

Tasks

1. Meet with sponsor to discuss the project.
2. Research 3D vector spaces and AWS (Amazon Web Services).
3. Understand AWS SQS, API Gateway, Lambda, DynamoDB, Kinesis – investigate API choices (http, rest, etc.), practice/learn programming lambda functions, investigate NoSQL and DynamoDB.
4. Understand the use cases given by sponsor. – Formulate questions for the sponsor as a team.
 - a. Submit Updated Metric
 - b. Retrieve Historical Data
 - c. Calculate Attribute Affinity and Persist – Address mathematics of the function to be created, so we can divide up work on it in the future.
5. High Level Design of project
 - a. API Gateway – Decide on API type and number of API being created
 - i. GET method – Do we use query string parameters or take in a JSON payload from the client?
 - ii. POST method – What should the response payload look like?
 - b. Lambda – Decide number of functions needed and any additions for future versions. Plan to stub out each lambda function for testing.
 - i. retrieve – Define event payloads. (Received and sent)
 - ii. update – Define event payloads. (Received and sent)
 - iii. calculateAffinity – Define event payloads. (Received and sent)
 - c. DynamoDB – Decide number of tables and name them.
 - i. raw table – Define rough schema.
 - ii. processed table – Define rough schema
 - d. Kinesis - Study its connection to the raw table and how it will send data to the calculateAffinity Lambda.
 - e. SQS - Decide whether this will be part of version 1 of the project.
6. Fill out preliminary proposal and create presentation – Decide roles for the presentation and have everyone complete a section of the proposal.
7. Present High-Level Design to sponsor.

8. Decide on a Sprint planning method for next semester.
9. Prepare for a long meeting on 11/11 and decide on Sprint planning method.
10. Understand Ponga's use of AWS services and apply it to our own project.
11. Create contracts between the AWS services being used that serve as documentation on our project. Define what each block of the project requires and how the blocks communicate.
 - a. API
 - i. GET method – Document JSON map User. Display a sample request and response from the client.
 - ii. POST method – Document JSON map Record. Display a sample request from the client.
 - b. Lambda – Define input event payloads and functionality.
 - i. retrieve
 - ii. update
 - iii. eventBridgePush – explain use of EventBridge
 - iv. calculateAffinity
 - c. DynamoDB – Define schemas.
 - i. Raw
 - ii. Processed
12. Complete preliminary report and create presentation – Decide roles for the presentation and have everyone complete a section of the report.
13. Setup AWS workspace for next semester using Cloud9.
14. Run AWS cost calculator.
15. Update task list and schedule.
16. Sprint 1 - Create DynamoDB database schemas and test them.
 - a. Raw
 - b. Processed
17. Sprint 2 – Stub out and test Lambda Functions and API methods.
 - a. retrieve
 - b. update
 - c. eventBridgePush

- d. CalculateAffinity
 - e. GET method
 - f. POST method
18. Sprint 3 – Implement Lambda Functions and API methods
- a. retrieve
 - b. update
 - c. calculateAffinity
 - d. API
19. Sprint 4 – Prepare all blocks of Insight for delivery and testing.
- a. Update documentation with final design decisions and more specifics on code.
 - b. Create account for testing Insight.
 - c. Fill tables with data for testing use cases.
 - d. Create step by step guide to AWS once logged in with sample API calls.

Schedule

Tasks	Dates	Details	Contributor
Meet with sponsor	9/29	We will meet in JBHT 532 and use the whiteboard for a detailed description of the sponsor's desired design.	All
Research	9/30-10/6	For this week, the team will each research AWS concepts and how they connect to our project.	All
Understand AWS services connection	10/7	Zoom call to discuss the use of each AWS service after having researched them.	All
Understand the use cases given by sponsor	10/8-10/14	Discuss use cases as a team and formulate questions for the sponsor. Zoom call at the end of the week to address questions.	All
High Level Design	10/15-10/23	Meet in discord several days to complete proposal and presentation.	All
i. DynamoDB	10/15	Decide on the number of tables. Discuss schema ideas for our DynamoDB tables.	
ii. Kinesis and SQS	10/18	Understand how kinesis will work for our project. Decide on SQS being part of version 1.	
iii. API Gateway and Lambda	10/21	Decide on API type and number. Make design decisions for the GET and POST endpoints.	
Proposal and Presentation	10/15-10/23	Complete required sections of the proposal while defining High Level Design. Create and practice presentation at the end of the week.	All
Present High-Level Design to sponsor	10/28	Zoom call with sponsor. Present current design to sponsor and get feedback. Discuss sprint planning.	All
Sprint planning	10/29-11/4	Research Sprint planning methods and applications for organization. Decide on one for next semester. 20-minute zoom call on 11/4.	All

Review and prepare	11/5-11/10	Prepare for meeting on 11/11 and decide on Sprint planning method. Look over proposal comments and fix errors.	All
Understand Ponga's AWS system	11/11	3 hours zoom call diving into Ponga's use of AWS and how to apply it to our project.	All
Documentation	11/14-11/26	Document all aspects of the Project and form Sprints around the documentation.	All
i. API Gateway	11/14-11/15	Document the requests and response of each endpoint. Formatting the payloads that the client sends and receives.	Matthew
ii. getUserData and updateUser lambda	11/18-11/19	Document the lambda functions to specify input events and formatting of output event.	Ryan
iii. eventBridgePush and calculateAffinity lambda	11/25-11/26	Document conversion of data stream to event, and input/output event of calculation lambda.	Julio Logan
iv. DynamoDB tables	11/17	Document database table schemas and connection to design.	
Report and Presentation	11/26-11/28	Complete required sections of the report while defining detailed design and next semester sprint plans. Create and practice presentation at the end of the week.	All
Setup AWS workspace	11/29-12/8	Finalize AWS accounts and setup Cloud9	Matthew
Run AWS cost calculator	1/18	Estimate cost of creating and testing the Insight Project	Matthew
Update task list and schedule	1/19	Change Sprint structure based on sponsor input and add a few tasks before starting sprint 1	Ryan
Sprint 1 – DynamoDB Implementation	1/20-1/22	Create DynamoDB database schemas	Matthew
i. Raw	1/22	Test DynamoDB streams with CloudWatch and eventBridgePush	Julio

			Dylan Logan
ii. Processed		Test once calculateAffinity has been stubbed out	
Sprint 2 – Stub Lambda and API	1/23-2/5	Stub out and test Lambda Functions and API methods	All
i. Retrieve	1/23	Stub get user data lambda (Can return records from the processed table to client through an API call)	Matthew
ii. Update	1/24	Stub update user lambda (Can create new or update existing records in the raw table through an API call from the client)	Ryan
iii. Event Bridge Push	1/27-2/2	Stub EventBridge push lambda (Ended up scrapping EventBridge push lambda function and using EventBridge Pipes instead. These push changes in the raw table to calculate affinity lambda.)	Julio Logan
iv. Calculate Affinity	2/3-2/5	Stub calculateAffinity lambda (Takes in event from the EventBridge Pipe, then puts an item into the processed table. Calculation design will be in the implementation phase. We need to flush out a way of reading events in the lambda as well.)	Dylan Logan
v. GET	1/23	Stub GET method in API Gateway (created automatically when generating Get User Data lambda)	Matthew
vi. POST	1/23	Stub POST method in API Gateway (created automatically when generating Update User Lambda)	Matthew
Sprint 3 – Implement Lambda and API	2/6-3/19	Implement Lambda Functions and API methods	All
i. Retrieve	2/20-3/03	Implement getUserData (Add exception error codes and test pagination id when requesting records)	Julio Matthew
ii. Update	2/20-2/24	Implement updateUser (implement the adding of data to existing records rather than	Julio

		replacing the existing records. Also add exception error codes.)	Logan
iii. Calculate Affinity	2/13-2/17	Implement calculateAffinity (code for calculations and the scaling of value propositions for use by any company, not just Ponga)	Matthew Ryan Dylan
iv. API	2/6-2/7	Clean up methods in API Gateway (modifying endpoint methods to look more professional and presentable)	Matthew
Sprint 4 – Prepare deliverables	3/20-4/23	Create an AWS testing account, tables, and guide to allow testing on individual functions and flows.	All
i. Update documentation	3/20-4/2	Update Final Report and Insight documentation	Dylan Logan
ii. Setup testing account	4/3-4/9	Set up a testing account with all functions deployed	Matthew
iii. Pre-populate tables	4/3-4/9	Fill tables with sufficient data to test use cases.	Julio Ryan
iv. Create guide to test	4/10-4/23	Steps guiding tester on the functionality of Insight on AWS	Matthew Ryan Julio