

Team 42 - Class Scheduler

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Problem:

Create something both usable and useful for our clients to use when undertaking the scheduling process.

- The current process is a very human process with few tools to help assist in creating the schedule
- Our vision for the project is for it to be something useful every semester when scheduling classes

History

R2185		Section Offerings For Spring 2022				Date: 05-15-2021		Page: 855		CPR E				
COMPUTER ENGINEERING - Continued														
554		DISTRIBUTED SYSTEMS				3 Credits								
Offered: Fall														
Pre-reqs: COM S 311, COM S 352 OR CPR E 308; GRADUATE STANDING OR PERMISSION OF INSTRUCTOR														
Co/Cross listed with COM S														
Also taught as 454														
556		SCALABLE SFTWR ENGR				3 Credits								
Offered: No Terms														
Pre-reqs: COM S 309														
557		CPTR GRPHC&GEOM MOD				3 Credits								
Offered: Fall														
Pre-reqs: M E 421 OR INSTRUCTOR PERMISSION														
Co/Cross listed with M E														
Enrollment Restrictions -(If used, will list under section comments) GRA equal to YR 6, YR 7														
558		REAL-TIME SYSTEMS				3 Credits								
Offered: Fall														
Pre-reqs: CPR E 308 OR COM S 352														
Also taught as 458														
Enrollment Restrictions -(If used, will list under section comments) YR7 equal to YR 7														
559		SEC&PRIVCY IN CLOUD				3 Credits								
Offered: Spring														
Pre-reqs: COM S 352 OR CPR E 308; COM S 486 OR CPR E 489 OR CPR E 530														
Co/Cross listed with COM S														
---Limits--- Type														
Sec	Ref#	Credit	Today	LTM	Max	Instr	Meeting Time	Com	List Room	Com	Code	Comments	Dlvry	Col
1	1831005	3	888	888	LEC	TR	2:10P- 3:25P				D	Teach dept max limit is 75 Delivery is WWW.	WWW	S
560		DATA-DRV SECUR&PRIV				3 Credits								
Offered: Spring														
Pre-reqs: CPR E 531, COM S 474 OR COM S 573														
Also taught as COM S, CYBSC														
---Limits--- Type														
Sec	Ref#	Credit	Today	LTM	Max	Instr	Meeting Time	Com	List Room	Com	Code	Comments	Dlvry	Col
1	5063005	3	0	0	LEC	MW	2:15P- 3:35P				A	Change limit or will be canceled Delivery is WWW.	WWW	E

Our Solution

Term Summer 2024

No courses found

No Schedules generated. Please check the sections and the reserved time selected.

Reserve blocks of time by clicking in calendar. [Clear Reserved Times](#)

	Mon	Tue	Wed	Thu	Fri	Sat
Arranged						
7am						
8am						
9am						
10am						
11am						
12pm						
1pm						
2pm						
3pm						
4pm						
5pm						
6pm						
7pm						

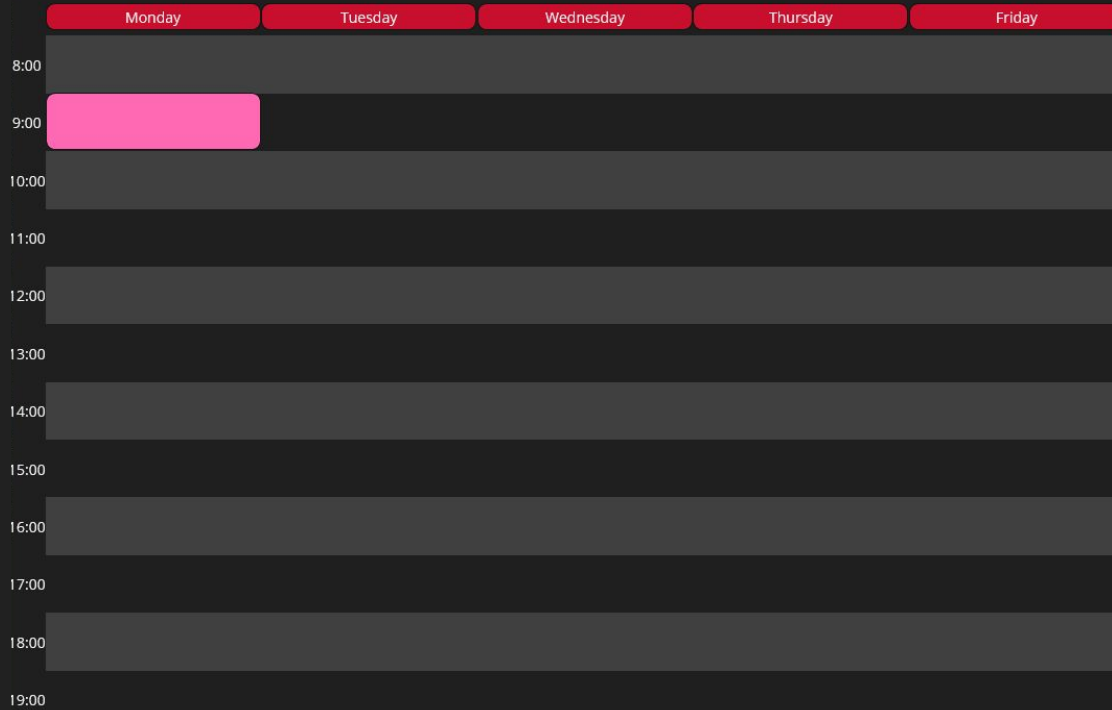
[Return to Schedule of Classes](#)

- Generally, we aim to help our client schedule classes
- To do this, it would be most useful (and relative to the problem) to create a visual aid for our client
- Fig. 1 on the left is a generic schedule to base our project's visual aid off of

Fig. 1 - <https://classes.iastate.edu/planner>

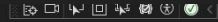
Our Solution

Home



Our non-time grid solution

Courses



Search course name

SE 165

1650 Intro to software engineering Credits:3 Year round:False Course Code:1650 Comments:N/A

Edit

Del

Com s 311

3110 Algorithms Credits:4 Year round:False Course Code:4250 Comments:N/A

Edit

Del

Com s 227

2270 Programming basics Credits:3 Year round:False Course Code:2270 Comments:N/A

Edit

Del

Add New Course

Requirements

ISO/IEC/IEEE 29148:2018 - Requirements will be progressively elaborated on through the project's lifecycle.

Relevant because we met with our client to bring new ideas and concepts to add to the requirements. We constantly iterated and got feedback on our work throughout the semester.

Functional Requirement #1

View/edit past schedules

- Let our client be able to view past year's schedules with our program to cross reference when making their schedules
- Let our client be able to import a past year's schedule with our program in order to create a new schedule - like a preset

Functional Requirement #2

Filter visible classes

- Let our client be able to filter the visualizer by multiple things:
 - Classes
 - Departments
 - Labs, Recitations

Functional Requirement #3

Export

- Give our client a compiled list of data of what they scheduled using our program
 - For example, exporting to Excel each class and its data, such as when it was scheduled, section number, professor, etc.

Functional Requirement #4

Import

- Allow our client to import schedule data
 - For example, being able to import data from Fall 2024. We will not have this data as we will be graduated, so our user needs to have a way to import it.
- Allow our client to import new class times data
 - For example, classes in the past semester have started at 8:00. Now, they can start at 7:45.
- Allow our client to import degree flowcharts
 - Being able to import degree flowcharts will help with conflict checking in Requirement #5

Functional Requirement #5

Warnings

- Conflict check, through the flowcharts, whether or not a class can be scheduled at a time.

Nonfunctional Requirements

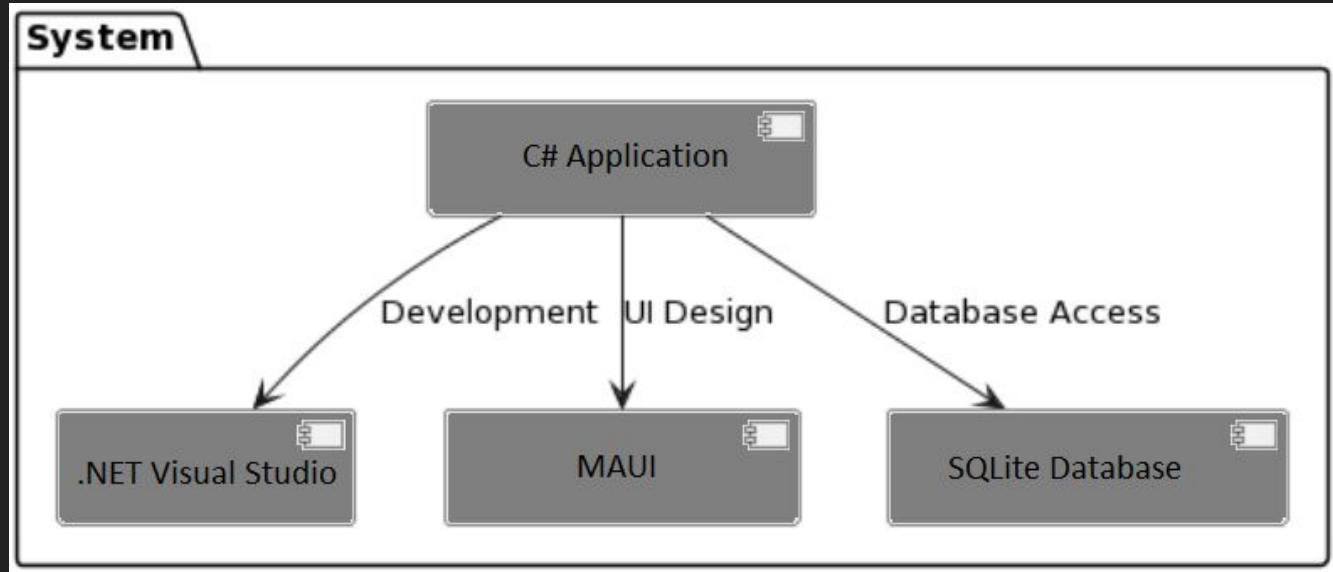
Usability

- Allow our client to navigate our system easily

Scalability

- As the data grows larger and larger over the years, the system should also scale

Our System



Our dataset

Client and Registrar's office is currently overwhelmed with the implementation of Workday.

Workday broke the Schedule of Classes by Iowa State University, which a similar group used

Our dataset

What we used:

```
INTRO DATA STRUCTUR COM S 228 3 CREDITS
Prereq: MINIMUM OF C- IN COM S 227; CREDIT OR
CONCURRENT ENROLLMENT IN MATH 165
Note: 2-PART COURSE. REGISTER FOR LETTERED SECTION
FIRST AND THEN NUMBERED SECTION. STUDENTS WHO DON'T
REGISTER FOR BOTH PARTS OF THE COURSE SHOULD DROP
THE COURSE DUE TO INCOMPLETE REGISTRATION.
Night exams scheduled. For dates go to
http://www.registrar.iastate.edu/students/exams/
night-exams
9238100 A MWF 8:50-9:40
MEETS: AUG 21-DEC 15
9238105 B MWF 3:20-4:10
MEETS: AUG 21-DEC 15
Note: Course delivery is On-site instruction
9238110 C MWF 11:00-11:50
MEETS: AUG 21-DEC 15
Note: Course delivery is On-site instruction
9238115 D MWF 2:15-3:05
MEETS: AUG 21-DEC 15
Note: Course delivery is On-site instruction
9238120 E MWF 2:15-3:05
MEETS: AUG 21-DEC 15
Note: Course delivery is On-site instruction
9238015 1 T 12:40-1:30
MEETS: AUG 21-DEC 15
Note: Course delivery is On-site instruction
9238020 2 R 12:40-1:30
MEETS: AUG 21-DEC 15
Note: Course delivery is On-site instruction
9238025 3 R 8:00-8:50
MEETS: AUG 21-DEC 15
Note: Course delivery is On-site instruction
9238030 4 T 8:00-8:50
MEETS: AUG 21-DEC 15
Note: Course delivery is On-site instruction
9238035 5 T 9:30-10:20
MEETS: AUG 21-DEC 15
Note: Course delivery is On-site instruction
9238040 6 T 4:10-5:00
MEETS: AUG 21-DEC 15
Note: Course delivery is On-site instruction
9238045 7 R 9:30-10:20
MEETS: AUG 21-DEC 15
Note: Course delivery is On-site instruction
9238050 8 R 4:10-5:00
MEETS: AUG 21-DEC 15
Note: Course delivery is On-site instruction
9238055 9 T 2:10-3:00
MEETS: AUG 21-DEC 15
Note: Course delivery is On-site instruction
9238060 10 R 2:10-3:00
MEETS: AUG 21-DEC 15
Note: Course delivery is On-site instruction
DISCRETE CMP STRUCT COM S 230 3 CREDITS
Prereq: MINIMUM OF C- IN (COM S 227; MATH 165);
ENGL 150
Note: 2-PART COURSE. REGISTER FOR A LECTURE SEC
FIRST AND THEN A LAB SEC. STUDENTS WHO DON'T
REGISTER FOR BOTH LECTURE AND LAB SHOULD DROP THE
COURSE DUE TO INCOMPLETE REGISTRATION.
Night exams scheduled. For dates go to
http://www.registrar.iastate.edu/students/exams/
night-exams
4005005 A TR 11:00-12:15
MEETS: AUG 21-DEC 15
Note: Course delivery is On-site instruction
4005010 B TR 12:40-1:30
MEETS: AUG 21-DEC 15
Note: Course delivery is On-site instruction
4005015 C TR 3:40-4:30
MEETS: AUG 21-DEC 15
Note: Course delivery is On-site instruction
4005100 1 W 12:10-1:35
MEETS: AUG 21-DEC 15
Note: Course delivery is On-site instruction
4005105 2 W 4:25-5:15
MEETS: AUG 21-DEC 15
Note: Course delivery is On-site instruction
4005110 3 W 3:20-4:10
MEETS: AUG 21-DEC 15
Note: Course delivery is On-site instruction
LINUX SYS ESSENTIALS COM S 252 3 CREDITS
Prereq: CPR E 185 OR S E 185 OR COM S 127 OR
COM S 227
3087005 1 ARRANGED
MEETS: AUG 21-DEC 15
Note: Course delivery is WWW
3087010 2 ARRANGED
MEETS: AUG 21-DEC 15
Note: Course delivery is WWW
INDEPENDENT STUDY COM S 290 VAR. CREDITS
Prereq: PERMISSION OF INSTRUCTOR
Note: NO MORE THAN 6 CREDITS OF COM S 290 OR
COM S 290K MAY BE APPLIED TOWARD GRADUATION
Instructor permission required 1st week.
***** SEEK DEPT FOR REFERENCE NUMBERS
INDEP STUDY HONORS COM S 290H VAR. CREDITS
Prereq: INSTR PERMISSION; HONORS PRIC MEMBERSHIP
Note: COURSE RESTRICTED TO STUDENTS IN THE UNIVERSITY
HONORS PROGRAM ONLY. NO MORE THAN 6 CREDITS OF
COM S 290 OR COM S 290H MAY BE APPLIED TOWARD
GRADUATION.
***** SEEK DEPT FOR REFERENCE NUMBERS
SOFTWARE PRACTICES COM S 309 3 CREDITS
Prereq: MINIMUM OF C- IN (COM S 228; MATH 165)
4438005 1 MWF 9:55-10:45
MEETS: AUG 21-DEC 15
Note: Course delivery is On-site instruction
4438010 2 MWF 11:00-11:50
MEETS: AUG 21-DEC 15
Note: Course delivery is On-site instruction
4438015 3 MWF 2:15-3:05
MEETS: AUG 21-DEC 15
Note: Course delivery is On-site instruction
DSN&ANALYSIS ALGRTH COM S 311 3 CREDITS
Prereq: MINIMUM OF C- IN (COM S 228; MATH 166;
ENGL 150); (COM S 230 OR CPR E 310)
Note: 2-PART COURSE. REGISTER FOR LETTERED SECTION
FIRST AND THEN NUMBERED SECTION. STUDENTS WHO DON'T
REGISTER FOR BOTH PARTS OF THE COURSE SHOULD DROP
THE COURSE DUE TO INCOMPLETE REGISTRATION.
Night exams scheduled. For dates go to
http://www.registrar.iastate.edu/students/exams/
night-exams
2683005 A TR 8:00-9:15
MEETS: AUG 21-DEC 15
Note: Course delivery is On-site instruction
2683010 B TR 9:00-10:15
MEETS: AUG 21-DEC 15
Note: Course delivery is On-site instruction
2683015 C TR 12:40-1:30
MEETS: AUG 21-DEC 15
Note: Course delivery is On-site instruction
2683100 1 W 7:45-8:35
MEETS: AUG 21-DEC 15
Note: Course delivery is On-site instruction
2683105 2 W 9:55-10:45
MEETS: AUG 21-DEC 15
Note: Course delivery is On-site instruction
2683110 3 W 2:15-3:05
MEETS: AUG 21-DEC 15
Note: Course delivery is On-site instruction
CONSTR USER INTFAC COM S 319 3 CREDITS
8537005 1 MWF 8:50-9:40
MEETS: AUG 21-DEC 15
Note: Course delivery is On-site instruction
INTR CPTR ARCH&MACH COM S 321 3 CREDITS
Prereq: C- OR BETTER IN COM S 228,
C- OR BETTER IN MATH 165, COM S 230 OR CPR E 281,
ENGL 250
2684005 1 MWF 12:05-12:55
MEETS: AUG 21-DEC 15
Note: Course delivery is On-site instruction
2684010 2 MWF 12:05-12:55
MEETS: AUG 21-DEC 15
Note: Course delivery is On-site instruction
ADV PROGRAMM TCHNQ COM S 327 3 CREDITS
Prereq: MINIMUM OF C- IN (COM S 228; MATH 165)
Night exams scheduled. For dates go to
http://www.registrar.iastate.edu/students/exams/
night-exams
2454005 1 TR 9:30-10:45
MEETS: AUG 21-DEC 15
Note: Course delivery is On-site instruction
2454010 2 TR 9:30-10:45
MEETS: AUG 21-DEC 15
Note: Course delivery is On-site instruction
THEORY OF COMPUTING COM S 331 3 CREDITS
Prereq: MINIMUM OF C- IN (COM S 228; MATH 166;
ENGL 250); (COM S 230 OR CPR E 310)
Note: 2-PART COURSE. REGISTER FOR LETTERED SECTION
FIRST AND THEN NUMBERED SECTION. STUDENTS WHO DON'T
REGISTER FOR BOTH PARTS OF THE COURSE SHOULD DROP
THE COURSE DUE TO INCOMPLETE REGISTRATION.
2686100 A MWF 1:10-2:00
MEETS: AUG 21-DEC 15
```


Our exported data

```
1 Name: ORIENTATION Code: COM S 101 Credits: 0
2 Section Label: 1 Days Of Week: MW Start Time: 2:15 End Time: 3:05
3 Section Label: 2 Days Of Week: MW Start Time: 2:15 End Time: 3:05
4 Section Label: 3 Days Of Week: MW Start Time: 2:15 End Time: 3:05
5 Section Label: 4 Days Of Week: MW Start Time: 2:15 End Time: 3:05
6 Section Label: 5 Days Of Week: MW Start Time: 2:15 End Time: 3:05
7 Section Label: 6 Days Of Week: MW Start Time: 2:15 End Time: 3:05
8 Section Label: 7 Days Of Week: MW Start Time: 2:15 End Time: 3:05
9 Section Label: 8 Days Of Week: MW Start Time: 2:15 End Time: 3:05
10 Section Label: 9 Days Of Week: MW Start Time: 3:20 End Time: 4:10
11 Section Label: 10 Days Of Week: MW Start Time: 3:20 End Time: 4:10
12 Section Label: 11 Days Of Week: MW Start Time: 3:20 End Time: 4:10
13 Section Label: 12 Days Of Week: MW Start Time: 3:20 End Time: 4:10
14 Section Label: 13 Days Of Week: MW Start Time: 3:20 End Time: 4:10
15 Section Label: 14 Days Of Week: MW Start Time: 3:20 End Time: 4:10
16 Section Label: 15 Days Of Week: MW Start Time: 3:20 End Time: 4:10
17
18 Name: INTRO TO PROGRAMMNG Code: COM S 104 Credits: 2
19 Section Label: 1 Days Of Week: Arr. Start Time: End Time:
20 Section Label: 2 Days Of Week: Arr. Start Time: End Time:
21
22 Name: INTRO WEB PROGRAMMNG Code: COM S 106 Credits: 3
23 Section Label: 1 Days Of Week: Arr. Start Time: End Time:
24
```

Challenges & Things to Learn

Appendix 3 in Final Report

- Group communication and workflow is very important
- Using a system you are familiar with is a big deal
- Creating a GUI is hard
- Milestones are important

Thank You!