:30-13:30	-	-	-	-	-
13:30-14:30	-	-	-	-	-
14:30-15:30	-	-	-	-	-
15:30-16:30	-	-	-	-	-

Add Course Manually

Parallel Programming I

Tuesday

12:30-13:30

B403

Add Course

Make Automatic Schedule

Figure 4: Table Before Manual Course Selection

III, YII

Course Schedule Table

TIME	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
8:30-09:30	-	-	-	-	-
9:30-10:30	-	-	-	-	-
10:30-11:30	-	-	-	-	-
11:30-12:30	-	-	-	-	-
12:30-13:30	-	CENG342 - B403	-	-	-
13:30-14:30	-	-	-	-	-
14:30-15:30	-	-	-	-	-
15:30-16:30	-	-	-	-	-

Add Course Manually

Select Course Name

Select Day

Select Hour

Select Class

Add Course

Make Automatic Schedule

Figure 5: Table After Manual Course Selection

I, YII

Course Schedule Table

TIME	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
8:30-09:30	MATH104 - B503	CHEM101 - B503	TIT101 - B503	CENG114 - B403	PHYS102 - B503
9:30-10:30	MATH104 - B503	CHEM101 - B503	TIT101 - B503	CENG114 - B403	PHYS102 - B503
10:30-11:30	MATH104 - B503	CHEM101 - B503	TIT101 - B503	CENG114 - B403	PHYS102 - B503
11:30-12:30	-	-	-	-	-
12:30-13:30	-	-	-	-	-
13:30-14:30	MATH102 - B503	-	TDL102 - B403	MATH106 - B403	-
14:30-15:30	MATH102 - B503	-	TDL102 - B403	MATH106 - B403	-
15:30-16:30	MATH102 - B503	-	TDL102 - B403	MATH106 - B403	-

Add Course Manually

Select Course Name

Select Day

Select Hour

Select Class

Add Course

Make Automatic Schedule

Figure 6: Table After Automatic Schedule Generation

I, YII

Course Schedule Table

TIME	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
8:30-09:30	MATH104 - B503	CHEM101 - B503	TIT101 - B503	CENG114 - B403	PHYS102 - B503
9:30-10:30	MATH104 - B503	CHEM101 - B503	TIT101 - B503	CENG114 - B403	PHYS102 - B503
10:30-11:30	MATH104 - B503	CHEM101 - B503	TIT101 - B503	CENG114 - B403	PHYS102 - B503
11:30-12:30	-	-	-	-	-
12:30-13:30	-	-	-	-	-
13:30-14:30	MATH102 - B503	-	TDL102 - B403	MATH106 - B403	-
14:30-15:30	MATH102 - B503	-	TDL102 - B403	MATH106 - B403	-
15:30-16:30	MATH102 - B503	-	TDL102 - B403	MATH106 - B403	CENG114 - B503

Add Course Manually

Select Course Name

Select Day

Select Hour

Select Class

Add Course

Make Automatic Schedule

Figure 7: Manually Add Course After Automatic Schedule Generation

Busy List		
Instructor Name	Busy Day	Busy Hours
OGR.GOR. YUSUF EVREN AYKAC	Monday	8:30
OGR.GOR. YUSUF EVREN AYKAC	Monday	9:30
OGR.GOR. YUSUF EVREN AYKAC	Monday	11:30
OGR.GOR. YUSUF EVREN AYKAC	Monday	12:30
OGR.GOR. YUSUF EVREN AYKAC	Tuesday	8:30
OGR.GOR. YUSUF EVREN AYKAC	Tuesday	9:30
OGR.GOR. YUSUF EVREN AYKAC	Tuesday	11:30
OGR.GOR. YUSUF EVREN AYKAC	Tuesday	12:30
OGR.GOR. YUSUF EVREN AYKAC	Tuesday	15:30
DOC.DR. NURAY CELEBI	Monday	8:30
DOC.DR. NURAY CELEBI	Monday	9:30
DOC.DR. NURAY CELEBI	Monday	12:30
DOC.DR. NURAY CELEBI	Monday	13:30
DOC.DR. NURAY CELEBI	Monday	14:30
DOC.DR. NURAY CELEBI	Friday	12:30
DOC.DR. NURAY CELEBI	Friday	13:30

Figure 8: Busy List Page

All Courses		Add Course
CENG114	Computer Programming II	Details →
CHEM101	GENERAL CHEMISTRY	Details →
MATH104	Applied Linear Algebra	Details →
MATH102	CALCULUS II	Details →
MATH106	PROBABILITY AND STATISTICS	Details →
PHYS102	PHYSICS II	Details →
TDL102	TURK DILI II	Details →
TTT101	TURK INKILAP TARIHI I	Details →
CENG202	Data Structures	Details →
CENG204	Computer System Architecture	Details →
CENG206	Programming Languages	Details →
ENGR202	ENGINEERING MATHEMATICS II	Details →
ENGR254	PRINCIPLES OF BODY MOVEMENT	Details →
CENG302	Formal Languages and Automata Theory	Details →
CENG304	Computer Networks	Details →
CENG306	Software Engineering	Details →

Figure 9: Course List Page

Navigation: Select Files, Schedule Table, Busy List, Update Course, Update Constraints

Add Course

Course Code:

Course Name:

Instructor Name:

Student Count:

Credit:

Semester/Year: ☐ 1 ☐ 2 ☐ 3 ☐ 4

Department: ☐ Department ☐ Service

Type: ☐ Compulsory ☐ Elective

Hours Preference: ☐ 3 ☐ 2+1

[Update](#)

Figure 10: Add Course Page

CENG311	WEB TECHNOLOGY APPLICATIONS	Details →
CENG342	Parallel Programming I	Details →
CENG404	Special Topics in CENG II	Details →
CENG415	Applications of Computer Graphics	Details →
CENG424	COMPUTER SIMULATION AND MODELLING	Details →
CENG427	Programming of Mobile Devices	Details →
CENG428	NEURAL NETWORKS	Details →
CENG431	INTRODUCTION TO DESING PATTERNS	Details →
CENG451	Principles of Cyber Physical Systems	Details →
CENG462	GAME PROGRAMMING PIPELINE	Details →
CENG465	INTERNET OF THINGS AND ITS APPLICATIONS	Details →
CENG474	COMMUNICATION AND NETWORK SECURITY	Details →
HASANHASANHASAN	HASANHASANHASAN	Details →

Figure 11: Course List Page After Manual Course Addition

Select Files

Schedule Table

Busy List

Update Course

Update Constraints

Course Schedule Table

IL Yıl

TIME	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
8:30-09:30	CENG202 - B403	-	-	-	-
9:30-10:30	CENG202 - B403	-	-	-	-
10:30-11:30	CENG202 - B403	-	-	-	-
11:30-12:30	CENG204 - B403	CENG206 - B503	CENG206 - B503	-	ENGR202 - B503
12:30-13:30	CENG204 - B403	CENG206 - B503	-	-	ENGR202 - B503
13:30-14:30	CENG204 - B403	ENGR254 - C408	-	-	ENGR202 - B503
14:30-15:30	-	ENGR254 - C408	-	HASANHASANHASAN - C408	-
15:30-16:30	-	ENGR254 - C408	-	HASANHASANHASAN - C408	HASANHASANHASAN - C408

Add Course Manually

Select Course Name

Select Day

Select Hour

Select Class

Make Automatic Schedule

Figure 12: Table after Manual Course Addition

Course Information Update For
HASANHASANHASAN

Course Name

HASANHASANHASAN

Instructor Name

DR. OGR. UYESI FAHREDDIN SUKRU TORUN

Student Count

1111

Credit

1

Semester/Year

☐ 1
☒ 2
☐ 3
☐ 4

Department

☒ Department
☐ Service

Type

☒ Compulsory
☐ Elective

Hours Preference

☒ 3
☐ 2+1

Update

Delete

Figure 13: Edit Course Page

Course Information Update For HASANHASANHASAN

Course Name

HASANHASANHASAN

Instructor Name

DR. OGR. UYESI FAHREDDIN SUKRU TORUN

OGR.GOR. YUSUF EVREN AYKAC
DOC.DR. NURAY CELEBI
DOC.DR. MUHAMMED ABDULLAH BULBUL
DR. OGR. UYESI SELIM BAHADIR
DR. OGR. UYESI OSMAN SERDAR GEDIK
PROF.DR. ABDULLAH YILDIZ
DOC.DR. MUSTAFA ARSLAN
DR. OGR. UYESI TEKIN ONAL
DR. OGR. UYESI SHAFQAT UR REHMAN
DR. OGR. UYESI TAREK NAJJAR
DR. OGR. UYESI FAHREDDIN SUKRU TORUN
DR. OGR. UYESI OZKAN KILIC
DR. OGR. UYESI FADI YILMAZ
DR. OGR. UYESI MUSTAFA YENIAD
DOC.DR. FATIH NAR
AR. GOR. DR. IBRAHIM ATLI
PROF.DR. REMZI YILDIRIM
PROF.DR. FATIH DEMIRCI

Hours Preference

☒ 3 ☐ 2+1

Update

Delete

Figure 14: Add Course Page with Instructor List

Add Classroom

Add

Update Classroom

UpdateDelete

Update Service

Select Service

Select Course Day

Figure 15: Add/Update Classroom and Update Service Page

Update Classroom

B503 - Capacity : 120
B403 - Capacity : 100
C501 - Capacity : 60
C408 - Capacity : 52

UpdateDelete

Update Service

Select Service

MATH106 - Day: Thursday - Timings: 13:30,14:30,15:30

Select Course Day

Thursday

Enter New Timings

13:30,14:30,15:30

UpdateDelete

Figure 16: Update Classroom Page with Classroom List