TIME TABLE SCHEDULER

DBMS MINI PROJECT

CLASS – COMPUTER TE 1

GROUP MEMBERS –

19CO038 PRANAV KAKANI

19CO043 ANURAG KHADTARE

19CO056 PRATIK PINGALE

ABSTRACT AND INTRODUCTION

- The project is developed to automatically generate timetable and schedule classes without clashing with each other.
- Timetable scheduler is capable of auto-generating separate timetable for Teachers and Rooms in the Institute based on the Class timetable created/auto-generated by the user.
- This will allow User to create and modify timetables easily and have them hosted online so that they can be retrieved easily.
- We can easily modify or update timetable incase new classes are added.

CONSTRAINTS SATISFIED

Hard Constraints

- Unique class timing.
- Course students <= room seating capacity.
- Two classes don't have same room.
- Class timing for each teacher is unique.
- Teachers are allocated to their course accordingly.

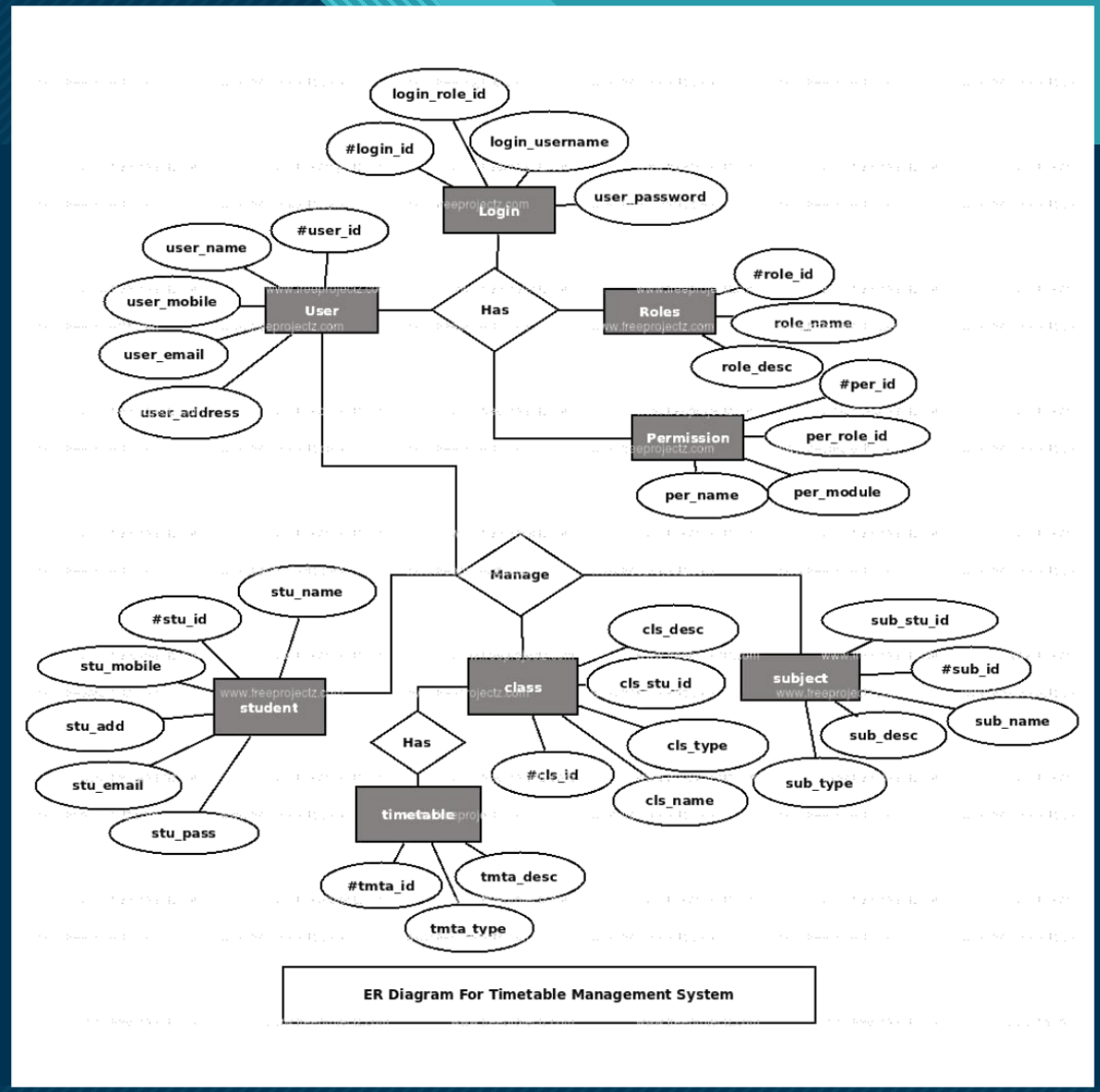
Soft Constraints

- classes are allotted according to section requirements.
- All courses are according to their department.
- Even distribution of course in a section per week.

SOFTWARE REQUIREMENTS:-

- OPERATING SYSTEM :- WINDOWS/LINUX
- SOFTWARE :- PYTHON = 3.9.5
  DJANGO = 3.2.9

SCHEMA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login_username
user_password
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#user_id
user_name
user_mobile
User
user_email
user_address
Has
#role_id
Roles
role_name
role_desc
#per_id
Permission
per_role_id
per_name
per_module
Manage
stu_name
#stu_id
stu_mobile
student
stu_add
stu_email
stu_pass
Has
timetable
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tmta_desc
tmta_type
cls_desc
cls_stu_id
class
cls_type
#cls_id
cls_name
sub_stu_id
subject
#sub_id
sub_name
sub_desc
sub_type
ER Diagram For Timetable Management System

OPERATIONS ON THE SYSTEM

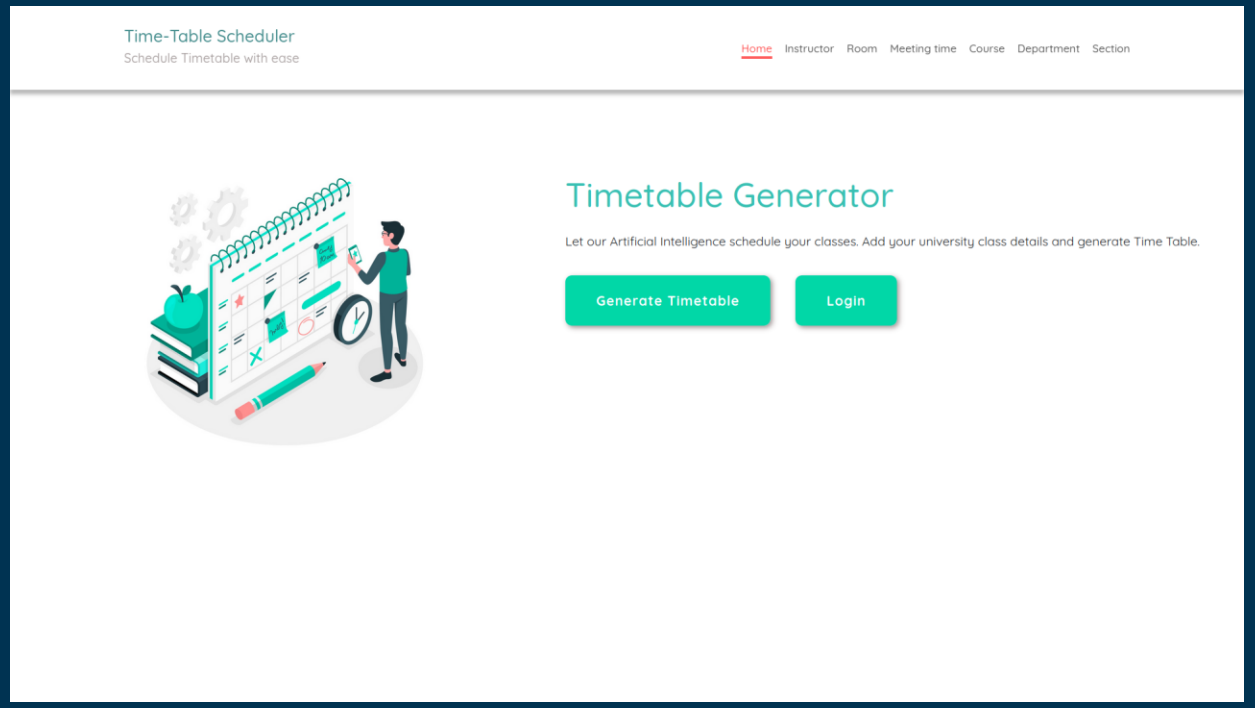
- THE USER WILL HAVE TO FEED THE FOLLOWING INFORMATION TO GET THE TIME TABLE :-

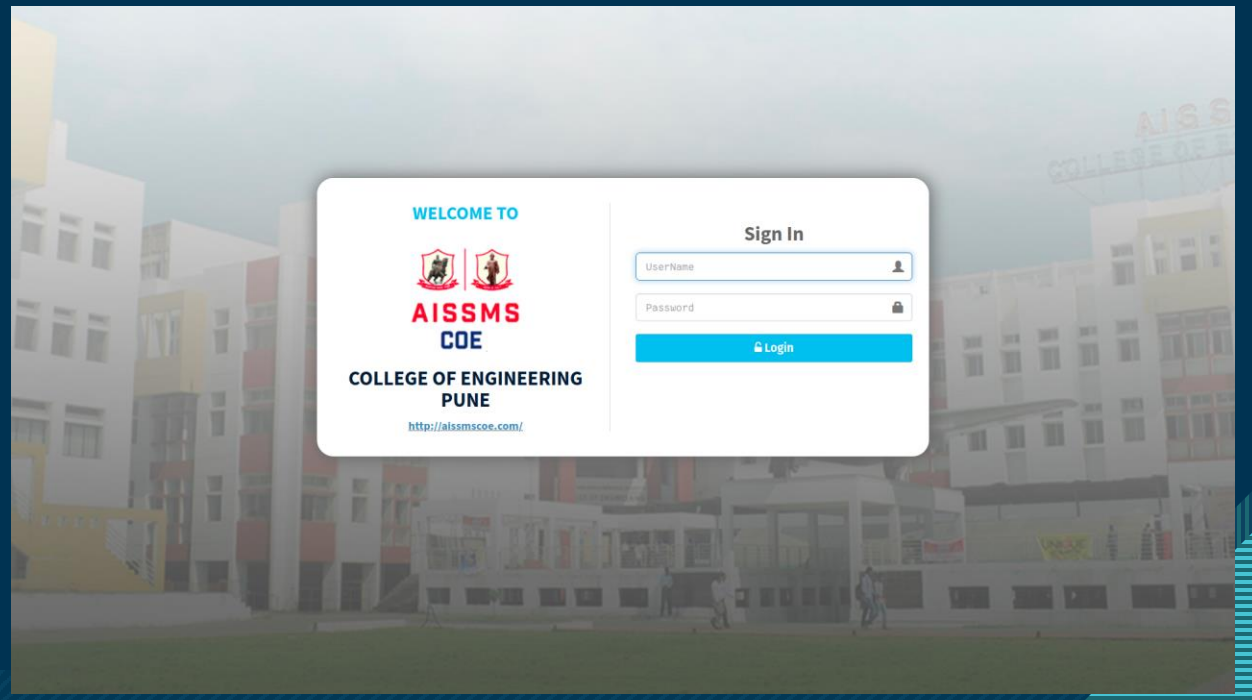
1. INSTRUCTOR ID AND NAME
2. ROOM NUMBER AND SEATING CAPACITY
3. MEETING TIME
4. NAME OF THE COURSE
5. DEPARTMENT NAME
6. SECTION NAME

OPERATION :-

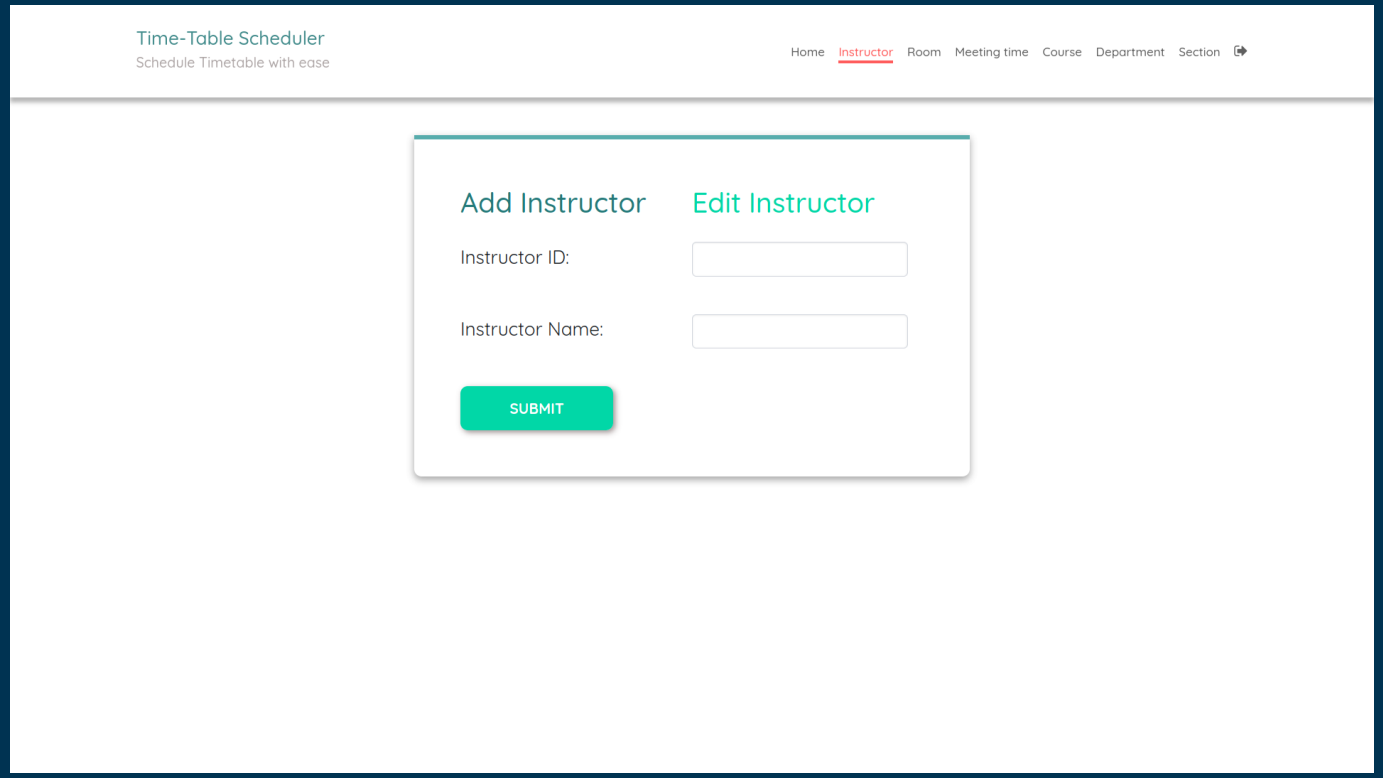
- AFTER FILLING THE INFORMATION IN THE GIVEN WINDOW AND SELECTING GIVEN OPTIONS THE USER WILL GET A OPTION TO GENERATE TIMETABLE.
- AND NOW AFTER FEW SECONDS YOU WILL SEE THE FINAL TIME TABLES ON THE SCREEN IN A ORGANIZED MANNER.
- THE TIMETABLES WILL BE ACCORDING TO SPECIFIC DEPARTMENT, INSTRUCTOR AND SECTION.
- NOW ACCORDING TO YOUR REQUIREMENTS YOU HAVE RECEIVED YOUR TIMETABLE BUT IF YOU WANT TO CHANGE OR UPDATE YOU CAN EASILY DO THAT.

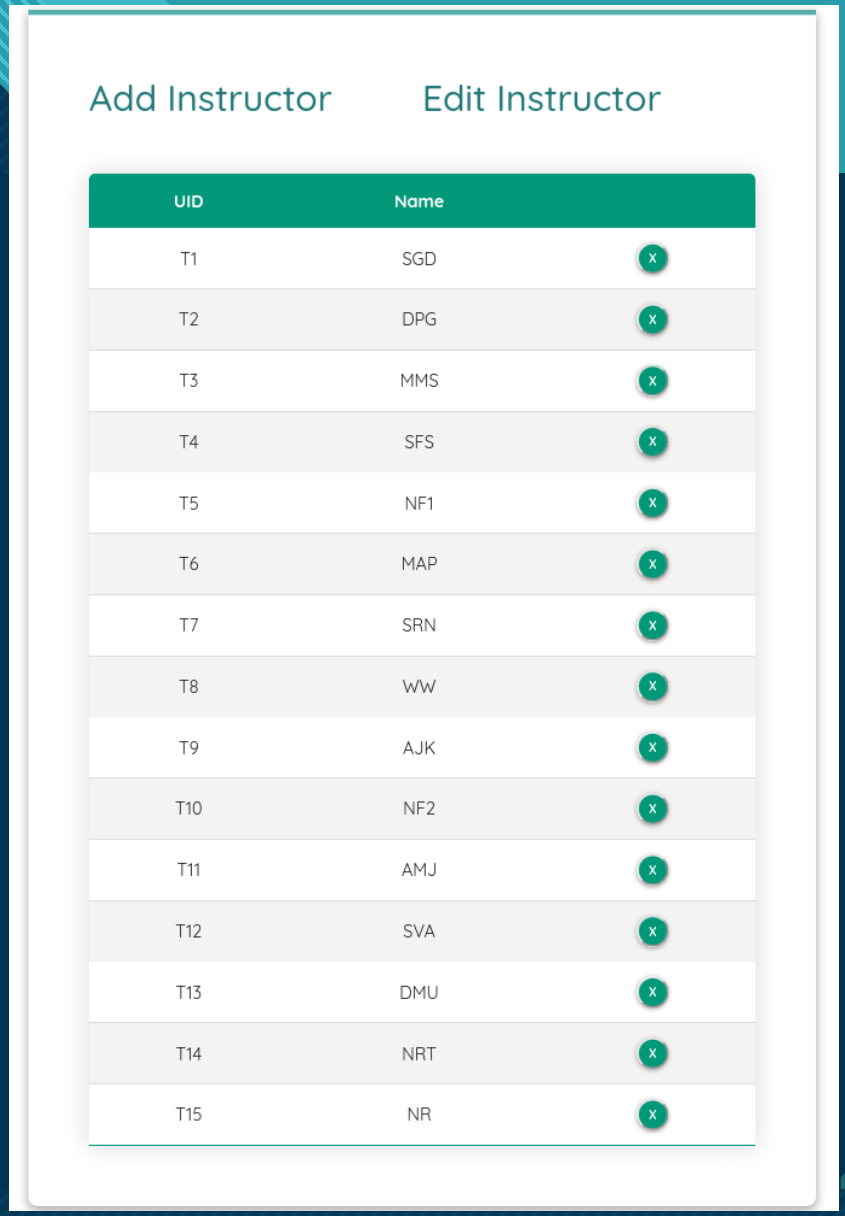
SCREENSHOTS :- LOGIN



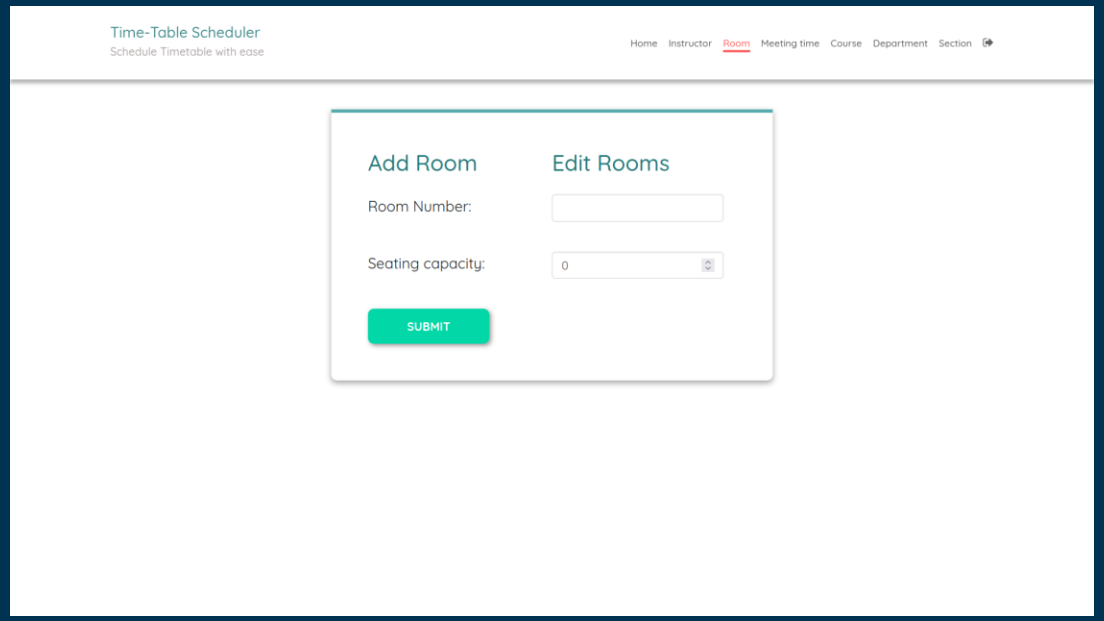


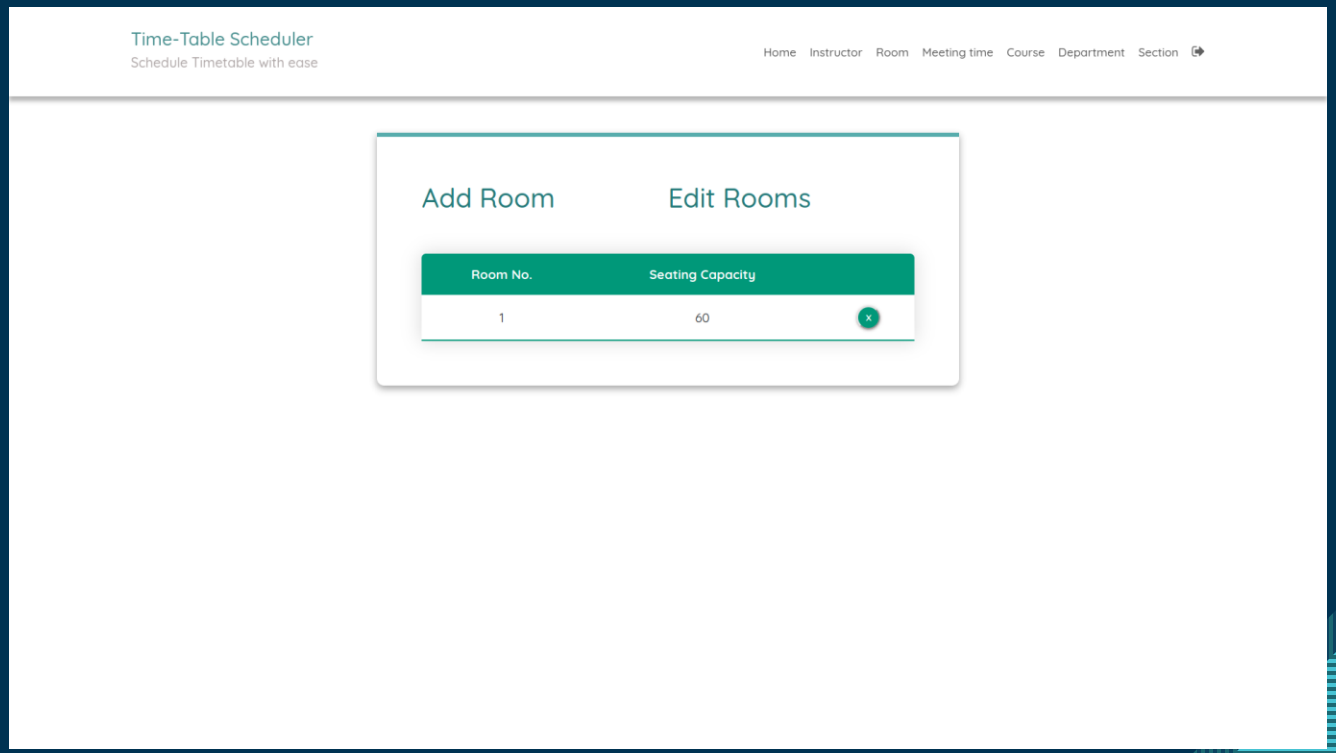
INSERTING INSTRUCTOR



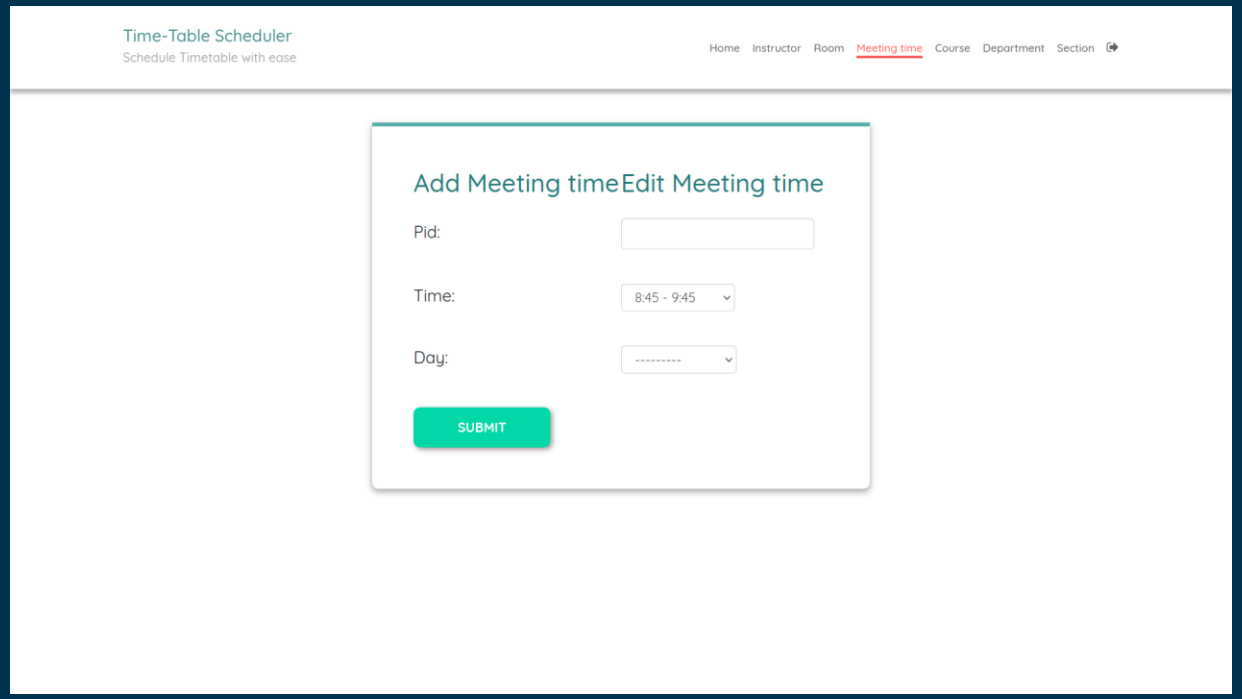


INSERTING ROOM





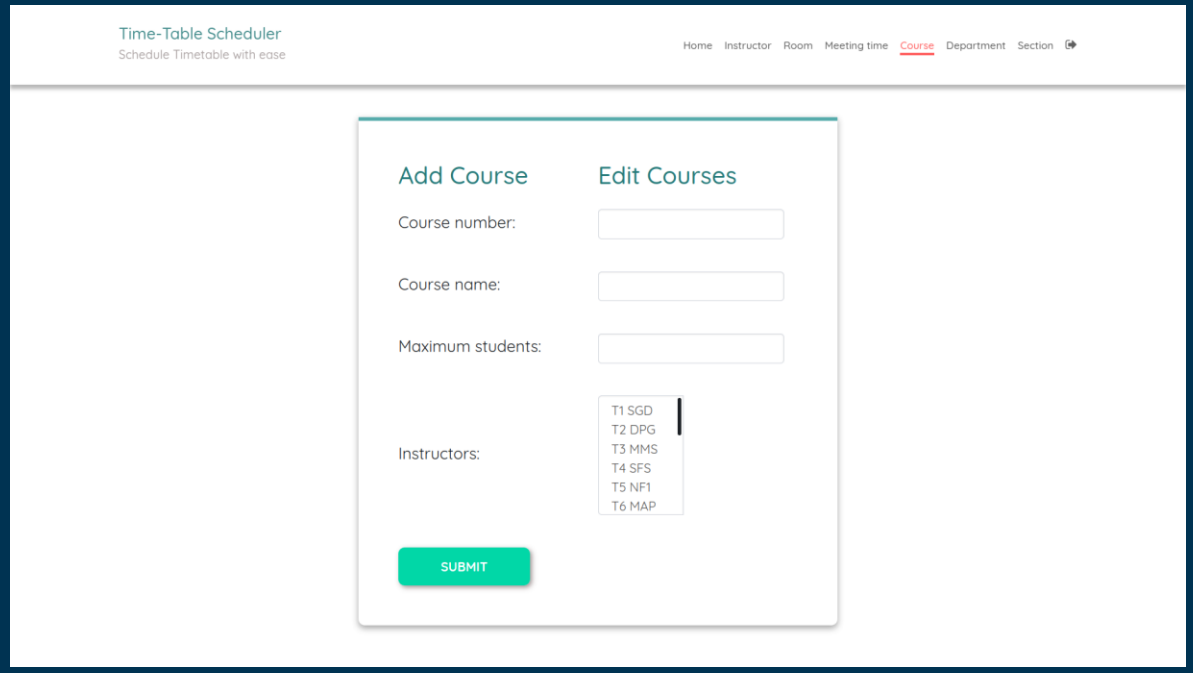
INSERTING MEETING TIME



Add Meeting time Edit Meeting time

PID	Day	Timing	
M1	Monday	8:45 - 9:45	x
M2	Monday	10:00 - 11:00	x
M3	Monday	11:00 - 12:00	x
M4	Monday	1:00 - 2:00	x
M5	Monday	2:15 - 3:15	x
T1	Tuesday	8:45 - 9:45	x
T2	Tuesday	10:00 - 11:00	x
T3	Tuesday	11:00 - 12:00	x
T4	Tuesday	1:00 - 2:00	x
T5	Tuesday	2:15 - 3:15	x
W1	Wednesday	8:45 - 9:45	x
W2	Wednesday	10:00 - 11:00	x
W3	Wednesday	11:00 - 12:00	x
Th1	Thursday	8:45 - 9:45	x
Th2	Thursday	10:00 - 11:00	x
Th3	Thursday	11:00 - 12:00	x
Th4	Thursday	1:00 - 2:00	x
F1	Friday	8:45 - 9:45	x
F2	Friday	10:00 - 11:00	x
F3	Friday	11:00 - 12:00	x
F4	Friday	1:00 - 2:00	x
W4	Wednesday	1:00 - 2:00	x

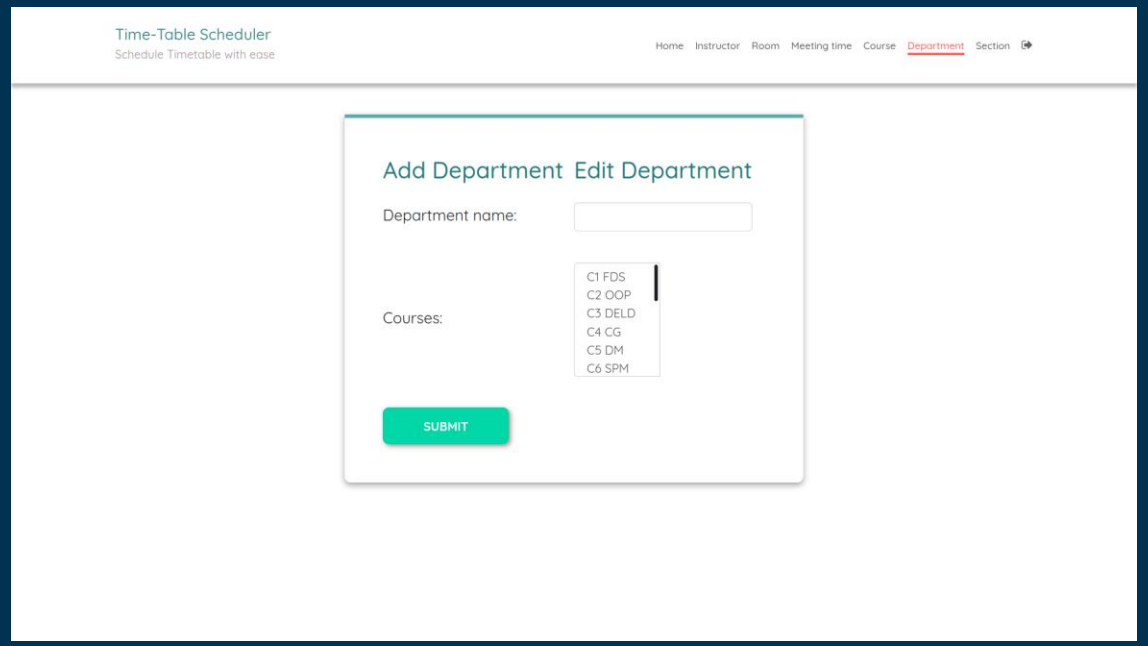
INSERTING COURSE

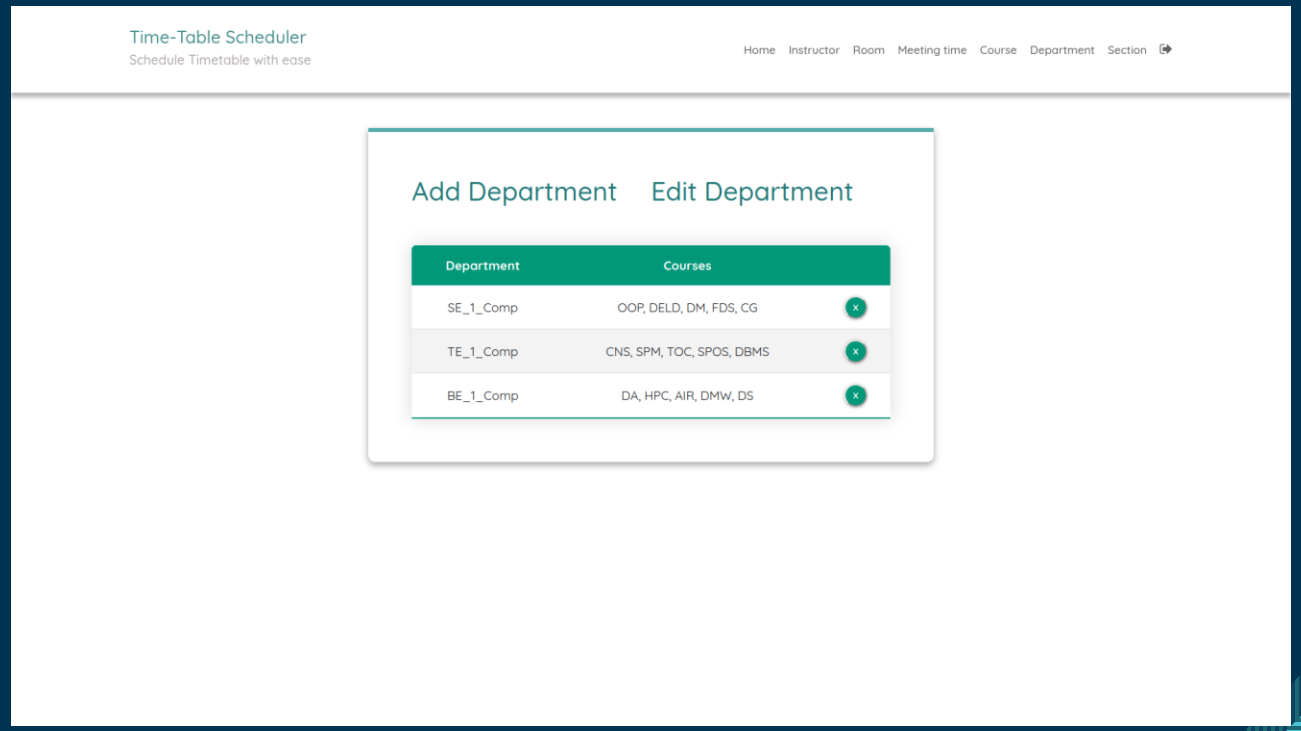


Add Course Edit Courses

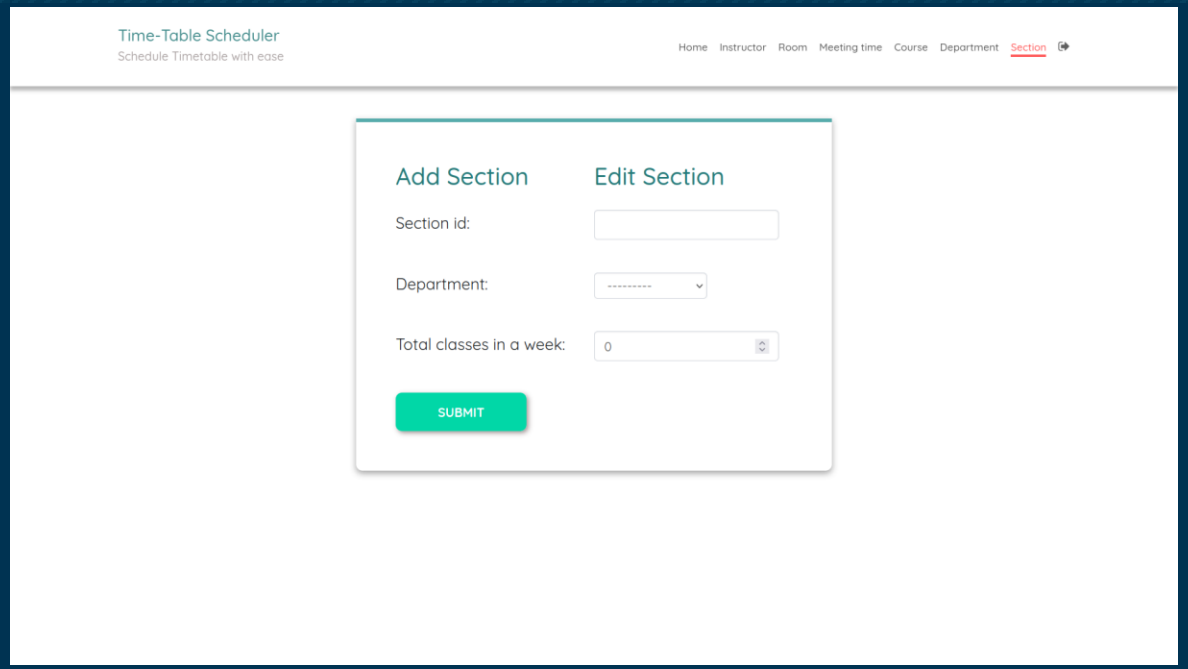
Course Code	Course Name	Max students	Instructors	
C1	FDS	60	SGD	X
C2	OOP	60	DPG	X
C3	DELD	60	MMS	X
C4	CG	60	SFS	X
C5	DM	60	NF1	X
C6	SPM	60	MAP	X
C7	DBMS	60	SRN	X
C8	TOC	60	WW	X
C9	CNS	60	AJK	X
C10	SPOS	60	NF2	X
C11	DA	60	AMJ	X
C12	HPC	60	SVA	X
C13	DMW	60	DMU	X
C14	DS	60	NRT	X
C15	AIR	60	NR	X

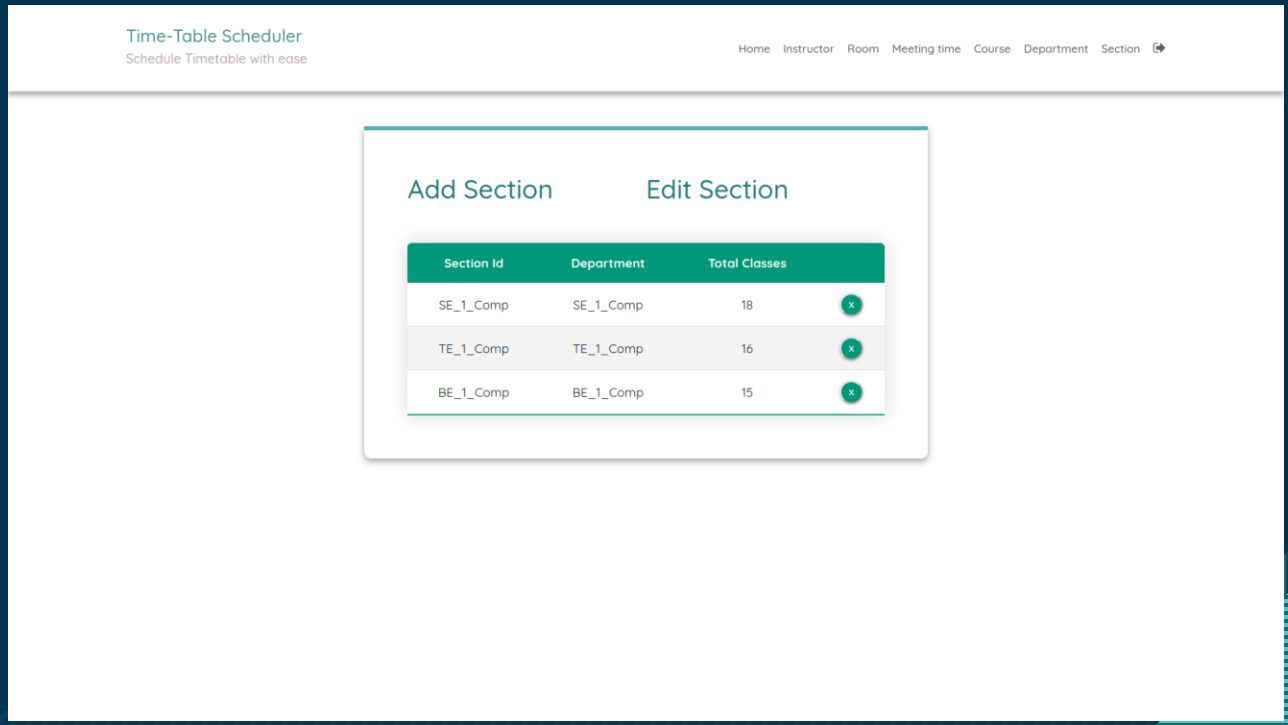
INSERTING DEPARTMENT



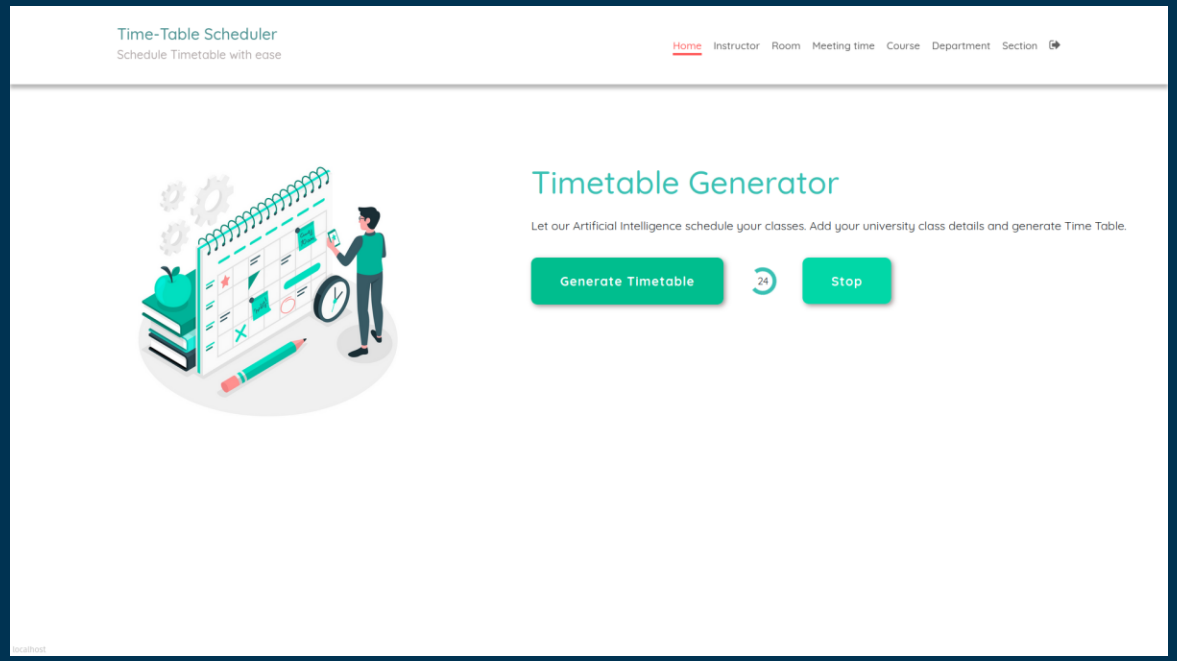


INSERTING SECTION





FINAL



Time-Table Scheduler

Schedule Timetable with ease

Home Instructor Room Meeting time Course Department Section

SE_1_Comp (SE_1_Comp)

Class #	8:45 - 9:45	10:00 - 11:00	11:00 - 12:00	1:00 - 2:00	2:15 - 3:15
Monday	FDS (SGD)	CG (SFS)		OOP (DPG)	DELD (MMS)
Tuesday	OOP (DPG)	CG (SFS)	DELD (MMS)		
Wednesday		FDS (SGD)	OOP (DPG)	DM (NF1)	
Thursday	DM (NF1)	DELD (MMS)	FDS (SGD)	CG (SFS)	
Friday	FDS (SGD)	OOP (DPG)	CG (SFS)	DM (NF1)	

TE_1_Comp (TE_1_Comp)

Class #	8:45 - 9:45	10:00 - 11:00	11:00 - 12:00	1:00 - 2:00	2:15 - 3:15
Monday	SPOS (NF2)	SPM (MAP)	DBMS (SRN)		
Tuesday		DBMS (SRN)	TOC (WW)	CNS (AJK)	SPM (MAP)
Wednesday	CNS (AJK)	DBMS (SRN)		TOC (WW)	
Thursday	SPOS (NF2)	CNS (AJK)		SPM (MAP)	
Friday		TOC (WW)	SPOS (NF2)	DBMS (SRN)	

BE_1_Comp (BE_1_Comp)

Class #	8:45 - 9:45	10:00 - 11:00	11:00 - 12:00	1:00 - 2:00	2:15 - 3:15
Monday	DA (AMJ)	DMW (DMU)	HPC (SVA)	AIR (NR)	DS (NRT)
Tuesday			DA (AMJ)		AIR (NR)
Wednesday		DS (NRT)	HPC (SVA)	DMW (DMU)	
Thursday			DMW (DMU)	DA (AMJ)	
Friday	HPC (SVA)	AIR (NR)		DS (NRT)	

CODE :-

https://github.com/PROxZIMA/TimetableScheduler

SYSTEM TESTING

- Software testing can be stated as the process of verifying and validating that software or application is bug-free, meets the technical requirements as guided by its design and development, and meets the user requirements effectively and efficiently with handling all the exceptional and boundary cases.
- **Unit Testing** is a software testing technique by means of which individual units of software i.e. group of computer program modules, usage procedures and operating procedures are tested to determine whether they are suitable for use or not. It is a testing method using which every independent modules are tested to determine if there are any issue by the developer himself.
- **Integration testing** is the process of testing the interface between two software units or module. It's focus on determining the correctness of the interface. The purpose of the integration testing is to expose faults in the interaction between integrated units. Once all the modules have been unit tested, integration testing is performed.

TYPES OF TESTING

- **White box** testing techniques analyze the internal structures the used data structures, internal design, code structure and the working of the software rather than just the functionality as in black box testing. It is also called glass box testing or clear box testing or structural testing.

- **Integration Test** Case differs from other test cases in the sense it focuses mainly on the interfaces & flow of data/information between the modules. Here priority is to be given for the integrating links rather than the unit functions which are already tested.

Advantages

- Faculty did not need to worry about time clashes.
- Authority now does not need to perform permutation and combination.
- Authority can concentrate on other things rather than wasting their time on preparing Time-Table.
- Substitution Management made easy.
- And one of the most important things, no more paperwork.

Future Work

- MORE FEATURES SUCH AS SCHEDULE PRINT FOR INDIVIDUAL FACULTY ETC. WOULD ALSO BE INVOLVED TO MAKE THIS MORE USEFUL AS A FINAL PRODUCT.
- IN FUTURE EXPORTING TIMETABLE IN VARIOUS FORMATS WILL BE AVAILABLE.
- FASTER PROCESSING OF SCHEDULE AND IMPROVEMENTS IN THE ALGORITHM

CONCLUSION

- IT IS COMPLICATED TASK THAT TO HANDLE MANY FACULTY'S AND ALLOCATING SUBJECTS FOR THEM AT A TIME PHYSICALLY. SO OUR PROPOSED SYSTEM WILL HELP TO OVERCOME THIS DISADVANTAGE. THUS WE CAN PRODUCE TIMETABLE FOR ANY NUMBER OF COURSES AND MULTIPLE SEMESTERS.
- THIS SYSTEM WILL HELP TO CREATE DYNAMIC PAGES SO THAT FOR IMPLEMENTING SUCH A SYSTEM WE CAN MAKE USE OF THE DIFFERENT TOOLS ARE WIDELY APPLICABLE AND FREE TO USE ALSO.

Thank You