CENTRALIZED HUB FOR SECURING A NETWORK OF IoT DEVICES

2020-086

Project Status Document I

IT 17078306 – Jayawardhane H.N

Bachelor of Science (Hons) Degree in Information Technology
Specialized in Cyber Security

Department of Information Systems Engineering

Sri Lanka Institute of Information Technology

Sri Lanka

July 2020

CENTRALIZED HUB FOR SECURING A NETWORK OF IoT DEVICES

2020-086

Project Status Document I

Bachelor of Science (Hons) Degree in Information Technology Specialized in Cyber Security

Department of Information Systems Engineering

Sri Lanka Institute of Information Technology

Sri Lanka

July 2020

Declaration

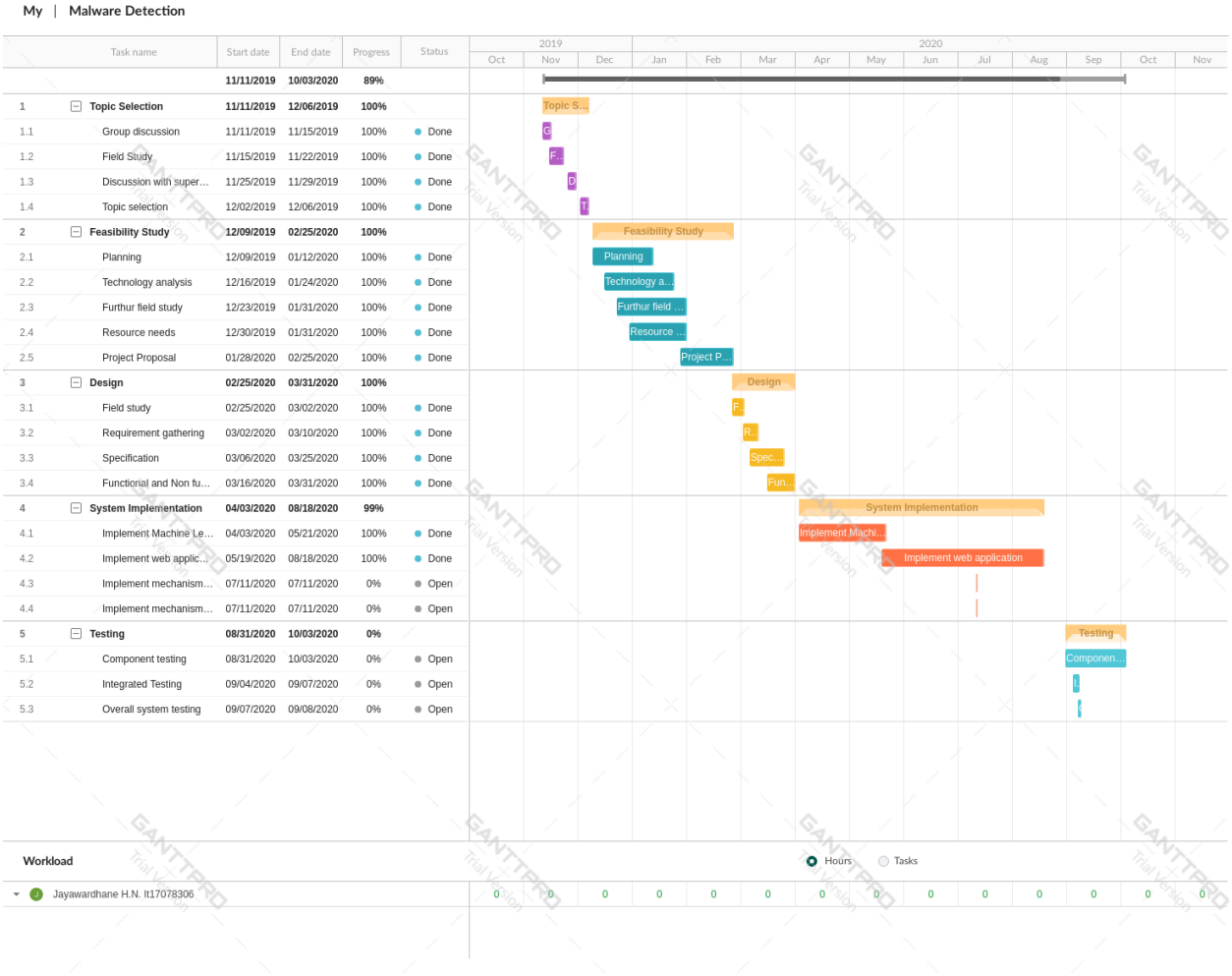
I declare that this is my own work and this proposal does not incorporate without acknowledgement any material previously submitted for a degree or diploma in any other university or Institute of higher learning and to the best of knowledge and belief it does not contain any material previously published or written by another person except where the acknowledgement is made in the text.

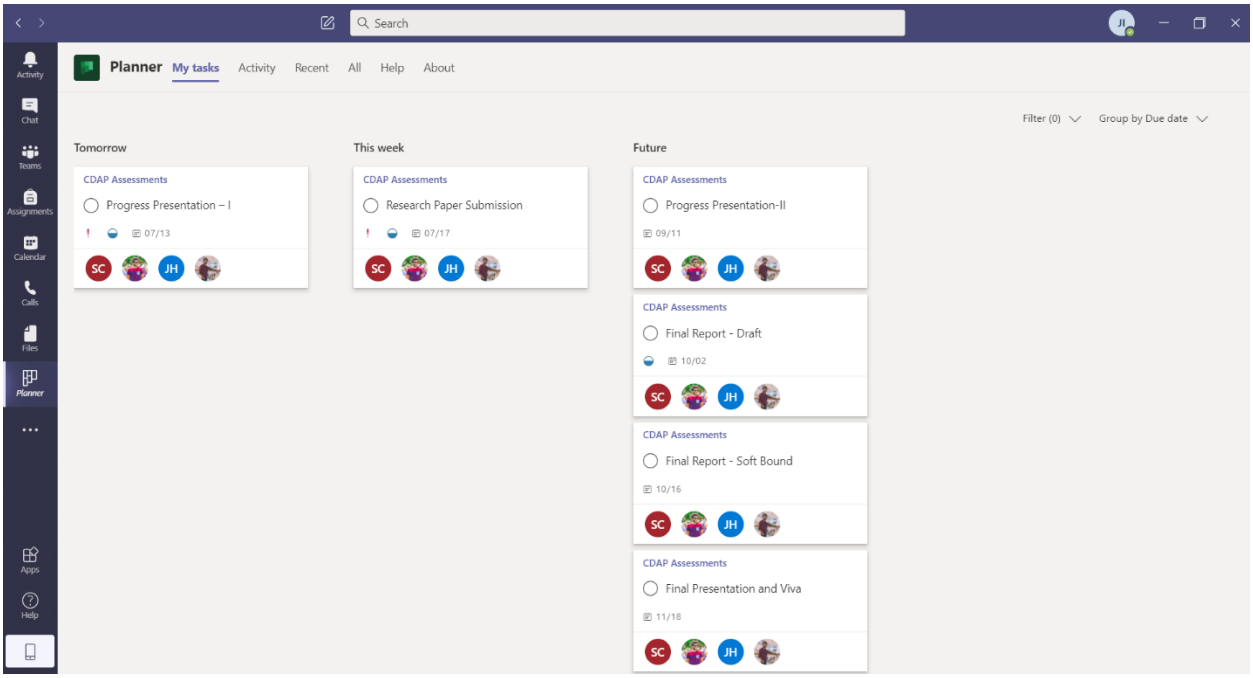
Name: Jayawardhane H.N.

Student ID: IT 17078306

Table of Contents

1. Updated Gantt Chart





2. Work breakdown structure to achieve deadlines

There has been a slight change of plans with the topic change request I had submitted to the panel.

Hence the previously estimated time in the initial proposal was for the originally planned topic “Update Automation” but the new plan is for “Malware Detection/Mitigation”

Task	Estimated		Actual	
	Start date	End date	Start date	End date
1. Implement Machine Learning (ML) model to detect a malicious .exe	2020/05/29	2020/06/10	2020/06/01	2020/06/14
2. Train ML model	2020/06/11	2020/06/12	2020/06/14	2020/06/15
3. Test ML model	2020/06/12	2020/06/13	2020/06/15	2020/06/16
4. Implement and host a website to have both	2020/06/14	2020/06/16	2020/06/17	2020/06/18

“legitimate” and “malicious” .exe files				
5. Implement “ARCSECURE” web application to make the component available to the users.	2020/06/16	2020/07/01	2020/06/18	2020/07/10

3. Finalized work breakdown structure and resource allocation

Task	Estimated		Actual	
	Start date	End date	Start date	End date
6. Create a mechanism to separately hold “legitimate” and “malicious” .exe files in a cloud environment	2020/07/02	2020/07/20	-	-
7. Delete files detected as malicious from system	2020/07/21	2020/08/15	-	-

4. Project Management tool

4.1.Milestones

- Implement Machine Learning (ML) model to detect a malicious .exe
- Train ML model
- Test ML model
- Implement and host a website to have both “legitimate” and “malicious” .exe files
- Implement “ARCSECURE” web application to make the component available to the users.

4.2.Test results

```
Now testing algorithms
DecisionTree : 99.119884 %
RandomForest : 99.391525 %
GradientBoosting : 98.826512 %
AdaBoost : 98.551250 %
GNB : 70.105034 %

Winner algorithm is RandomForest with a 99.391525 % success
Saving algorithm and feature list in classifier directory...
Saved
```

4.3.User-task allocation details

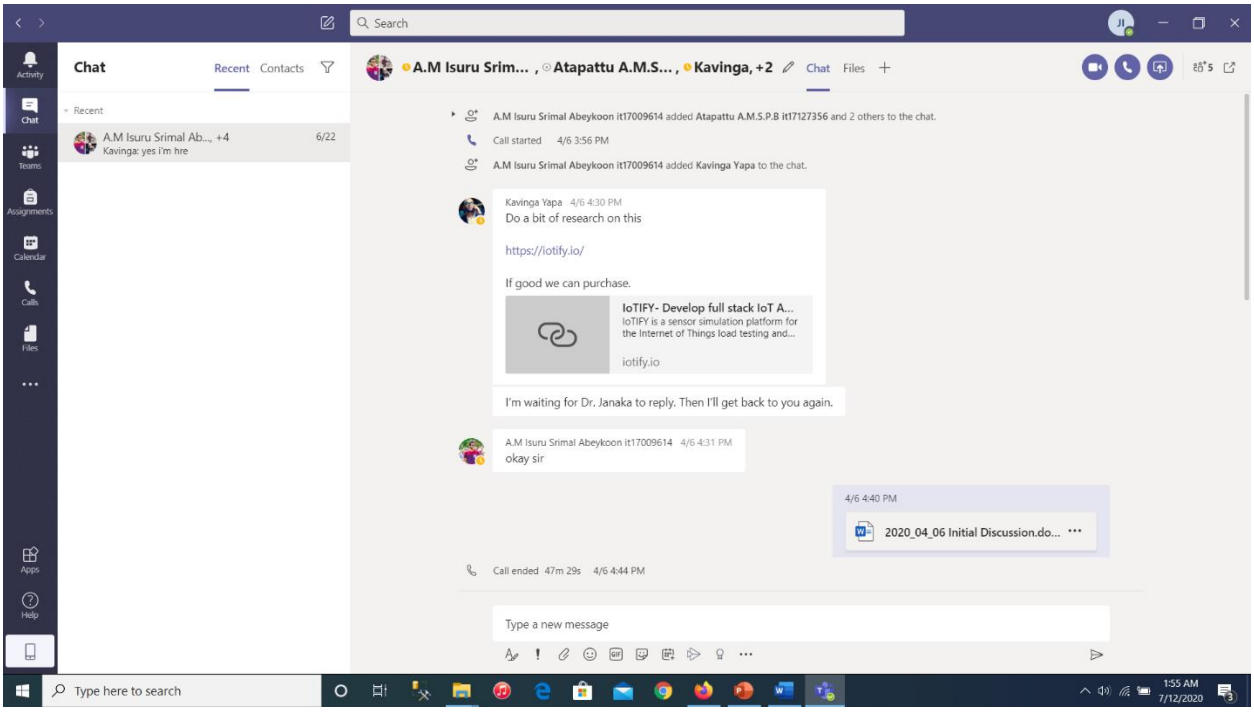
Task	Estimated	
	Start date	End date
1. Implement Machine Learning (ML) model to detect a malicious .exe	2020/05/29	2020/06/10
2. Train ML model	2020/06/11	2020/06/12
3. Test ML model	2020/06/12	2020/06/13

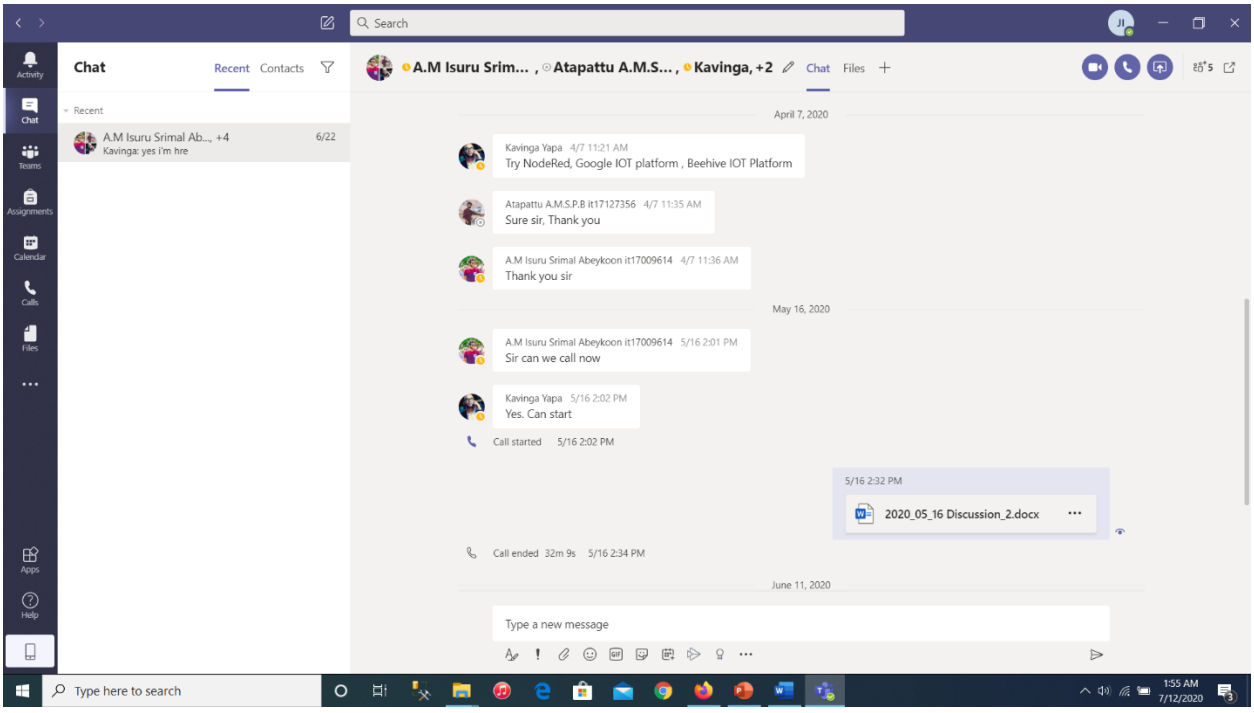
4. Implement and host a website to have both “legitimate” and “malicious” .exe files	2020/06/14	2020/06/16
5. Implement “ARCSECURE” web application to make the component available to the users.	2020/06/16	2020/07/01
6. Create a mechanism to separately hold “legitimate” and “malicious” .exe files in a cloud environment	2020/07/02	2020/07/20
7. Delete files detected as malicious from system	2020/07/21	2020/08/15

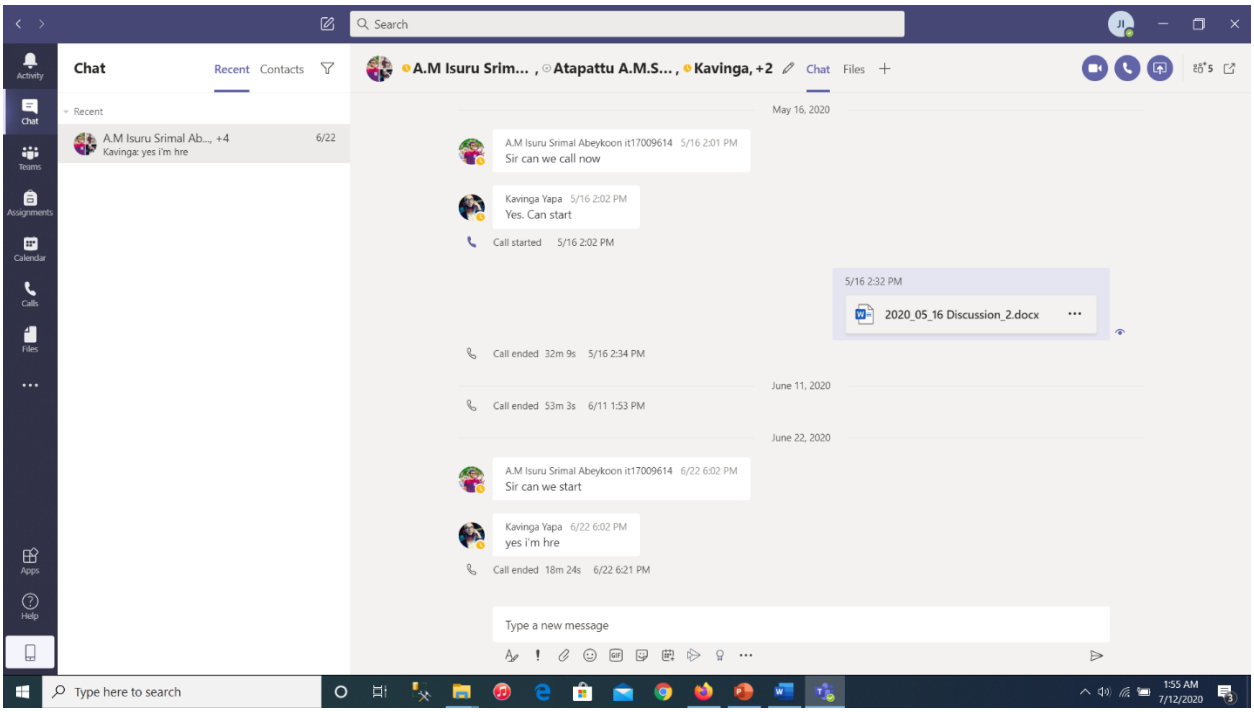
4.4.Documentation work

1. Project charter - Completed
2. Project proposal - Completed
3. Project status document - Completed
4. Progress Presentation I - Completed
5. Research Paper - Pending

Screenshots of Chats and Calls



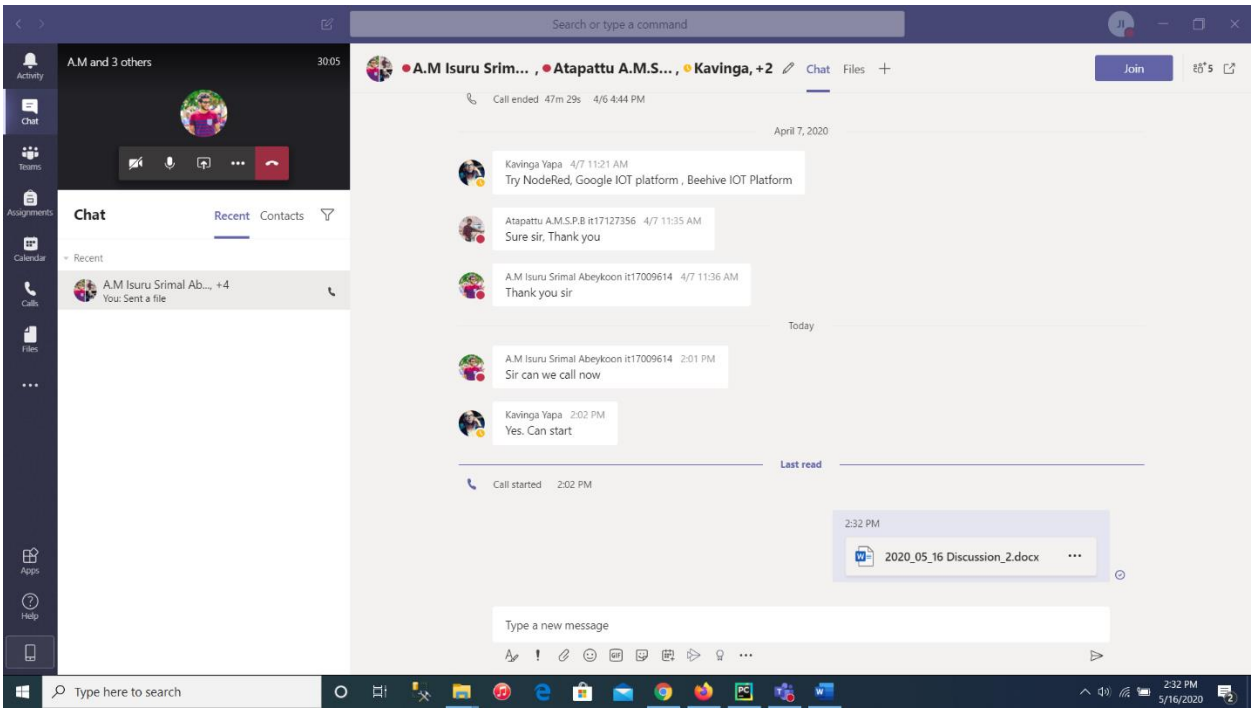



Search
Chat
Recent
Contacts
A.M Isuru Srim... , Atapattu A.M.S... , Kavinga, +2
Chat
Files
Recent
A.M Isuru Srimal Ab..., +4
Kavinga: yes i'm hre
6/22
May 16, 2020
A.M Isuru Srimal Abeykoon it17009614 5/16 2:01 PM
Sir can we call now
Kavinga Yapa 5/16 2:02 PM
Yes. Can start
Call started 5/16 2:02 PM
5/16 2:32 PM
2020_05_16 Discussion_2.docx
Call ended 32m 9s 5/16 2:34 PM
June 11, 2020
Call ended 53m 3s 6/11 1:53 PM
June 22, 2020
A.M Isuru Srimal Abeykoon it17009614 6/22 6:02 PM
Sir can we start
Kavinga Yapa 6/22 6:02 PM
yes i'm hre
Call ended 18m 24s 6/22 6:21 PM
Type a new message
Type here to search
1:55 AM
7/12/2020

Meeting 1:


Search or type a command
SI
Samarasekara C.N. it17126816
A.M Isuru Srimal Abeykoon it17009614
Atapattu A.M.S.P.B it17127356
Kavinga Yapa
11:52
Type here to search
2:14 PM
5/16/2020

Meeting 2:



Meeting 3: