



Beta Presentation

MAPT: Manufacturing Avatar Plant Twin

The Capstone Experience

Team Dow

Jack Brooks

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Chenyu Hu

Francisco Santos

Larry Zahner

Department of Computer Science and Engineering

Michigan State University

Spring 2020



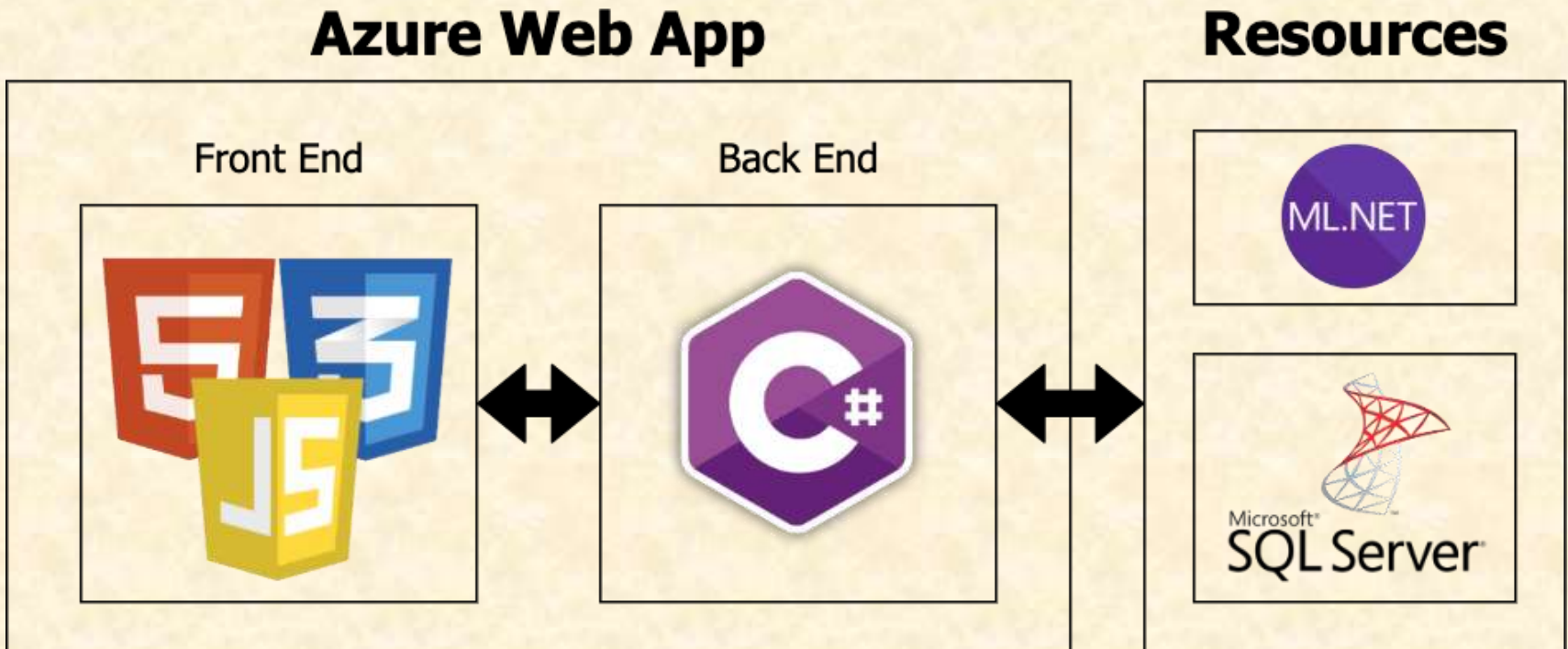
*From Students...
...to Professionals*

Project Overview

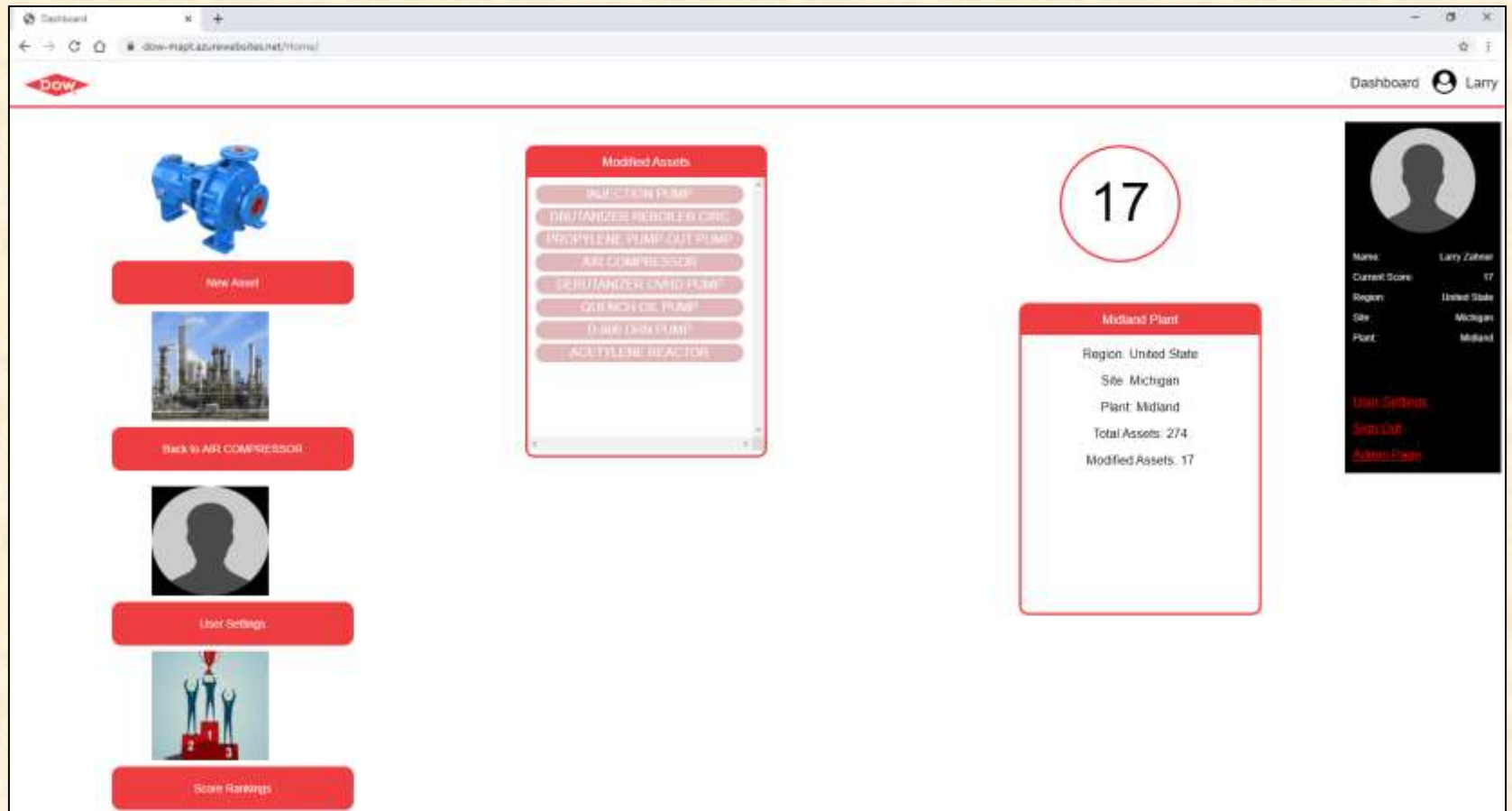
- Build an Interactive Interface for Dow's Experts
- Record Locations for Tagging Equipment
- Maintain Database of Complete Records
- Give Administrative Tools To Manage Process



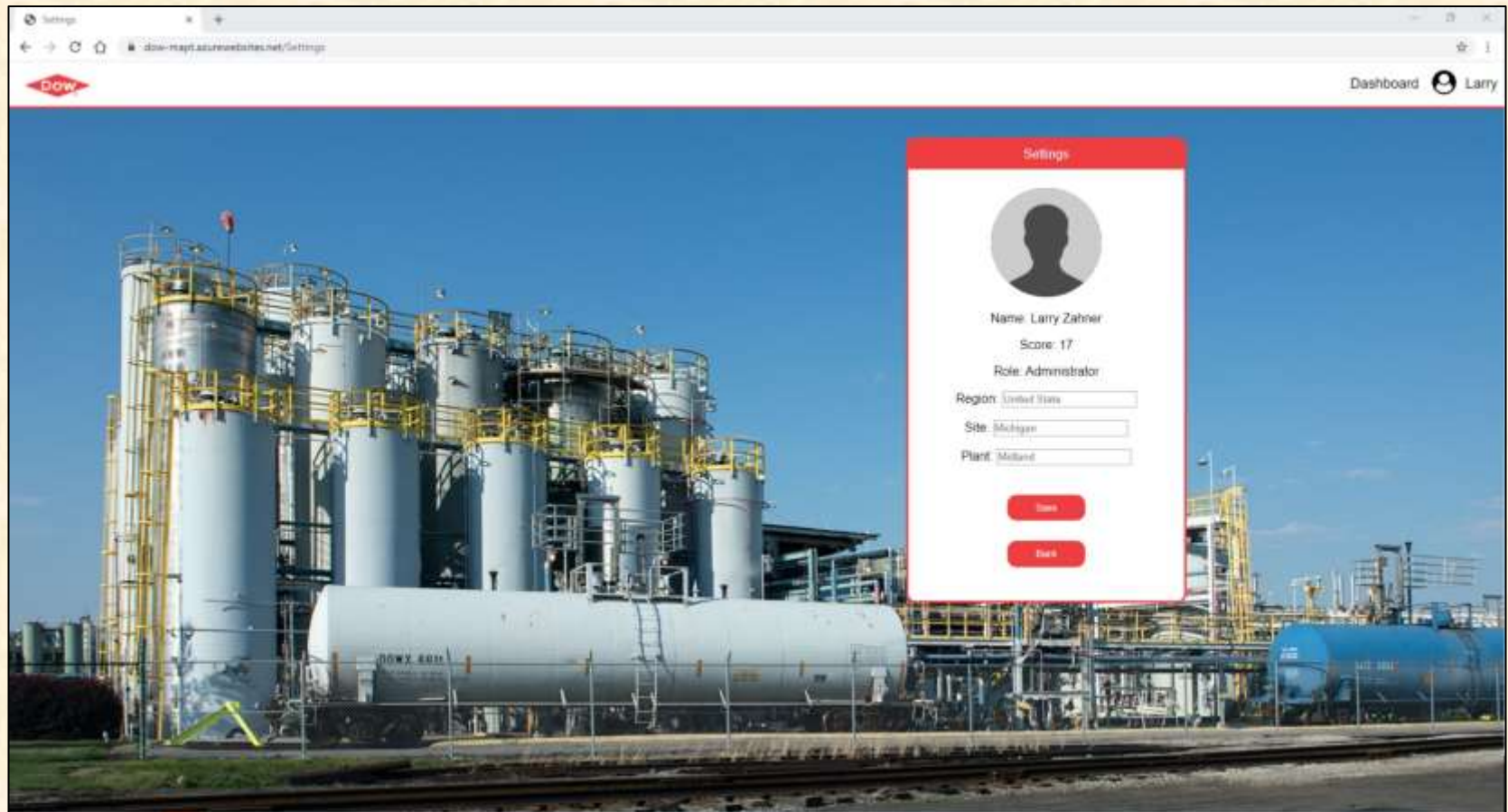
System Architecture



User Dashboard




User Settings



Settings

Dashboard Larry

Settings



Name: Larry Zahner
Score: 17
Role: Administrator

Region:
Site:
Plant:



User Score Leaderboard

Score Ranking

Dashboard Larry

User Leader Board

Choose a region: All Region Choose a site: All Sites Choose a plant: All Plant

Submit Reset

RANK	NAME	SCORE	REGION	SITE	PLANT
1	Hu Chongyu	22	United Kingdom	London	London
2	Larry Zahner	17	United States	Michigan	Midland
3	Jerry Smith	10	United Kingdom	London	London
4	Colin Holmstrom	2	United States	New York	New York City
5	Fredrick Serbin	0	United States	Michigan	Midland
6	Chongyu Hu	0	United States	Michigan	Midland



Asset Search

Search

Search

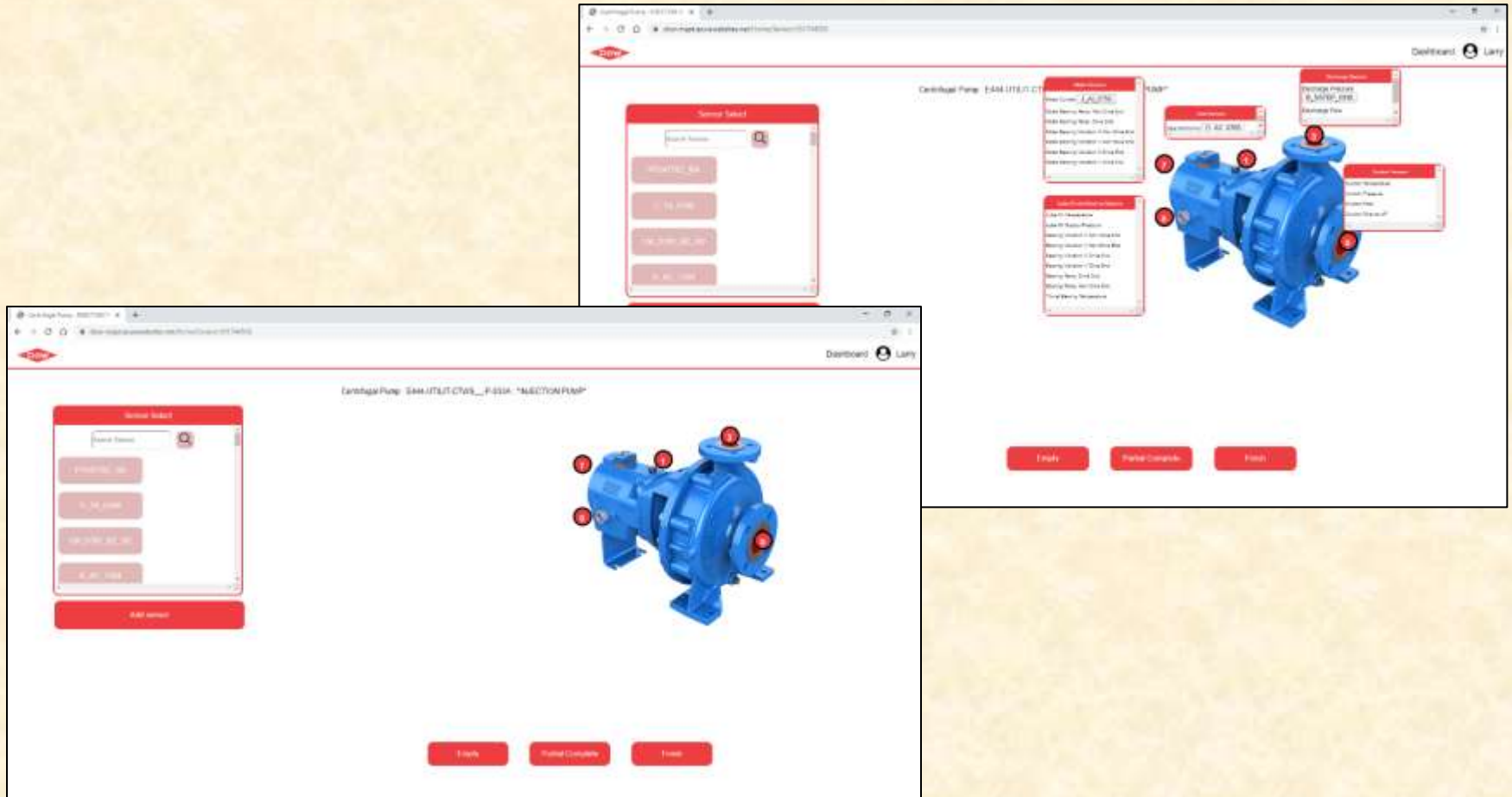
Dashboard Larry

Pump Go!

Status	Asset Name	Description	Object Type
●	E444-UTILIT-PIA___C-860	AIR COMPRESSOR	Compr Centrifugal
●	E444-UTILIT-PIA___C-861	AIR COMPRESSOR	Compr Centrifugal
●	E444-UTILIT-PIA___C-862	AIR COMPRESSOR	Compr Centrifugal
●	E444-CRGASC-GCC___COMPRESSORS	ALL LHCS COMPRESSORS	Compr Centrifugal
●	E444-CRGASC-GCC___C-10A	1ST STAGE CG COMP	Compr Centrifugal
●	E444-CRGASC-GCC___C-10B	2ND & 3RD STAGE CG COMP	Compr Centrifugal
●	E444-CRGASC-GCC___C-10C	4TH STAGE CG COMP	Compr Centrifugal
●	E444-RECOVE-C2REF___C-20	ETHYLENE COMPRESSOR	Compr Centrifugal
●	E444-RECOVE-C3REF___C-30	PROPYLENE COMPRESSOR	Compr Centrifugal
●	E444-RECOVE-MC___C-51	METHANE COMPRESSOR	Compr Centrifugal
●	E444-RECOVE-TRBOEX-C-2	OFFGAS RECOMP NO 2	Compr Centrifugal
●	E444-CRGASC-DPROP___TE-FUTURE	TURBO EXPANDER	Compr Centrifugal
●	E444-CRGASC-RS___R-46A	ACETYLENE REACTOR	Compr Centrifugal
●	E444-GEN___MISC___PPM-C-710	C-710 PPM ROUTES	Compr Centrifugal
●	E444-UTILIT-CTWS___P-833A	INJECTION PUMP	Centrifugal Pump
●	E444-RECOVE-C4PLUS-P-160A	DEBUTANIZER OVERHEAD PMP	Centrifugal Pump
●	E444-RECOVE-C4PLUS-P-160B	DEBUTANIZER OVERHEAD PMP	Centrifugal Pump
●	E444-RECOVE-C4PLUS-P-161A	DEBUTANIZER REBOILER CIRC	Centrifugal Pump
●	E444-RECOVE-C4PLUS-P-161B	DEBUTANIZER REBOILER CIRC	Centrifugal Pump
●	E444-RECOVE-C3S___P-5400A	PROPYLENE PUMP-OUT PUMP	Centrifugal Pump



Asset Pump



Asset Compressor

Compr Centrifugal : AIR COMPRESSOR


Dashboard Larry

Compr Centrifugal : E444-UTIL/T-PIA___C-850 : "AIR COMPRESSOR"

Search Sensor:

- CLAC_0705
- CLAC_0706
- LM_E201_362_50
- BLAC_3304

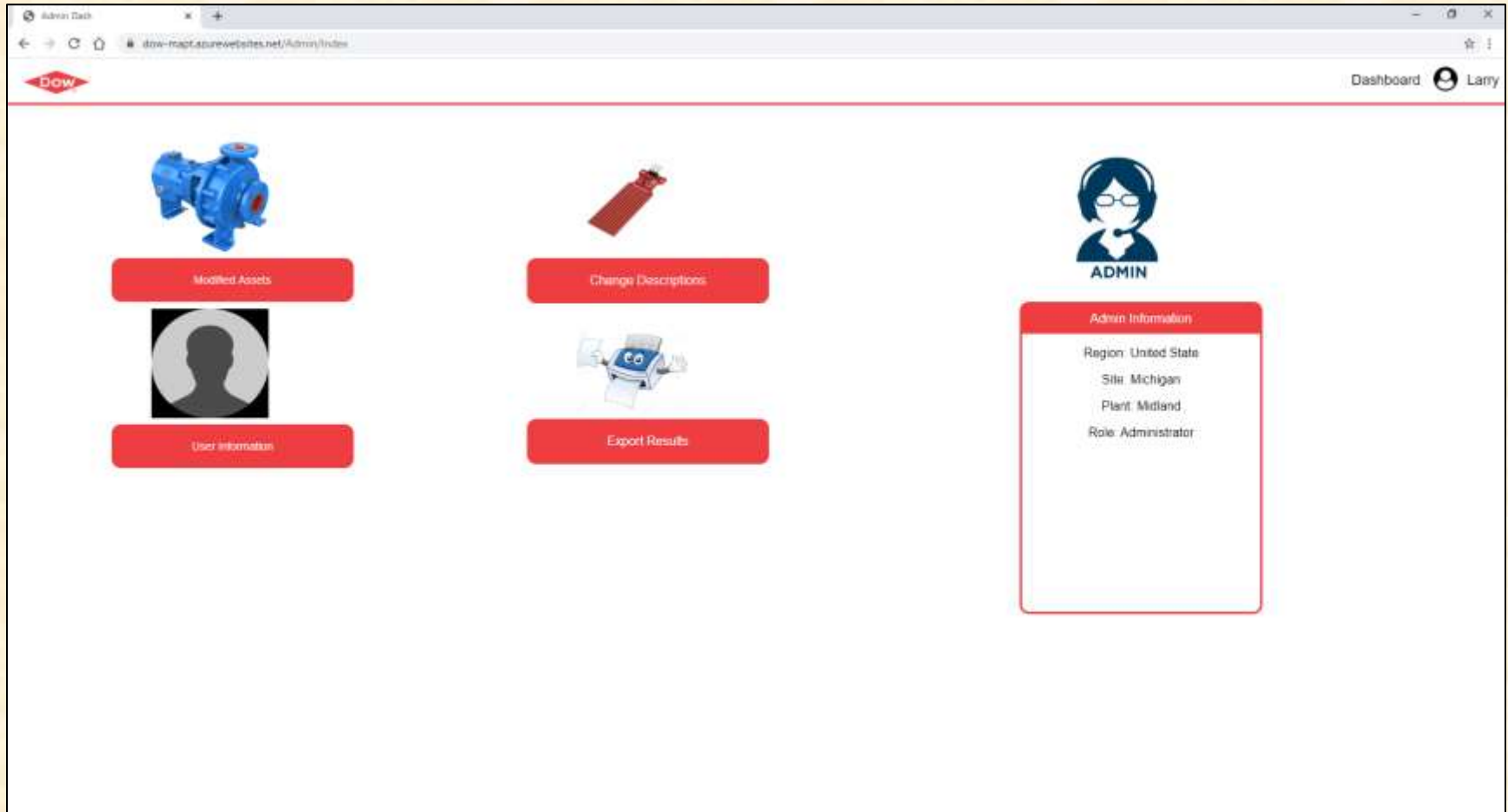
Add sensor



Empty Partial Complete Finish



Administrator Dashboard



Admin Association Ranking

Association Ranking

dow-mgmt.azurewebsites.net/Admin/AssociationRanking

Dashboard Larry

Modified Assets

Search for names

FUNCTIONAL LOCATION	DESCRIPTION	TYPE	USER	DATE	GO TO ASSET	DELETE
E444-UTILIT-PA____C-060	AIR COMPRESSOR	Compr Centrifugal	Larry Zahner	3/31/2020 5:41:59 PM	C-060	Delete
E444-CRGASC-RS____R-45A	ACETYLENE REACTOR	Compr Centrifugal	Larry Zahner	3/30/2020 7:08:44 PM	R-45A	Delete
E444-CRGASC-RS____R-45A	ACETYLENE REACTOR	Compr Centrifugal	Larry Zahner	3/30/2020 7:08:44 PM	R-45A	Delete
E444-CRGASC-RS____R-45A	ACETYLENE REACTOR	Compr Centrifugal	Larry Zahner	3/30/2020 7:08:44 PM	R-45A	Delete
E444-UTILIT-STF____P-906	D-906 DRN PUMP	Centrifugal Pump	Larry Zahner	3/30/2020 7:06:26 PM	P-906	Delete
E444-UTILIT-STF____P-906	D-906 DRN PUMP	Centrifugal Pump	Larry Zahner	3/30/2020 7:06:26 PM	P-906	Delete
E444-UTILIT-STF____P-906	D-906 DRN PUMP	Centrifugal Pump	Larry Zahner	3/30/2020 7:06:26 PM	P-906	Delete
E444-UTILIT-STF____P-906	D-906 DRN PUMP	Centrifugal Pump	Larry Zahner	3/30/2020 7:06:26 PM	P-906	Delete
E444-RECOVE-C4PLUS-F-66A	DEBUTANIZER OVHD PUMP	Centrifugal Pump	Larry Zahner	3/30/2020 11:52:49 PM	F-66A	Delete
E444-RECOVE-C4PLUS-F-66A	DEBUTANIZER OVHD PUMP	Centrifugal Pump	Larry Zahner	3/30/2020 11:52:49 PM	F-66A	Delete
E444-RECOVE-C4PLUS-F-66A	DEBUTANIZER OVHD PUMP	Centrifugal Pump	Larry Zahner	3/30/2020 11:52:49 PM	F-66A	Delete



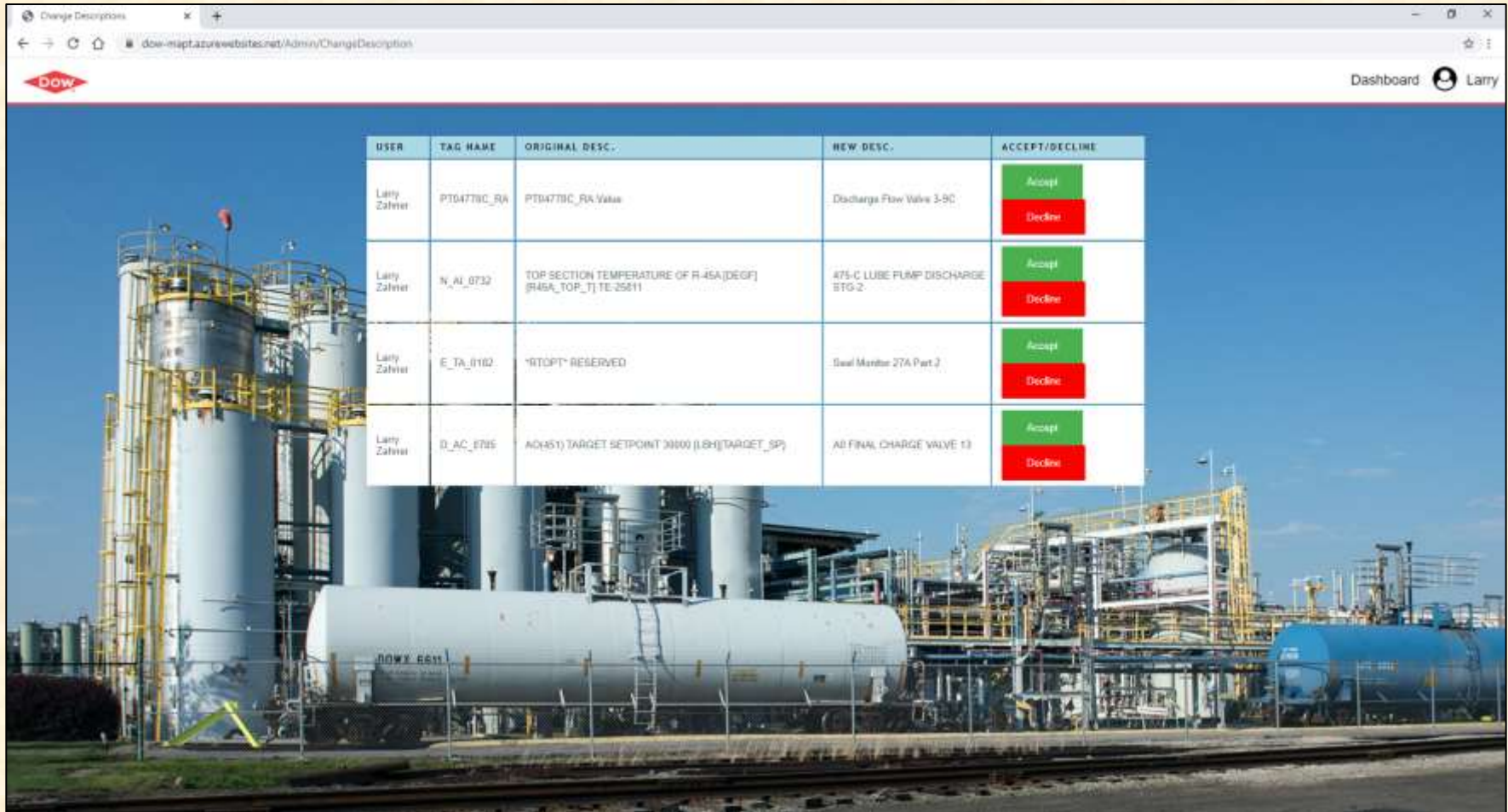
Admin User Status

The screenshot shows a web browser window with the URL `dow-mgmt.azurewebsites.net/Admin/UserStatus`. The page features the Dow logo in the top left and a "Dashboard" link with a user profile icon labeled "Larry" in the top right. A red banner at the top center reads "User information". Below this is a search bar with the placeholder text "Search for names". A central icon of a person with a plus sign indicates a "Add User" function. A table displays the current user status, with columns for USER ID, NAME, REGION, SITE, PLANT, SCORE, ROLE, EDIT, and DELETE. The table contains six rows of user data. The background of the interface is a large image of an industrial facility with tall storage tanks and piping.

USER ID	NAME	REGION	SITE	PLANT	SCORE	ROLE	EDIT	DELETE
1	Colin Heilmann	United States	New York	New York City	2	User	Revoke	Delete
2	Larry Zahner	United States	Michigan	Midland	17	Administrator	Revoke	Delete
3	Francisco Santos	United States	Michigan	Midland	0	User	Revoke	Delete
4	Chenyu Hu	United States	Michigan	Midland	0	User	Revoke	Delete
5	Jerry Smith	United Kingdom	London	London	10	User	Revoke	Delete
6	Hu Chenyu	United Kingdom	London	London	22	User	Revoke	Delete



Admin Change Description



Change Descriptions

doe-mapt.azurewebsites.net/Admin/ChangeDescription

Dashboard Larry

USER	TAG NAME	ORIGINAL DESC.	NEW DESC.	ACCEPT/DECLINE
Larry Zahner	PT04778C_RA	PT04778C_RA Value	Discharge Flow Valve 3-9C	<button>Accept</button> <button>Decline</button>
Larry Zahner	N_AI_0732	TOP SECTION TEMPERATURE OF R-45A (DEGF) (R45A_TOP_T) TE-25611	475-C LUBE PUMP DISCHARGE BTG-2	<button>Accept</button> <button>Decline</button>
Larry Zahner	E_TA_0102	"RTOPT" RESERVED	Seal Monitor 27A Part 2	<button>Accept</button> <button>Decline</button>
Larry Zahner	D_AC_0705	AC451 TARGET SETPOINT 20000 (LBS)(TARGET_SP)	A0 FINAL CHARGE VALVE 13	<button>Accept</button> <button>Decline</button>



What's left to do?

- Finalize Layout and Design
- Clean Up Code and Back End
- Finish Mobile Implementation



Questions?

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