Curriculum and Instruction Doctoral Tracker DR3

Team What's Up Doc



Introduction

Meet the Team:

- Adam Larson
 - Team Lead, connections and back end developer
- Brandon Shaffer
 - Repo manager, chief editor, front end developer
- Eddie Lipan
 - Front end developer
- Special thanks to mentor Daniel and CS Faculty Member Dr. Michael Leverington







Meet the Client:

- Dr. Gretchen McAllister, Ph.D., Coordinator of the NAU Curriculum and Instruction (C&I) doctoral program
 - Aided by Michele Benedict, Administrative Services Assistant

Problem Statement

As of Fall 2020, **3.1 million graduate students** attended universities across the United States. [1]

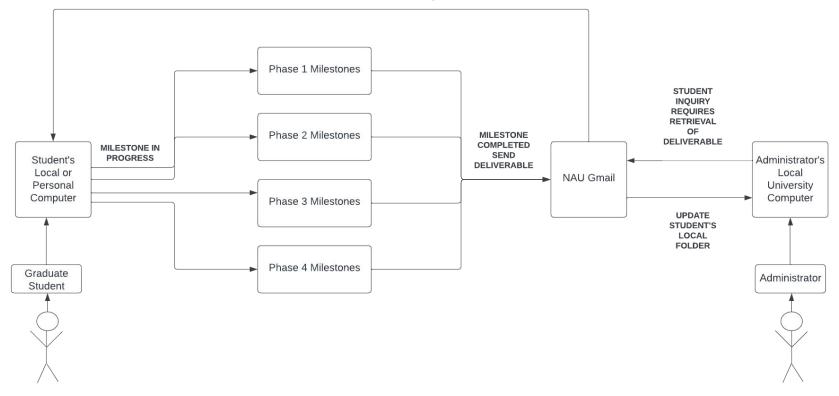
- Learning Management Systems (LMS) such as Blackboard Learn or Canvas are generally used to manage undergraduate classwork and grades.
- As graduate work becomes less quantifiable, managing and tracking the program through a standard LMS becomes less feasible.
- The NAU C&I doctoral program's current workflow is inefficient. Workflow outlined on next slide.

Blackboard learn

LAST ACTIVITY	GRADE
Jan 21, 2022 2:48 PM GRADED	765862
Feb 2, 2022 9:30 PM	13.00
GRADED	/16
Feb 9, 2022 11:27 AM	12.00
GRADED	/19
Feb 11, 2022 11:48 AM	20.00
GRADED	/23
Jan 19, 2022 4:29 PM	20.00
GRADED	/20
Feb 11, 2022 3:22 PM	117.00
GRADED	/125

[1] National Center for Education Statistics - Postbaccalaureate Enrollment

ADMIN REPLIES TO STUDENT INQUIRY



Current C&I Doctoral Program Workflow

Solution Overview

- Organization
 - Student
 - Categories
- Searchable
 - Administration tool
- Student Access
 - Progress Tracker
- Redundancy
 - Backups



Requirements/Specifications Review

- Database for student files
- Two levels of access
 - o Student
 - Faculty
- Web application
 - Database upload/download
 - Statistical Data
- NAU Colors
- Accessibility

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	Pantone® 173 C C11 M87 Y100 K2 R213 G68 B28	Pantone® 7467 C C95 M0 Y35 K0 R0 G172 B165

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Architecture Review

- Front-End
 - HTML Pages
 - CSS styling
 - JavaScript functionality
- Back-End
 - MySQL database
 - Rest API interaction
 - AWS server host

	AWS	
Web Application	Rest API	MySQL Database

Implementation Details

Web App

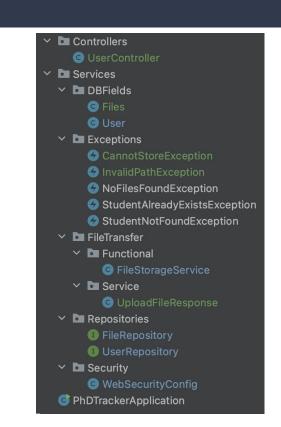
- HTML/CSS/JS
- Updates Dynamically
- Menu on left changes as files are uploaded
- Doctoral phases on top change as menu completes
- Large area is a preview placeholder

Phase 1: Coursework	Phase 2: Qualitative Research Project/ Comprehensive Exams	Phase 3: Proposal and Prospectus	Phase 4: Research and Dissertation
Qualifying Research Completion form: Completed 2/6/2020!	ualifying Research Completion Form		
Comprehensive Exam Scheduling Form:			
Comprehensive Exam Results Form:			
Recommendation of Dissertation Committee Form (completed with chair):			
Graduate college letter confirming dissertation committee:			
Student Self-Evaluation 2 :			

Implementation Details

Rest API

- Spring Boot Java Framework
- Creates endpoints for web requests to send and receive data
- Data connectivity
 - Spring JPA (Java Persistence API) module
 - Automated SQL requests through a CRUD (create, read, update, delete) or JPA repository interface
- Security
 - Spring Security Module
 - Industry standard OAuth2 connections
 - Easily configured policy for endpoint data retrieval
 - SSL Certificate used for encryption from client to server and server to database



Implementation Details

Database

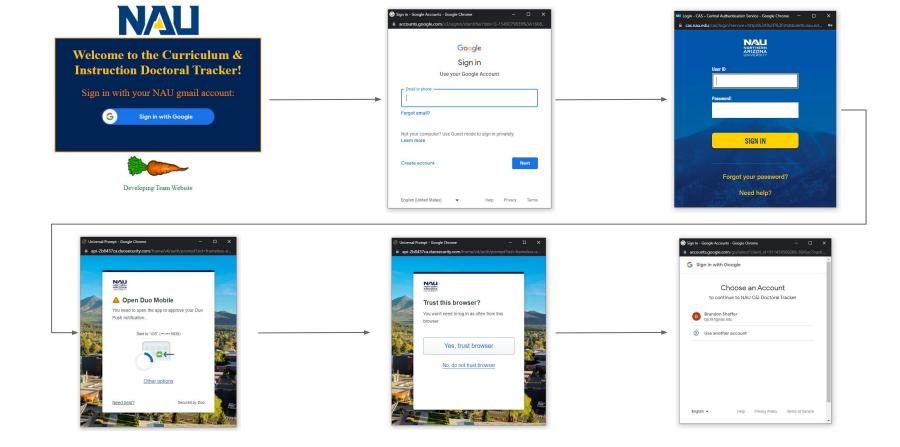
- MySQL
- Two tables
 - User table holds general student/admin information and status
 - File table stores file data and user connections

FieldTypeNullKeyDefaultExtrauserNointNOPRINULLauto_incrementuserIDvarchar(255)NONULLIfirst_namevarchar(255)NONULLIlast_namevarchar(255)NONULLIadmintinyint(1)YES0I	mysql> describe capstone.user;												
userID varchar(255) NO NULL	Field	Туре	Null	Key	Default	Extra							
	userID first_name last_name	varchar(255) varchar(255) varchar(255)	NO NO NO	PRI	NULL NULL NULL	auto_increment 							

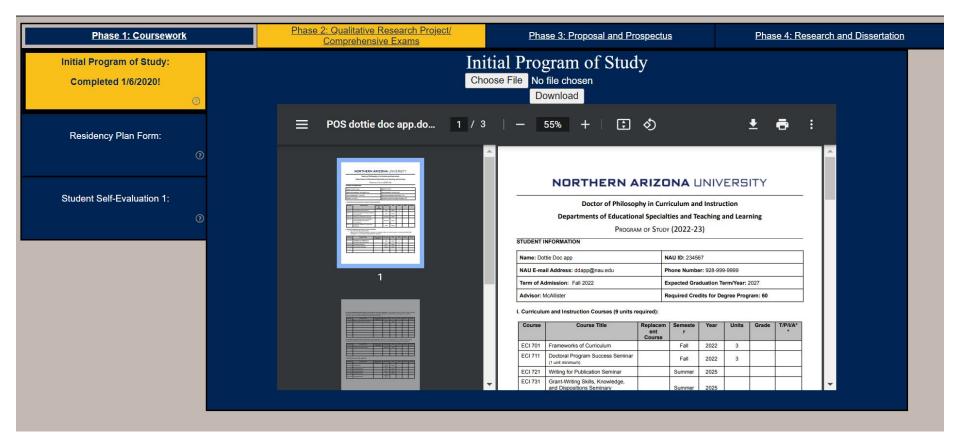
5 rows in set (0.00 sec)

[mysql> describe capstone.files;

+ Field	 Туре	+	Кеу	Default	+ Extra
uploadID filename filetype data upload_time userID uploaded_as	varchar(36) varchar(256) varchar(256) longblob varchar(100) varchar(50) varchar(100)	NO YES YES YES YES YES	PRI MUL	NULL NULL NULL NULL NULL NULL	
7 rows in set	(0.00 sec)				



Prototype Review – Landing Page



Prototype Review – Student Home Page

			d/Remove Students	Student			Enter New User's Information userID: Last Name: First Name: Advisor (Last Name): Term Activation: Spring 2014 ~ Enrollment Status: Full ~ Admin Status: True ~
		User Edit Us		Copy CSV	/ Excel PD Search:	F	Submit
ıserID 🔶	Last Name	First Name	Advisor (Last Name)	Term Activation	Enrollment Status	Admin Status	Edit Existing User's Informatio
al762	Larson	Adam	Donaldson	fall2016	fullTime	false	Last Name:
amf867	Figurski	Alana	Breen	fall2018	partTime	false	First Name:
bjs397	Shaffer	Brandon	Hall	spring2018	fullTime	false	Advisor (Last Name):
ml292	Lipan	Eddie	Lindsey	fall2019	fullTime	false	Term Activation: Spring 2014 Y
	Showing 1 to					Previous 1 Next	Admin Status: True Y

Prototype Review – Admin Home Page

Submit





Copy CSV Excel PDF													
	Show 10 🗸 entries Search:												
Last First Term Phase 1 Phase 2 Phase 3 Phase 3 Phase 4 userID Name Name Activation (0/3) (0/3) (0/5) (0/5) (0/4)													
al762	Larson	Adam	fall2016	3	5	5	2						
amf867	Figurski	Alana	ana fall2021 3		0	0	0						
bjs397	Shaffer	Brandon	spring2018	3	5	3	0						
eml292	Lipan	Eddie	fall2019	3	4	0	0						
Showing 1 to 4 of 4 entries Previous 1 Next													

Prototype Review – Admin Home Page

Er	nter valid Student us	serID:	Q								
Phase 1: Coursework	<u>k</u>	Phase 2: Qualitative Research Project/ Comprehensive Exams	Phase 3: Proposal and Prospectus	Phase 4	4: Research and Dissertation						
Initial Program of Study: Completed 1/6/2020!	<u> </u>	Initial Program of Study Choose File No file chosen Download									
Residency Plan Form:		■ POS dottie doc app.do 1 / 3	— 55% + 🕄 🕎	± 6							
Student Self-Evaluation 1:	0		NORTHERN ARIZONA UNIVERSITY Doctor of Philosophy in Curriculum and Instruction Departments of Educational Specialties and Teaching and Learning								
			PROGRAM OF STUDY (2022-23) STUDENT INFORMATION Name: Dottle Doc app NAU ID: 234567								
		1	Advisor: McAllister Required Credit	928-999-9999 ation Term/Year: 2027 s for Degree Program: 60							
			ECI 701 Frameworks of Curriculum Fall ECI 701 Frameworks of Curriculum Fall ECI 711 Doctoral Program Success Seminar ECI 721 Writing for Publication Seminar Summer ECI 731 Grant-Writing Skills, Knowledge,	Year Units Grade T/F 2022 3 2022 3 2025							

Prototype Review – Admin Home Page

Challenges and Resolutions

Primary

- ITS Assistance
 - Resolution: None yet
 - Waiting for direction and sourcing options outside of school
- Technology
 - Resolution: Lots of research
 - Numerous tutorials, videos, and trial and error
 - Some commercial assistance

Secondary Challenges

- Maintaining requirements
 - Resolution: Limits on what we can do in remaining time
 - Many changing requests and additional desired functions or student feedback
- Client scheduling
 - Resolution: Accommodate as much as possible
 - Two effective clients working together makes scheduling more challenging
 - Meet when possible, even if one person isn't available

Testing Plan

Website

- Manual
- Testing website as features are implemented and connected
- Cons Slow and can be inconsistent

Server

- Java Based
- Uses the Spring framework and JUnit5
- Tests are automated and available for all functionality end-points, DB connection, auto-mailer, etc.

Database

- Test method is manual returned data is confirmed through Java tests
- MySQL tests seem to be manual or set up by personal script
 - Creates additional overhead for testing our very light database use

Schedule

Team Members: Adam Larson, Brandon S	haffor Eddia Linan	Project Start:	Sun, 8/2	28/2022		~											
Adam Larson, Brandon 3	marrer, Eddle Elpan	Display Week:	1		Aug 29, 2022	Sep 5, 2022	Sep 12, 2022	Sep 19, 2022	Sep 26, 2022	Oct 3, 2022 0	Oct 10, 2022	Oct 17, 2022	Oct 24, 2022	Oct 31, 2022	Nov 7, 2022	Nov 14, 2022	Nov 21, 2022
	ASSIGNED				29 30 31 1 2 3	4 5 6 7 8 9 10 1	12 13 14 15 16 17	8 19 20 21 22 23 24 2	26 27 28 29 30 1 2	3 4 5 6 7 8 9 10	11 12 13 14 15 1	6 17 18 19 20 21 22 21					20 21 22 23 24 25 26 27
TASK	то	PROGRESS	START	END	MTWTFS	S M T W T F S S	MTWTFS	SMTWTFS3	MTWTFSS	M T W T F S S M	TWTFS	S M T W T F S S	M T W T F S	S M T W T F S S	M T W T F S S	MTWTFS	S M T W T F S S
Backend Operations																	
Create Databases	Adam	100%	8/28/22	9/4/22													
Initialize REST API	Adam	100%	8/28/22	9/7/22													
API End Points	Adam	100%	8/28/22	9/12/22													
API Security Policies	Adam	100%	9/5/22	9/19/22													
API/DB File Storage	Adam	100%	9/19/22	10/5/22													
Email Response	Adam	100%	11/1/22	11/8/22													
Front End Operations																	
Initialize Website	Eddie	100%	8/29/22	9/18/22													
Set Up Login System	Brandon/Adam	70%	9/19/22	10/2/22													
Add Menu and Format	Eddie	75%	9/19/22	10/9/22													
API Connection	Eddie/Brandon	40%	10/3/22	10/23/22													
Data Display Pages	Brandon/Eddie	80%	10/3/22	10/23/22													
Account																	
Google Security Policy	Adam	100%	9/7/22	9/14/22													
Google API connection	Adam/Brandon	70%	10/3/22	10/16/22													
Data Filtering	Adam	70%	10/17/22	10/30/22													
Finalization																	
API/DB Testing	Adam	80%	11/11/22	11/18/22													
Web App Testing	Brandon/Eddie	60%	10/31/22	11/6/22													
Full Deployment	Adam/Brandon/Eddie	0%	11/20/22	11/27/22													

Conclusion

Team What's Up Doc is delivering an intuitive tracker, as a website application, to the NAU C&I doctoral program that will:

- Adhere to proper COE authentication and authorization
- Relieve administrators from data entry and acquisition duties
- Allow graduate students to track their progress through the graduate program

