Computer Science Major Project: Scheduler (Documentation)

Day 1 (November 16 th)					
Daily Mileston	e: Prepare all data for read	ing/writing into the GUI			
Group	Li, Tim	Melnbardis, Alex	Zheng, Bob		
Member	,	,	87		
Individual Milestone	Format the "Student Demands" file into a readable form for the program.	Format the "Teacher and Course Information" file into a readable form for the program.	Create the program's frame and create a TreeView for the first page (Homepage 1).		
Time to Complete	~ 2 hours 25 minutes	~ 10 minutes	~ 2 hours 5 minutes		
Explanation of Milestone	Column headings were added to the excel file for organization, and any extraneous or invalid data detected was removed.	Unnecessary pages or data from the excel file were removed to ensure the file is easily readable by the program.	Running the program generates a blank page with a single TreeView bearing preconfigured headings.		
Code Output	A B C 1 Student Name Grade Course 2 AH003 9 MTH1W 3 AH003 9 PPL1O 4 AH003 9 SNC1D 5 AH003 9 EN61D 6 AH003 9 GLS1O 7 AH003 9 FSF1D 8 AH003 9 BB11O 9 AH003 9 CHC2D 10 AJ004 9 AMU1O	A 8 C C E F 1 Teacher A B C C C B 2 Alb, Corina B AT4M-118 BAF3M-118 CIA4U-118 3 Selford, Lsura CU3M-111 H5P3U-111 H5P3U-113 4 Bernal, Andrea CCU3M-111 H5P3U-111 H5P3U-113 5 Borkhoff, Karl CCU3M-111 H5P3U-111 H5P3U-113 6 Brewster, Ian CISIM-251 TGI3M-251 TGI3M	Course Available Occupied Sections		

Day 2 (November 17 th)						
Daily Milestone	Daily Milestone: Compile and insert necessary data into the TreeView on the first page.					
Group		Li, Tin	n	Melnbardis, Alex	Zheng, Bob	
Member						
Individual		ll compile	d data on	Count the names of all	Compile student names,	
Milestone	the TreeV	iew.		students, and the number of students taking each course.	courses, and the students per course and store them.	
Time to	~ 53 min	utes		~ 1 hour	~ 1 hour	
Complete						
Explanation of	dictionary calculation		ner serted into	Each row of the "Student Demands" file was read, while appending necessary	A nested dictionary was created with three dictionaries: one for the courses and	
Milestone	columns	1-3 of the	TreeView.	information to the nested dictionary.	students in them, the course and # of students, and student names and their grade level.	
Code	Course AMU10	Available 68	Occupied 58			
Output	AMU2O AMU3M AMU4M	51 51 34	36 36 27			
	APBIO APCAL	17 17	6 13			
	APCHE APPHY APPOL	17 17 17	7 8 6			
	AVI2O	102	89			

Day 3 (November 18th)

Daily Milestone: Complete the TreeView on the first page and add two more pages.

	e: Complete the Treeview	1 0	1 0
Group	Li, Tim	Melnbardis, Alex	Zheng, Bob
Member			
Individual	Create click events for the rows of the TreeView, leading	Separate courses into sections and display it on the TreeView	Add a second page containing a TreeView displaying a list of
Milestone	to another page.	on the first page.	all students.
Time to	~ 1 hour 40 minutes	~ 1 hour 20 minutes	~ 35 minutes
Complete			
Explanation	Clicking on a row in the	A fourth dictionary was added	A second page was added,
_*	TreeView on the first page	containing each courses'	containing a TreeView
of	goes to a new page with a	sections based on the number	displaying students' names and
Milestone	TreeView that will display the	of students taking each course.	their grade. Two buttons were
	course's teachers and the	The max number of spots was	added allowing access between
	number of sections they teach.	also calculated.	the course and student lists.
Code	Teachers Sections	Course	Name Grade AA006 10 AA141 11
		AMU3M 51 36 3 AMU4M 34 27 2	A301 11 AC002 12
Output		APBIO 17 6 1 APCAL 17 13 1 APCHE 17 7 1	AC009 11 AC232 10
1		APPHY 17 8 1 APPOL 17 6 1	AD005 10 AE003 10
		AVI2O 102 89 6 AVI3M 34 34 2	AE230 12 AH003 9 AH004 10
		AVIAM 34 22 2 BAF3M 102 97 6 BAT4M 51 51 3	AH123 12 A1004 9
		BAIAM 51 51 5 BBIAM 68 57 4 BBIO 119 117 7	AJ010 12 AL008 10
		BTT10 85 79 5 CGC1D 51 49 3	AM001 9 AM002 9
		CGF3M 17 9 1 CGW4U 34 29 2	AM005 11 AM006 12
		CHA3U 17 6 1 CHC2D 204 196 12	AM123 10

Day 4 (November 19th)

Day 4 (November 19)						
Daily Milestone	Daily Milestone: Complete half of Page 2 and add a fourth page.					
Group	Li, Tim	Melnbardis, Alex	Zheng, Bob			
Member						
Individual Milestone	Store data from the "Teacher and Course Information" file into dictionaries.	List the teachers teaching each course on the third page (Page 2).	Add a fourth page (Teacher Schedule page) and create a TreeView for it.			
Time to Complete	~ 5 minutes	~ 5 minutes	~ 5 minutes			
Explanation of Milestone	Data from the "Teacher and Course Information" file (ex. Teacher: course(s)) was gathered and stored into new dictionaries for later use.	On the Teacher – Section List page, the teachers related to each course are listed in the first column.	When a row of on the Teacher — Section List page is clicked, it brings up the frame of what will be the teacher's schedule (what periods they teach specific courses).			
Code Output		Teachers Sections Colalillo, Emilio (S1) 0 Blackwell, Alan (S2) 0 Little, Nicole 0 Davies, Nadja 0	Teacher Course A B C D E D'Aguilar, Jason SNC2D D'Aguilar, Jason SNC2D D'Aguilar, Jason AMU1O			

Day 5 (November 29th)

Daily Milestone: Finish the third page, add a fifth page, and add a button to the first page.

Group	Li, Tim	Melnbardis, Alex	Zheng, Bob
Member			_
Individual Milestone	Create click events for the rows of the Student List page leading to another page.	Add a search function to the Course List and Student List pages.	Assign course sections to teachers.
Time to Complete	~ 30 minutes	~ 2 hours 30 minutes	~ 2 hours 15 minutes
Explanation of Milestone	When a row on the Student List page is clicked, it leads to page with a TreeView that will display the student's schedule.	On the Course List and Student List pages, typing in keywords and clicking the "Search" button will return rows with the best match. The "Reset" button resets the TreeView.	Based on the requirement of all teachers needing to teach 6 sections a day, course sections are randomly assigned.
Code Output	Period Course Teache	Course	

Day 6 (November 30th)

Day o (November 30)					
Daily Milestone	Daily Milestone: Create a sixth page and add a new button to the GUI.				
Group	Li, Tim	Melnbardis, Alex	Zheng, Bob		
Member		·	J.		
Individual	Create a Class Student List	Add a "Back" button and make	Assign periods to each course		
Milestone	page when clicking on a row on the Teacher Schedule page.	it functionable.	section.		
Time to	~ 2 hours 10 minutes	~ 2 hours 7 minutes	~ 2 hours 30 minutes		
Complete					
Explanation of Milestone	Clicking on any row in one of the columns displaying a period will bring a up a new page containing a TreeView that will display a list of the students in that section.	When the "Back" button in the top left-hand corner is clicked, it takes you back to the previous page you were on. This works for all pages of the program.	Each course section is assigned a random period (between A-H).		
Code Output	Name Grade	Scheduler <= Back Name AA006			

AA141

Day 7 (December 1st)

Daily Milestone: Add two new buttons and change the GUI's appearance.

Daily Milesion	e: Add two new buttons ar	id change the GUI's appear	rance.
Group	Li, Tim	Melnbardis, Alex	Zheng, Bob
Member			
Individual	Link room numbers to	Modify and finalize the	Add students to course
Milestone	teachers (store together in a dictionary).	appearance of the GUI.	sections.
Time to	~ 45 minutes	~ 45 minutes	~ 45 minutes
Complete			
Explanation	Based off data read from the	The font and sizing of text for	Based on what courses
	"Teacher and Course	each TreeView was modified,	students are taking, add them
of	Information" file, a dictionary	along with the reduction in	to a section in each of their
Milestone	was created containing the	column width and the addition	courses, ensuring they cannot
	rooms that teachers can teach	of row striping for better	take two courses in the same
	in (based on their courses).	readability.	period.
Code		Course	
		AMU3M 51 36 3 AMU4M 34 27 2 APBIO 17 6 1	
Output		APCAL 17 13 1 APCHE 17 7 1	
		APPHY 17 8 1 APPOL 17 6 1 AVIZO 102 89 6	
		AVI3M 34 34 2 AVI4M 34 22 2	
		BAF3M 102 97 6 BAT4M 51 51 3	
		BBB4M 68 57 4 BBIO 119 117 7 BTT1O 85 79 5	
		CGC1D 51 49 3 CGF3M 17 9 1	
		CGF3M 17 9 1 CGW4U 34 29 2 CH43U 17 6 1	
		CHC2D 204 196 12	

Day 8 (December 2nd)

Day o (December 2)					
Daily Milestone: Complete the Teacher Schedule page and the Class Student List page.					
Group	Li, Tim	Melnbardis, Alex	Zheng, Bob		
Member	,		G.		
Individual	Fill the Class Student List with	Assign room numbers for each	Fill each teacher's schedule		
Milestone	the names of the students in each section.	section.	based on the courses they teacher during each period.		
Time to	~ 1 hour 35 minutes	~ 30 minutes	~ 1 hour 45 minutes		
Complete					
Explanation of Milestone	Based on the students assigned to each course section, their names and grade level display on the Class Student List page when each section is clicked on the Teacher Schedule page.	Room numbers are randomly assigned to each course section. However, sections with teachers who can only teach in one room are assigned room numbers first.	All of the courses that a teacher teaches, and what period they teach them, are displayed with numbers (representing class size) on the Teacher Schedule page.		
Code Output	Name Grade		D'Aguiller, Jason MAUJO 17 11 16 14 D'Aguiller, Jason AMUJO 17 11 16 14 D'Aguiller, Jason AMUJO 13 8		

Day 9 (December 3rd)

Daily Mileston	e: Complete student sched	ules.	
Group	Li, Tim	Melnbardis, Alex	Zheng, Bob
Member			
Individual	Link room numbers to student	Link teachers to student	Link courses to student
Milestone	schedules	schedules	schedules
Time to	~ 30 minutes	~ 30 minutes	~ 45 minutes
Complete			
Explanation of	For each course section a student is in, grab its room number and display it on their	For each course section a student is in, grab its teacher name and display it on their	For each course section a student is in, grab the course name and display it on their
Milestone Code	Schedule. Period Course Teacher Room 8 A ENGSU Smyths, Lella B AMU3M Hover, Ian C CLU3M Belford, Laura D 8884M Lee, Joe E MCF3M McFan, Natalie	Schedule. Period Course Teacher Room #	Schedule. Period Course Teacher Room # A ENGJU Smythe, Lella B AMUJSM Honer, Ian C CLUJSM Belford, Laura D B854M Lee, Joe E MCSSM McSae, Natalle
Output	F GP92O Reid, Matt G PP33O Miller, Colin H CHW3M Milleovich, Dan	F GPP3O Reid, Matt G PP13O Miller, Colin H CHW3M Milkovich, Dan	F GPP3O Reid, Matt G PP13O Miller, Colin H CHW3M Milkovich, Dan

Day 10 (December 5th)

<i>Daily Milestone:</i> Add two new GUI features, as well as tools to modify student schedules.					
Group	Li, Tim	Melnbardis, Alex	Zheng, Bob		
Member					
Individual	Add manual input functions to	Implement a "Save" and	Create a "Refresh"		
Milestone	the Student Schedule page.	"Load" configuration feature.	configuration feature.		
Time to	~ 1 hour 30 minutes	~ 1 hour 48 minutes	~ 1 hour 30 minutes		
Complete					
Explanation of Milestone	On the Student Schedule page, the user has the ability to swap, add, and remove courses on a student's schedule within restrictions.	Clicking the "Save" button will save the state of the program by exporting all dictionaries to a .pickle file. Clicking the "Load" button will import the file.	Clicking the "Refresh" button will run the program's process of creating teacher and student schedules again; any unsaved changes made by the user will be lost.		
Code Output	Total Course State	Save Load Scheduler Configuration saved.	Refresh Warning Any unsaved changes will be lost. Are you sure? OK Cancel		

Day 11 (December 6th)

Daily Milestone: Finalize schedule functions, reformat pages, and add another GUI button.

Daily Milesion	e. Finanze schedule functi	ons, reformat pages, and a	dd alloulei GOI bulloll.
Group	Li, Tim	Melnbardis, Alex	Zheng, Bob
Member			
Individual	Create error messages on the	Add an "Export" button to	Make select TreeViews appear
Milestone	Student Schedule page when course changes create conflict.	export student schedules to a separate file.	across the page where possible.
Time to	~ 2 hours 30 minutes	~ 35 minutes	~ 45 minutes
Complete			
Explanation	If a change is attempted on a	When the "Export" button is	When going to another page,
of	student's schedule but conflicts with something, an	clicked, every student and the courses they are taking are	the next page's TreeView appears next to the previous
Milestone	error message describing the issue pops up.	written into a .csv file.	page's TreeView.
Code	- 64 May 1987 May 198	Export	Course Available Octopied Sections Teachers Sections Sections Sections MCD 17 17 17 17 17 17 17 1
Output			
	Market 15 Market 15 Marke	Student schedules exported.	1500 150
	ANA 2	ОК	CHOCO MT 17

Day 12 (December 7th)

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Daily Milestone: Finish the program.					
Group	Li, Tim	Melnbardis, Alex	Zheng, Bob		
Member			_		
Individual	Contingency.	Contingency.	Contingency.		
Milestone					
Time to	~ 2 hours 30 minutes	~ 2 hours 30 minutes	~ 2 hours 30 minutes		
Complete					
Explanation of Milestone	Program code was re- organized, checked for warnings, and program was fully tested and debugged to check for any errors.	Program code was re- organized, checked for warnings, and program was fully tested and debugged to check for any errors.	Program code was re- organized, checked for warnings, and program was fully tested and debugged to check for any errors.		
Code					
Output					

Mr. Hall Interview Questions

- 1. What do you think are some key aspects of any kind of scheduling program?
- 2. How does the existing program create the schedules (what is the process)?
- **3.** What factors does the program take into consideration when organizing people and classes together? Are there any minimum requirements or restrictions?
- **4.** What relevant/useful information does the program and its output provide?
- 5. What are any existing problems with the program and its ways of outputting information?
- **6.** If you could add or change anything about the program, what would that be? Do you think there is a better way of scheduling?
- 7. What database should we use to build our program; do we generate by ourselves?
- **8.** How does manual input affect schedule (change/drop courses of students, add/cancel courses in the school)?
- **9.** What does the interface of the scheduler look like?
- 10. What does the data structure look like (teachers, courses, periods, rooms, students' course selection)?