

MICHIGAN STATE

U N I V E R S I T Y

Alpha Presentation

Training Scheduling and Optimization System III

The Capstone Experience

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*From Students...
...to Professionals*

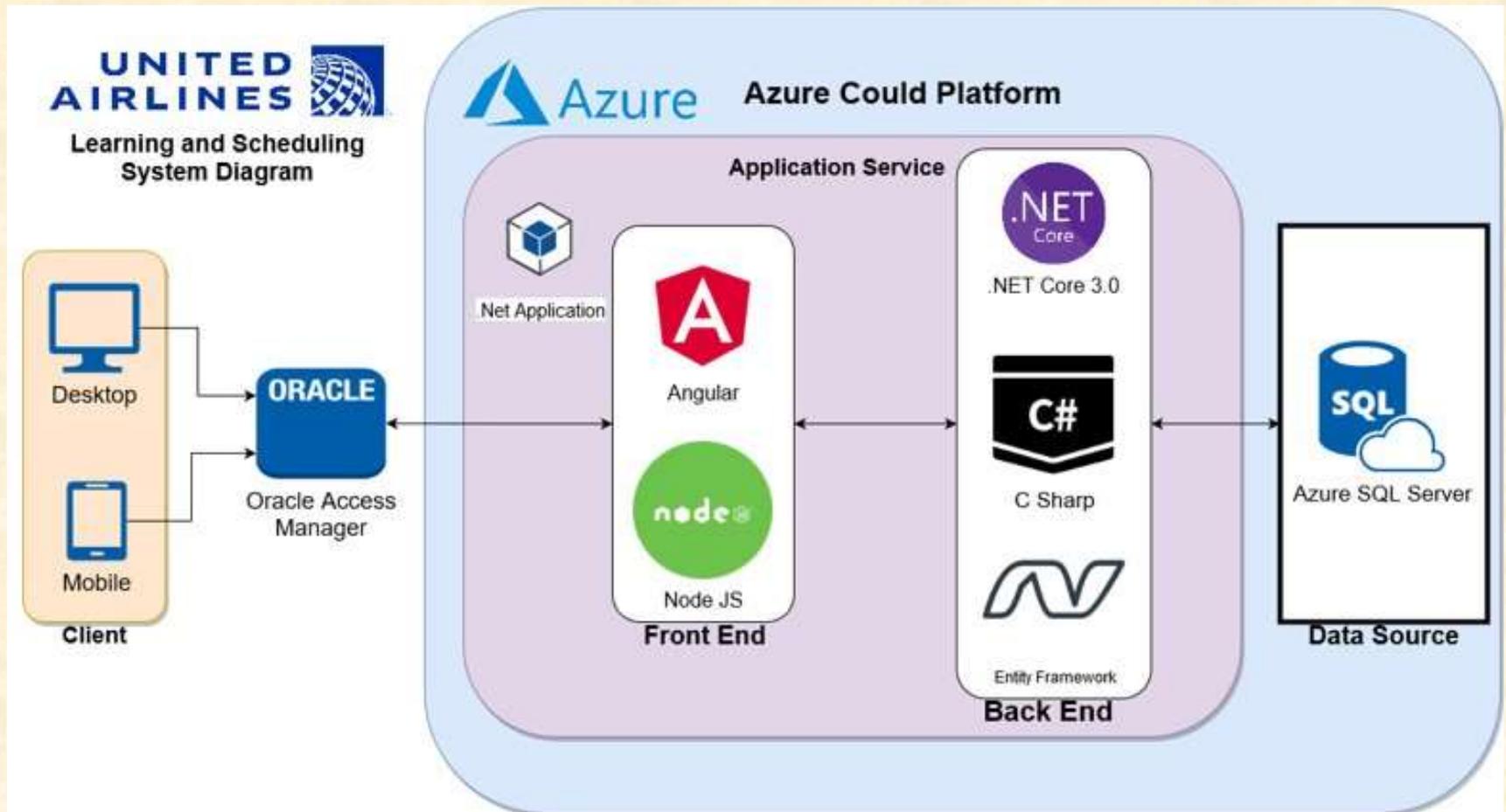
Department of Computer Science and Engineering
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Spring 2020

Project Overview

- Finalize the Learning Scheduling System from the 2 previous capstone teams
- Update back end to reflect United Airlines standards
- Add pages to improve scheduling workflow
- Build in future scalability with administrative pages
- Improve visibility into instructor time usage



System Architecture



OAM Login

The screenshot displays the OAM (Operational Administration Module) interface. The browser address bar shows 'localhost:5001/admin/courses'. The left sidebar contains a navigation menu with the following items: HOME, CALENDARS, COURSE SCHEDULE, SCHEDULE PLANNER, ADD A CLASS, SCHEDULE OPTIMIZER, CONFLICT OVERVIEW, TRAINING REQUESTS, COURSE CATALOG, EXCEPTIONS, INSTRUCTOR QUALIFICATIONS, ATTENDANCE, and ADMIN. The 'Scheduler' link is highlighted at the bottom of the sidebar.

The main content area shows a 'Course Search' field and an 'Export' button. Below these is a table of courses:

Action	Course Code	Course Title				
	37MD	737MAX Systems /				
	37PNEU	B737NG Pneumatic				
	37SA2	B737 Next Generation Systems (3 Week)	120	18		No
	37SA3	B737 Next Generation Systems (2 Week)	80	18		No
	44AES	B747-422 ACCESS Adv Ent Sys (was A08T1420)	16	20		No
	44APU	B747-400 APU Trouble Shooting (was A08T1490)	16	20		No
	44ENG	B747-400 Engine Systems and Trouble Shooting (was A00T1010)	24	20		No

A modal window is open over the course list, displaying user profile information for 'Lynda'. The modal title is '1.Scheduler' and it includes an 'UNLOCK' button. A red banner at the top of the modal states 'Tab lock is active' with a 'CLICK TO UNLOCK TAB' button. The modal content is as follows:

Name	Value		
Request Headers			
<input checked="" type="checkbox"/> Authorization	Basic [REDACTED]		
<input checked="" type="checkbox"/> x-givenName	Lynda		
<input checked="" type="checkbox"/> x-L	NHC		
<input checked="" type="checkbox"/> x-manager	[REDACTED]		
<input checked="" type="checkbox"/> x-middleName	A		
<input checked="" type="checkbox"/> x-sn	McDaniel		
<input checked="" type="checkbox"/> x-uid	[REDACTED]		



Admin Page

The screenshot displays the 'Learning Scheduling System' admin interface. The browser address bar shows 'localhost:5001/admin/locations'. The page features a dark blue sidebar with navigation options: HOME, CALENDARS, COURSE SCHEDULE, SCHEDULE PLANNER, ADD A CLASS, SCHEDULE OPTIMIZER, CONFLICT OVERVIEW, TRAINING REQUESTS, COURSE CATALOG, EXCEPTIONS, INSTRUCTOR QUALIFICATIONS, ATTENDANCE, and ADMIN. The main content area is titled 'Manage Locations' and includes an 'Export' button, an 'Add Location' button, and a search bar. Below these is a table listing various airport locations with their codes, point status, and coordinates.

Actions	Code	Point	Latitude	Longitude
	AKL	false	-37.006491	174.78053
	BCN	false	41.297461	2.082758
	BDL	false	41.938482	-72.687886
	BOM	false	19.090736	72.862052
	BOS	false	42.367206	-71.011888
	CDG	false	49.009564	2.542839
	CHS	false	32.894862	-80.040101



Book a Room

The screenshot shows a web browser window with the URL `localhost:5001/classroom-request`. The page title is "Learning Scheduling System" and the user is logged in as "Mcdaniel, Lynda". The main heading is "ClassRoom Request".

The form contains the following fields:

- Name:** Fake User
- Location:** SFO
- Phone:** 5170000000
- Number of People:** (empty)
- Reason/Comments:** Any comment?

A date picker is open, showing the month of February 2020. The dates 17 and 20 are selected. The time range is set from 2/17/2020, 8:34 PM to 2/20/2020, 8:34 PM. The date picker also shows a time range of 20 to 34.

The left sidebar contains the following navigation items:

- HOME
- CALENDARS
- COURSE SCHEDULE
- SCHEDULE PLANNER
- ADD A CLASS
- SCHEDULE OPTIMIZER
- CONFLICT OVERVIEW
- TRAINING REQUESTS
- BOOK CLASSROOM
- COURSE CATALOG
- EXCEPTIONS
- INSTRUCTOR QUALIFICATIONS
- ATTENDANCE
- ADMIN
- REPORTS

The footer of the sidebar says "Scheduler".



Book a Room

Learning Scheduling System x +
localhost:5001/classroom-request

Classroom Request

UNITED

- HOME
- CALENDARS
- COURSE SCHEDULE
- SCHEDULE PLANNER
- ADD A CLASS
- SCHEDULE OPTIMIZER
- CONFLICT OVERVIEW
- TRAINING REQUESTS
- BOOK CLASSROOM
- COURSE CATALOG
- EXCEPTIONS
- INSTRUCTOR QUALIFICATIONS
- ATTENDANCE
- ADMIN
- REPORTS

Scheduler

Name: Fake User Email: fakemail@address.com

Location: SFO Date: 2/17/2020, 8:34 PM ~ 2/20/2020, 8:34 PM

Number of People: 5

Reason/Comments: Any comment?

-- select classroom --

- Bldg 47 , Room: 01
- Bldg 47 , Room: 02
- Bldg 47 , Room: 03
- Bldg 47 , Room: 04
- Bldg 47 , Room: 05
- Bldg 47 , Room: 06
- Bldg 47 , Room: 07
- Bldg 47 , Room: 08
- Bldg 47 , Room: 09
- Bldg 47 , Room: 10a
- Bldg 47 , Room: 10b
- Bldg 47 , Room: 11
- Bldg 47 , Room: 12
- Bldg 47 , Room: 14
- Bldg 47 , Room: 15
- Bldg 47 , Room: Mez
- Bldg 10 , Room: CRF01
- Bldg 47 , Room: 10R

-- select classroom --



Book a Room

The screenshot shows a web browser window with the URL `localhost:5001/classroom-requests`. The page title is "Learning Scheduling System" and the user is logged in as "Mcdaniel, Lynda". The main heading is "Classroom Schedule". A "Location" dropdown menu is visible. Two buttons, "View Request" and "Request Classroom", are present. A modal window titled "Classroom Requests" displays a table with the following data:

#	Name	LocationCode	NumPeople	Phone	Email	StartDate	EndDate	Comment
1	FakeUser1	SFO	5	5170000000	fakeEmail@email.com	2020-02-25T12:05:00	2020-02-27T12:05:00	
2	NewUser2	HNL	6	5171111111	useremail@email.com	2020-02-18T14:25:00	2020-02-22T14:25:00	Testing...
3	testUser3	SFO	0	3333333	3333	2020-02-26T20:57:00	2020-02-27T20:57:00	nope



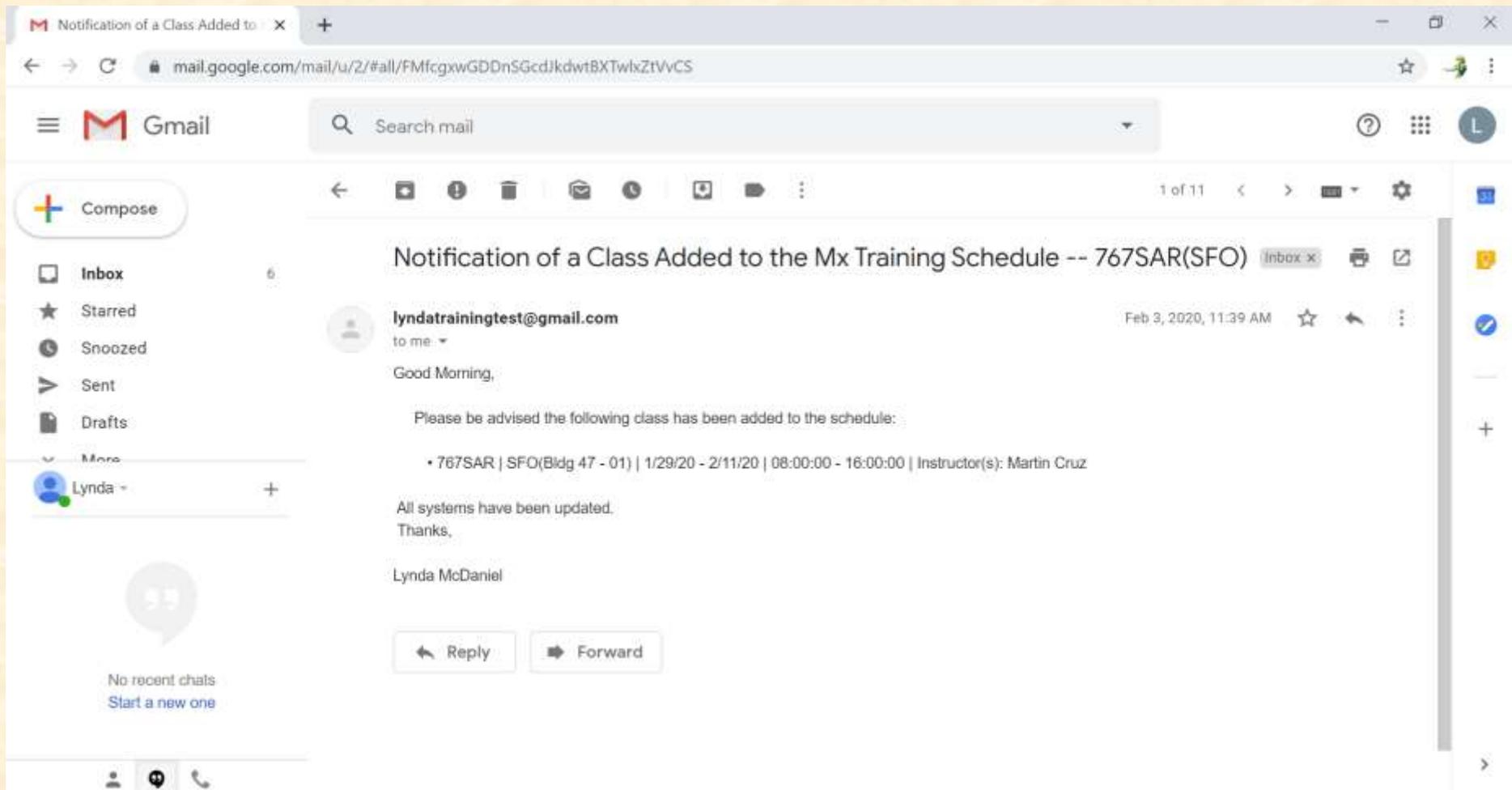
Qualification Report

The screenshot displays the Learning Scheduling System interface. The browser address bar shows 'localhost:5000/reports/qualifications'. The page header includes the United logo, the system name 'Learning Scheduling System', and the user 'Mcdaniel, Lynda'. A navigation menu on the left lists various system functions. The main content area features a 'Qualifications Report' table with columns for Instructor, Course Code, Course Title, Qualification, and Date Last Taught. The table lists 14 entries for instructor Robert Adkins, showing various course titles and their last taught dates.

Instructor	Course Code	Course Title	Qualification	Date Last Taught
Adkins, Robert	TS20	Taxi/Engine Run Student A319/A320	Teach All	12/02/2019
Adkins, Robert	TS20	Taxi/Engine Run Student A319/A320	Teach All	10/15/2019
Adkins, Robert	ABENH	Airbus A319 A320 Enhancements	Teach All	12/02/2019
Adkins, Robert	ABENH	Airbus A319 A320 Enhancements	Teach All	10/15/2019
Adkins, Robert	WFI	WFI / GCS Equipped, Multi Fleet	Teach All	12/02/2019
Adkins, Robert	WFI	WFI / GCS Equipped, Multi Fleet	Teach All	10/15/2019
Adkins, Robert	AHMAB	Health Monitoring Airbus Company	Teach All	12/02/2019
Adkins, Robert	AHMAB	Health Monitoring Airbus Company	Teach All	10/15/2019
Adkins, Robert	A320LGC	LGCIJ Crane Proximity Sensing Technology Testing/Troubleshooting	Teach All	12/02/2019
Adkins, Robert	A320LGC	LGCIJ Crane Proximity Sensing Technology Testing/Troubleshooting	Teach All	10/15/2019
Adkins, Robert	A320TS	A319/A320 Troubleshooting Philosophy	Teach All	12/02/2019
Adkins, Robert	A320TS	A319/A320 Troubleshooting Philosophy	Teach All	10/15/2019



Email Notification



What's left to do?

- Full OAM integration
- Finish utilization reports and time tracking
- Track changes made to database (user records, previous schedules, etc.)
- Email template and integration into United Airlines networks
- Resolving optimizer issues
- Add page to import historical data



Questions?

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