

Project Thor

Team Members:

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Faculty Advisor:

Name	Email
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Client:

Name	Email
Amitabh Nag - Aerospace, Physics and Space Sciences	anag@fit.edu

Current Progress of Milestone 4

Task	Adonay	Jared	Josh	Luke
Update Demos	20%			80%
Update documentation			100%	
Create and add detailed explanation page to the problem section of the web app			95%	
Create draft of solution explanation for the solution section of the web app			10%	
Find and implement better ways of combining the data fields		100%		
Begin outlining a more detailed test plan / system for testing the functionality of the web application so that we can test ourselves and allow the class to find and report bugs.	100%			
Store Keys in database when generated	50%	50%		

Retrieve key from database, log its use, and encrypt user uploaded file	100%			
Provide user with record of encryption method and key used	50%			50%
Handshake scripts with web application				100%

5. Discussion - Accomplishments

1. Update Demos:
 - a. The demos have been updated to reflect our most recent results as of the writing of this document. Most have not changed in appearance as the changes made have been on the backend. With that said, we have added a file upload object to our web application so that users may now upload a file to be encrypted.
2. Update Documentation:
 - a. Updated the Design Doc to include a Data Flow section to specify how our data should flow through each script along with what each script is responsible for doing to the data.
 - b. Created a Web Application Test Plan document. (more on this in tas
3. Problem Explanation:
 - a. We have written a problem statement explanation that explains the problem our project is trying to solve in a fair bit of detail while assuming the reader doesn't have a technical background in computer science.
4. Draft Solution Explanation:
 - a. We have created an outline of a solution explanation document similar to the problem explanation doc. Here, the goal is to explain how our project went about solving the problem. This doc is still in the draft phase and needs to be completed by the next milestone.
5. Better Implement Data Fields:
 - a. We have devised an algorithm for scrambling our existing data in order to generate more usable data. This has allowed us to have enough data to feed to the Dieharder test suite and generate usable results. Additionally, we have also discovered other algorithms that may help us to refine our data and eliminate potential patterns.

6. Outline Web Application Test Plan:
 - a. We've created a Web Application Testing Plan document that covers our plan for testing the web application. This includes a competition for the class to submit bug reports, the rules for that competition, instructions on how to participate, and what we intend to do with the results.
7. Key Generation:
 - a. Create batched keys and insert them into the database for later retrieval.
8. File Encryption:
 - a. Take a user's file and apply AES encryption. Delete key from database, and store in another table for later analysis. Give the user the encrypted file, and another file with the type of encryption used and the key used.
9. Handshake scripts with web application
 - a. The handshake between the scripts and the web application for key generation and file upload has been established and connected. Smoothing of the process and formatting is required from this point forward.

6. Discussion - Contributions

Luke Bonenberger:

Created system to upload files on the website from the user side. Files are uploaded to the server and then python scripts are called to interact with the files, and then the results are outputted to screen. Key generation was reworked to utilize the new combinations implementation. Updated web application to incorporate the new designs for the new function implementations.

Jared Blanco:

Developed the KeyGenerator.py program that should be ran on the event we get new data. This key generator program is what adds to the database the key value that is based off the natural phenomenon data. This is now being accomplished by taking in a large set of lightning strikes and combining various fields from all of them, including longitude, latitude, ect in an equally weighted format. This program is the backbone to the backend where Adonay is doing all handshakes from the key generator.

Adonay Pichardo:

Updated key generation script so that they are stored in the database along with the metadata used to generate each key. For example, if a user requests a key, they will receive that key *and* some information about the lightning strike used to create that key.

Created functionality to take a locally saved file, request a key from the database, log the key used, delete the key so that it is not used again, encrypt a file, and provide a downloadable copy to the user.

Josh Temel:

Updated the Design Document with the Data Flow Diagram. Created a Problem Explanation page and uploaded to web application. Drafted a solution explanation. Updated About page of web application to talk about our solution.

7. Milestone 5 Plan

Task	Adonay	Jared	Josh	Luke
Update Demos	25%	25%	25%	25%
Update documentation	25%	25%	25%	25%
Finish writing solution explanation and add to web app	0%	0%	50%	50%
Create draft of data explanation	100%	0%	0%	0%
Finish getting metrics on the data in its various forms	0%	100%	0%	0%
Begin performing requirement and verification testing as specified in the test doc	50%	50%	0%	0%
Analyze the results of the web app testing as bug reports arrive.	50%			50%
Finalize web app and script handshake				100%

8. Discussion & Lessons Learned

Update Demos: n/a

Update Documentation: n/a

Write Problem Explanation:

In writing the Problem explanation our team was able to learn how to articulate more clearly what the problems are. This was an issue for some of the team members because not everyone was able to fully articulate their understanding of the problem.

Draft Data Explanation:

In creating the draft for the solution explanation we found out about issues are team has been having with vocabulary. Often when writing code and naming variables. So solve this problem what have decided to specify these terms in the explanation.

Generate More Permutations: n/a

Web App Test Plan:

Learned Google Forms and how to create a form.

Store Keys in Database: n/a

Retrieve Keys From...: n/a

Provide User with Record of Encryption:

Learned Python AES library and how to format a file to be used with AES encryption.

Web application and scripts handshake:

The web application and scripts proved to be easy in theory, but difficult within the implementation. The areas with most difficulty were oversaught. The oversaught areas include the working directories of the scripts and the application. The web application does not have full access to the server, whereas the python scripts do. Moving the scripts to the web application came with difficulty as directory references needed to be changed, and folder permissions needed to be modified in order for the scripts in the web application to be correctly executed. More clear communication could have made this problem faster and easier to solve.

9. Date(s) of Meeting(s) with Client:

Date	Topic
N/a	<ul style="list-style-type: none">n/a

10. Client feedback of current milestone

1. No meeting with client.

11. Dates of Meeting with Faculty Advisor

Date	Topic
February 14th, 2022	<ul style="list-style-type: none">Feedback for Milestone 4

12. Faculty Advisor Feedback for Milestone 2

1. Dr. Sid mentioned that he liked to plan a meeting with the client to take place in the near future to update the client on our progress.

13. Approval from Faculty Advisor

"I have discussed with the team and approve this project plan. I will evaluate the progress and assign a grade for each of the three milestones."

Signature: _____ Date: _____

1. Evaluation by Faculty Advisor

- Faculty Advisor: detach and return this page to Dr. Chan (HC 214) or email the scores to pkc@cs.fit.edu
- Score (0-10) for each member: circle a score (or circle two adjacent scores for .25 or write down a real number between 0 and 10)

Adonay	0	1	2	3	4	5	5.5	6	6.5	7	7.5	8	8.5	9	9.5	10
Jared	0	1	2	3	4	5	5.5	6	6.5	7	7.5	8	8.5	9	9.5	10
Josh	0	1	2	3	4	5	5.5	6	6.5	7	7.5	8	8.5	9	9.5	10
Luke	0	1	2	3	4	5	5.5	6	6.5	7	7.5	8	8.5	9	9.5	10

Faculty Advisor Signature: _____ Date: _____