DUY TÂN UNIVERSITY
International School

Capstone Project 2
CMU-SE 451

Product Backlog – User Story – Sprint Backlog

Craft Village Pollution Monitor System

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
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Name   Signature   Date

PROJECT INFORMATION

Project acronym	CVPMS		
Project Title	Craft Village Pollution Monitor System		
Start Date	01/03/2023	**End Date**	15/05/2023
Lead Institution	International School, Duy Tan University		
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Partner Organization			
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Scrum Member	Trung, Nguyen Thanh	Date	13/05/2023
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1. Product Backlog

Table 1. *Product Backlog*

Id	Heading	As a …	I want to ...	so that ...	Acceptance Criteria	Remarks	Priority	Sprint No	Estimate (Hours)	Status	Remarks
PB01	Report Feature	Local Authority Household	Fill report form	I can inform problem to development team	- Allow user to report error to the development team		3	2	30	Done	
PB02	Household Survey Feature	Household	Fill my production situation form	Local authority can manage my production situation	- Allow user to provide craft village production information		3	1, 2, 5	100	Done	
PB03	Dashboard Feature	Local Authority	View villages production situation and personal user surveys	I can manage pollution situation	- Allow user to view craft village status and submitted survey		2	2	20	Done	
PB04	Pollution Prediction AI	Household Authority	Have an AI with the ability to predict the pollution types of a craft village from production information automatically and acurately	when combie with submitted pollution information we will know with craft village that have the conflict information about the production information	- Allow user to submit production information and the AI will gave the prediction about the types of pollution that the craft village will be facing		3	3, 4	400	Done	
PB05	Edit Village Feature	Local Authority	Change village information	I can correct and update village			3	3	30	Done	
PB06	Fake Training Data	Admin	Generate new model using household data	System can detect pollution more correctly			3	4	200	Done	

Id	Heading	As a …	I want to ...	so that ...	Acceptance Criteria	Remarks	Priority	Sprint No	Estimate (Hours)	Status	Remarks
PB07	Auto Update Village State	Admin	System updates village state	I can check conflicting data			3	5	30	Done	
PB08	Download Data Set	Admin	Download village data set	I can build enhanced model in future			3	5	30	Done	
PB09	Notification Feature	Local Authority	Know if data is conflicting	I can check what problem occurs			3	5	30	Done	
PB10	Register	Household	Create an account	I can login with my own account to access the mobile application/web application	- Username must not contain spaces and not be accented - Password must be >= 6 characters		3	1	30	Done	
PB11	Authenticate	Household Authority Admin	Login/Logout to web application	I can start to provide the information about the craft village/view craft village's status	- Login with registed account		3	1	100	Done	
PB12	Password Recovery	Household	Recover password when forgot	I can change my password into the new one and get my account back	- Use the code that sent to the account's email which is registered in the profile to change the new password		2	1	20	Done	
PB13	Create Local Authority Account	Admin	Create an local authority account	I can provide the account to the local authority user	- Allow the admin to create the a local authority account		2	2	30	Done	

Id	Heading	As a …	I want to ...	so that ...	Acceptance Criteria	Remarks	Priority	Sprint No	Estimate (Hours)	Status	Remarks
				to manage their local craft village	- Login with registed account						
PB14	Improve Pollution Detection AI	Personal User	Have an AI with the ability to detect the pollution types from an image automatically and acurately	The application can detect pollutions types automatically with a quick and accureate respone	- Allow user to submit pollution photo and the AI will detect pollution types then sent back to the application		3	1, 2	200	Done	
PB15	Pollution Fillter	Local Authority	Have an Pollution Fillter to sort out the pollution that I need	I can see specific pollution that I need to see	- Allow user to fillter out the types of pollution that they want to see		2	5	30	Done	
PB16	Publish Application	Personal User	Have the application on Google Store	People can download and use it	- Application publish to store		3	1, 2, 5	30	Done	
PB17	Change Language	Personal User	Change the language of the mobile	The application language change from Vietnamese to English and vice versa	- Allow users to change the language of the application from Vietnamese to English and vice versa		1	1, 2	20	Done	
PB18	Deploy Web Application to Online Server	Household Authority Admin	Use the web application on a real server	I can access the web application and it's functions anywhere	- Allow users to access the web application throught ip or domain name (online server)		3	1, 3, 4, 5	30	Done	
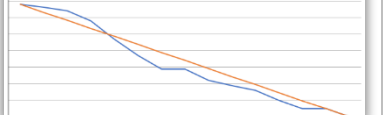
Id	Heading	As a …	I want to ...	so that ...	Acceptance Criteria	Remarks	Priority	Sprint No	Estimate (Hours)	Status	Remarks
PB19	Change Password	Household Authority Admin	Change my old password into a new password	Next time I can login using my new password and protect my account in case of password leak	- Allow user to click "Thay đổi mật khẩu" and change their current password to a new password		3	1	30	Done	
PB20	GPS Tags to Image	Personal User	Attach GPS tags to image	The image can contant the GPS location of pollutions	- Attach GPS tags to image		3	2, 3, 4	30	Done	
PB21	Authorize	Personal User Household Authority Admin	Login/Logout according to the role that has been registed	I can perform the task correctly according to the role	- Login with registed account and perform task according to the registed role		3	2	100	Done	
PB22	Accept/Decline/Add New Village	Local Authority	Accept/Decline a new village that has been submit by a personal user	I can protect the integrity of the craft village data from fault information	- Allow user to accepct or decline the new village that submitted by a personal user and that village belong to their management		3	2	20	Done	

2. Sprint Backlog

2.1. Sprint 1

Table 2. *Sprint 1*

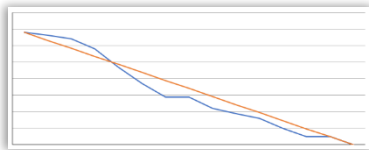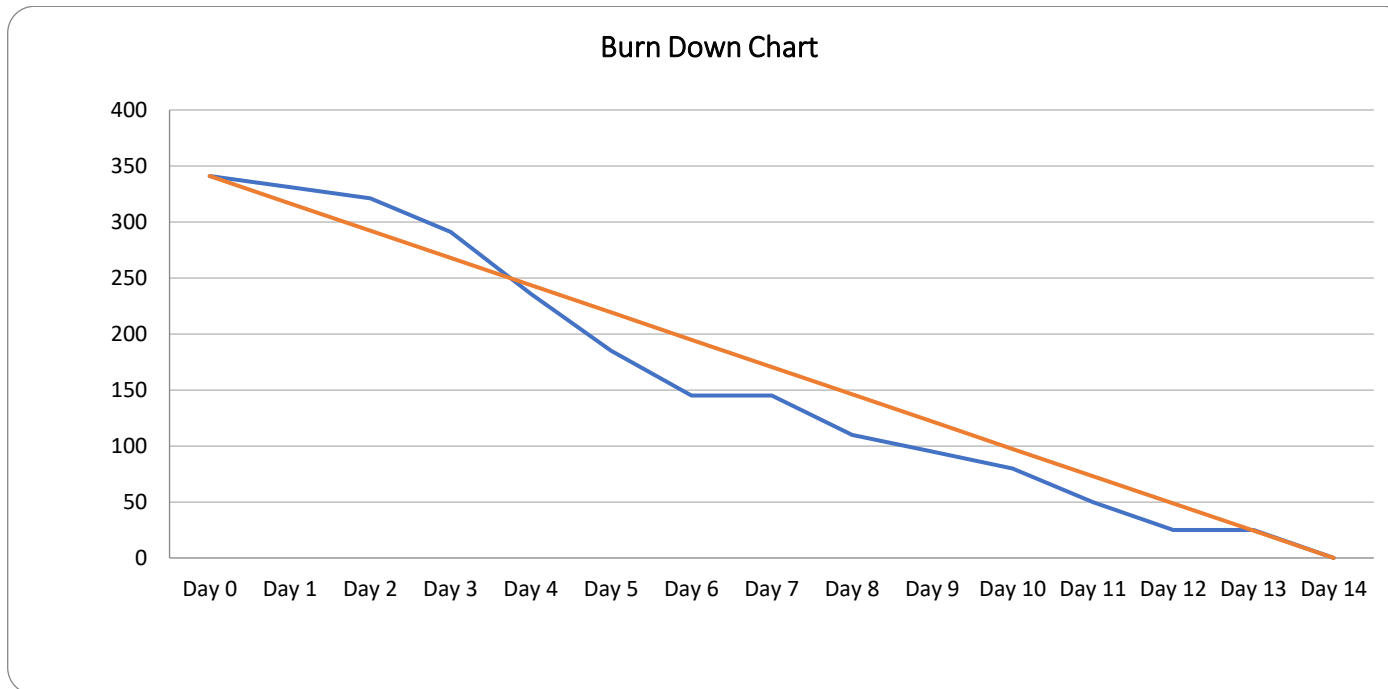| Sprint Id	Backlog Id	Description	Owner	Status	Estimate (Hours)	Completed	Pending	Total effort	Effort vs. Estimate	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Day 10	Day 11	Day 12	Day 13	Day 14
1.1	PB10	[FE] Design Web layout	Phuc	Done	25	25	0	20	-5				25										
1.2	PB10	[FE] Design UX/UI Login Page For Web Application	Trung	Done	15	15	0	15	0			15											
1.3	PB10	[FE] Design UX/UI Home Page For Web Application	Trung	Done	15	15	0	15	0					15									
1.4	PB10	[FE] Code UX/UI Login Page For Web Application	Nhan	Done	10	10	0	10	0	10													
1.5	PB10	[FE] Code UX/UI Home Page For Web Application	Nhan	Done	10	10	0	7	-3		10												
1.6	PB11	[FE] Code Login Function For Web Application	Phuc	Done	8	8	0	5	-3					8									
1.7	PB11	[FE] Code Logout Function For Web Application	Phuc	Done	3	3	0	2	-1					3									
1.8	PB10	[FE] Design UX/UI Register Page For Web Application	Trung	Done	15	15	0	13	-2						15								
1.9	PB10	[FE] Code UX/UI Register Page For Web Application	Nhan	Done	15	15	0	10	-5			15											
1.10	PB10	[FE] Code Register Function For Web Application	Phuc	Done	25	25	0	15	-10					25									
1.11	PB14	[AI] Research Method To Improve AI	Huy	Done	30	30	0	30	0				30										
1.12	PB14	[AI] Crawl Data For Improve AI	Huy	Done	30	30	0	30	0											30			
1.13	PB17	[FE] Code Change Language For Mobile Application	Ca	Done	25	25	0	30	5						25								
1.14	PB16	[FE] Research Method To Publish Application	Ca	Done	25	25	0	15	-10								25						
1.15	PB16	[FE] Config Application For Publish Application	Ca	Done	15	15	0	10	-5										15				
1.16	PB16	[FE] Publish Application To Google Play	Ca	Done	10	10	0	8	-2												10		
1.17	PB02	[BE + DB] Create Question, Question Answer, Household Survey Entity	Phuc	Done	10	10	0	8	-2								10						
1.18	PB19	[FE] Code & Design UX/UI Change Password For Web Application	Trung	Done	15	15	0	12	-3									15					
1.19	PB20	[FE] Code & Design UX/UI Forget Password For Web Application	Phuc	Done	15	15	0	9	-6												15		
1.20	PB18	[BD] Change Oracle Database to MySQL Database	Nhan	Done	25	25	0	27	2														25
		Total			341	341	0	291	-50	10	10	30	55	51	40	0	35	15	15	30	25	0	25
		Burn down								331	321	291	236	185	145	145	110	95	80	50	25	25	0
		Ideal Burn down								317	292	268	244	219	195	171	146	122	97	73	49	24	0

Figure 1. *Sprint 1 Burn Down Chart*

2.2. Sprint 2

Table 3. *Sprint 2*

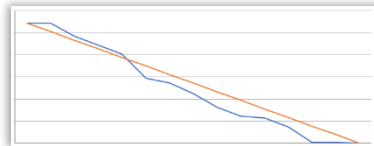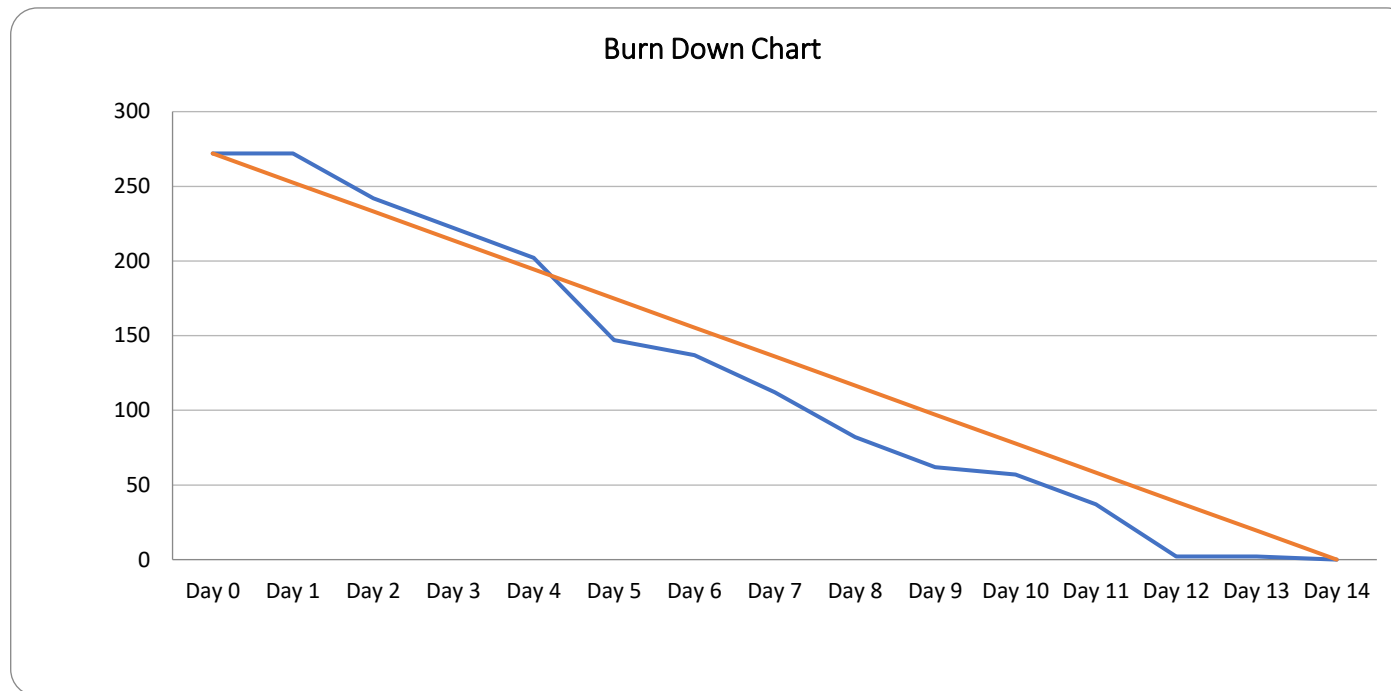| Sprint Id	Backlog Id	Description	Owner	Status	Estimate (Hours)	Completed	Pending	Total effort	Effort vs. Estimate	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Day 10	Day 11	Day 12	Day 13	Day 14
2.1	PB03	[FE] Code & Design UX/UI Add New Local Authority For Web Application(Admin page)	Trung	Done	15	15	0	10	-5		15												
2.2	PB21	[FE] Design Web layout (Household, Local Authority, Admin)	Phuc	Done	20	20	0	18	-2			20											
2.3	PB01	[FE] Design UX/UI Report Form For Web Application	Phuc	Done	10	10	0	8	-2				10										
2.4	PB01	[FE] Code Report API	Phuc	Done	15	15	0	12	-3					15									
2.5	PB01	[FE] Code Report Logic For Web Application	Nhan	Done	15	15	0	17	2	15													
2.6	PB02	[BE] Code Question Api	Phuc	Done	20	20	0	22	2							20							
2.7	PB02	[BE] Code Question Answer Api	Phuc	Done	10	10	0	12	2									10					
2.8	PB02	[FE] Design Household Survey	Nhan	Done	5	5	0	4	-1					5									
2.9	PB02	[FE] Code Declare Household Survey	Nhan	Done	10	10	0	15	5						10								
2.10	PB22	[FE] Design UX/UI Accept/Decline New Village Page For Web Application	Trung	Done	5	5	0	6	1		10												
2.11	PB22	[FE] Code UX/UI Accept/Decline New Village Page For Web Application	Phuc	Done	10	10	0	8	-2										5				
2.12	PB03	[FE] Design UX/UI Dashboard Page For Web Application	Nhan	Done	5	5	0	6	1						5								
2.13	PB03	[FE] Code UX/UI Dashboard Page For Web Application	Nhan	Done	10	10	0	7	-3									10					
2.14	PB03	[FE] Design UX/UI Declare Page For Web Application (Household)	Trung	Done	5	5	0	6	1					5									
2.15	PB03	[FE] Code UX/UI Declare Page For Web Application (Household)	Phuc	Done	10	10	0	11	1												10		
2.16	PB14	[AI] Retrain AI Model	Huy	Done	30	30	0	35	5					30									
2.17	PB14	[AI] Research Deploy Model To Server	Huy	Done	20	20	0	17	-3											20			
2.18	PB14	[AI] Deploy Model To Server	Huy	Done	5	5	0	3	-2											5			
2.19	PB17	[FE] Update Change Language Function	Ca	Done	30	30	0	24	-6									30					
2.20	PB20	[FE] Update Craft Page	Ca	Done	20	20	0	15	-5											20			
2.21	PB16	[FE] Deploy New Version To Store	Ca	Done	2	2	0	3	1														2
		Total			272	272	0	259	-13	0	30	20	20	55	10	25	30	20	5	20	35	0	2
		Burn down								272	242	222	202	147	137	112	82	62	57	37	2	2	0
		Ideal Burn down								253	233	214	194	175	155	136	117	97	78	58	39	19	0

Figure 2. *Sprint 2 Burn Down Chart*

2.3. Sprint 3

Table 4. *Sprint 3*

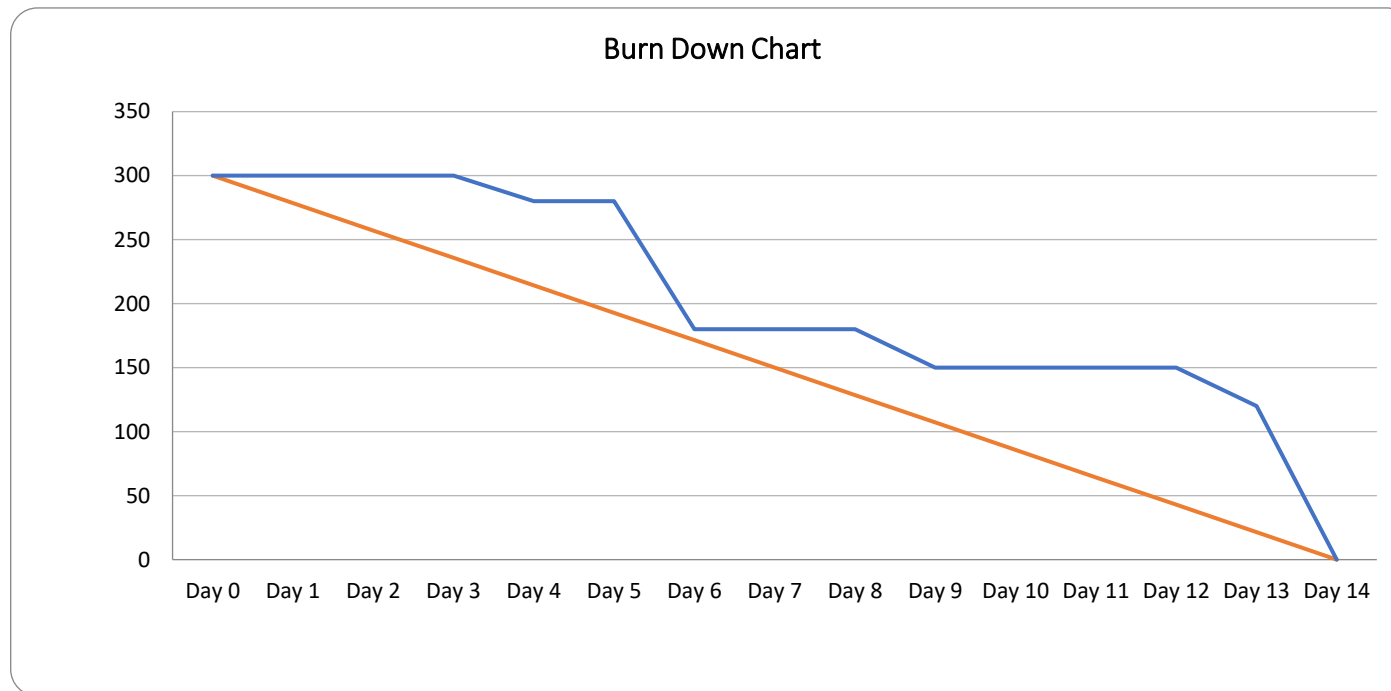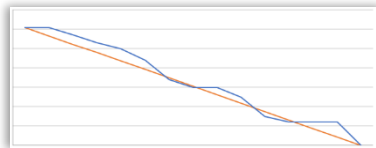| Sprint Id	Backlog Id	Description	Owner	Status	Estimate (Hours)	Completed	Pending	Total effort	Effort vs. Estimate	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Day 10	Day 11	Day 12	Day 13	Day 14
3.1	PB05	[FE] Design Edit Village Page	Phuc	Done	20	20	0	18	-2				20										
3.2	PB05	[FE] Implement Map	Nhan	Done	30	30	0	40	10									30					
3.3	PB05	[FE] Code Edit Village Feature	Phuc	Done	20	20	0	25	5						20								
3.4	PB05	[BE] Code Update Village API	Phuc	Done	20	20	0	15	-5						20								
3.5	PB04	[AI] Research Prediction AI	Huy	Done	30	30	0	35	5						30								
3.6	PB04	[AI] Research API For Prediction AI	Huy	Done	30	30	0	32	2														30
3.7	PB04	[AI] Create Data For Prediction AI	Trung	Done	60	60	0	70	10														60
3.8	PB20	[FE] Research Image Standard And Tags	Ca	Done	30	30	0	32	2						30								
3.9	PB20	[FE] Attach GPS Tags For Image	Ca	Done	30	30	0	25	-5													30	
3.10	PB18	[BE] Deploy Backend To Server	Nhan	Done	30	30	0	35	5														30
				Total	300	300	0	327	27	0	0	0	20	0	100	0	0	30	0	0	0	30	120
				Burn down						300	300	300	280	280	180	180	180	150	150	150	150	120	0
				Ideal Burn down						279	257	236	214	193	171	150	129	107	86	64	43	21	0

Figure 3. *Sprint 3 Burn Down Chart*

2.4. Sprint 4

Table 5. *Sprint 4*

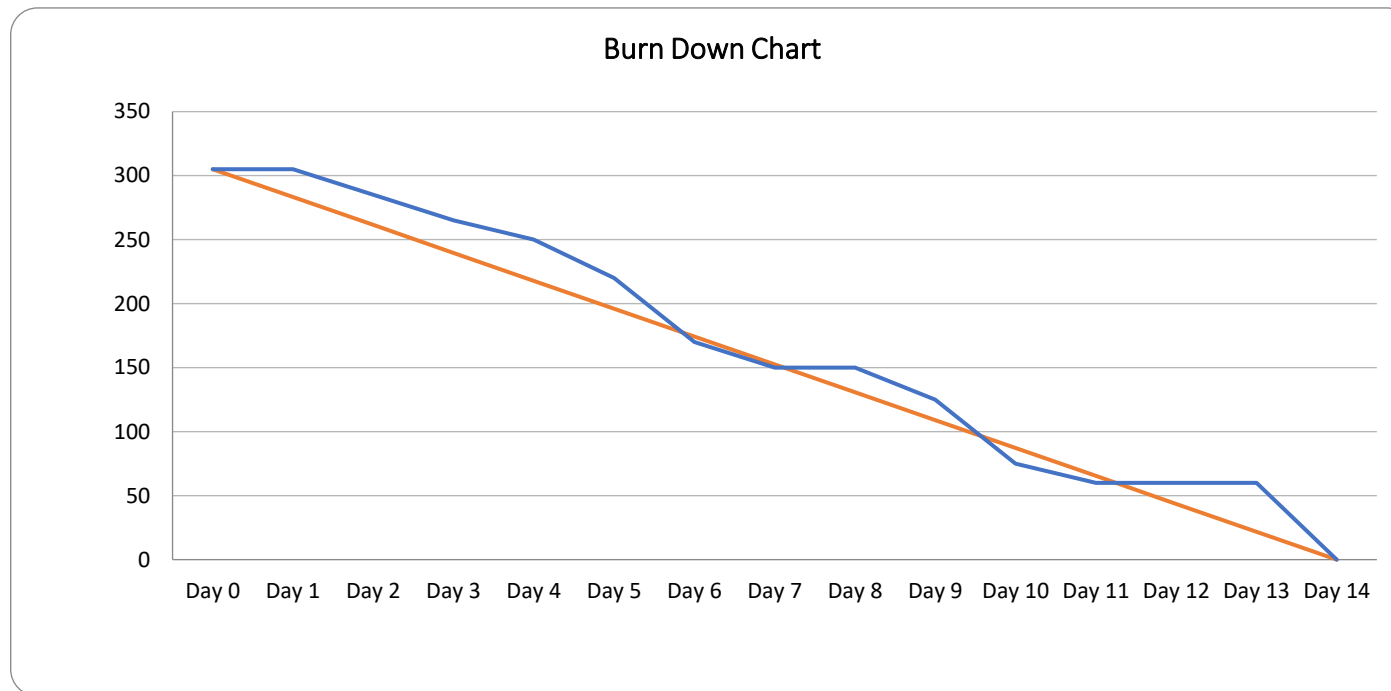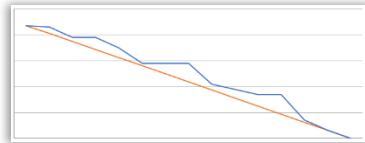| Sprint Id	Backlog Id	Description	Owner	Status	Estimate (Hours)	Completed	Pending	Total effort	Effort vs. Estimate	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Day 10	Day 11	Day 12	Day 13	Day 14
4.1	PB06	[BE + DB] Code DataSet Entity	Phuc	Done	20	20	0	15	-5			20											
4.2	PB04	[AI] Create Data For Prediction AI	Trung	Done	60	60	0	80	20														60
4.3	PB06	[BE] Code DataSet API	Phuc	Done	20	20	0	16	-4						20								
4.4	PB06	[DB] Generate Store Procedure Update DataSet	Phuc	Done	30	30	0	25	-5										30				
4.5	PB06	[AI] Process Data For AI Trainning	Nhan	Done	20	20	0	23	3		20												
4.6	PB14	[AI] Train Prediction AI Model	Huy	Done	30	30	0	30	0						30								
4.7	PB14	[AI] Write API For Prediction AI	Huy	Done	25	25	0	20	-5									25					
4.8	PB14	[AI] Deploy Model To Server	Huy	Done	5	5	0	3	-2										5				
4.9	PB05	[BE] Layout Survey Marker on Map	Nhan	Done	15	15	0	13	-2					15									
4.10	PB20	[FE] Attach GPS Tags For Image Using EXIF Standard	Ca	Done	30	30	0	32	2						30								
4.11	PB20	[FE] Update Craft Page	Ca	Done	15	15	0	12	-3										15				
4.12	PB05	[FE] View Sumitted Survey	Nhan	Done	20	20	0	15	-5									20					
4.13	PB18	[BE] Deploy New Backend Version To Server	Nhan	Done	15	15	0	12	-3											15			
				Total	305	305	0	296	-9	0	20	20	15	30	50	20	0	25	50	15	0	0	60
				Burn down						305	285	265	250	220	170	150	150	125	75	60	60	60	0
				Ideal Burn down						283	261	240	218	196	174	153	131	109	87	65	44	22	0

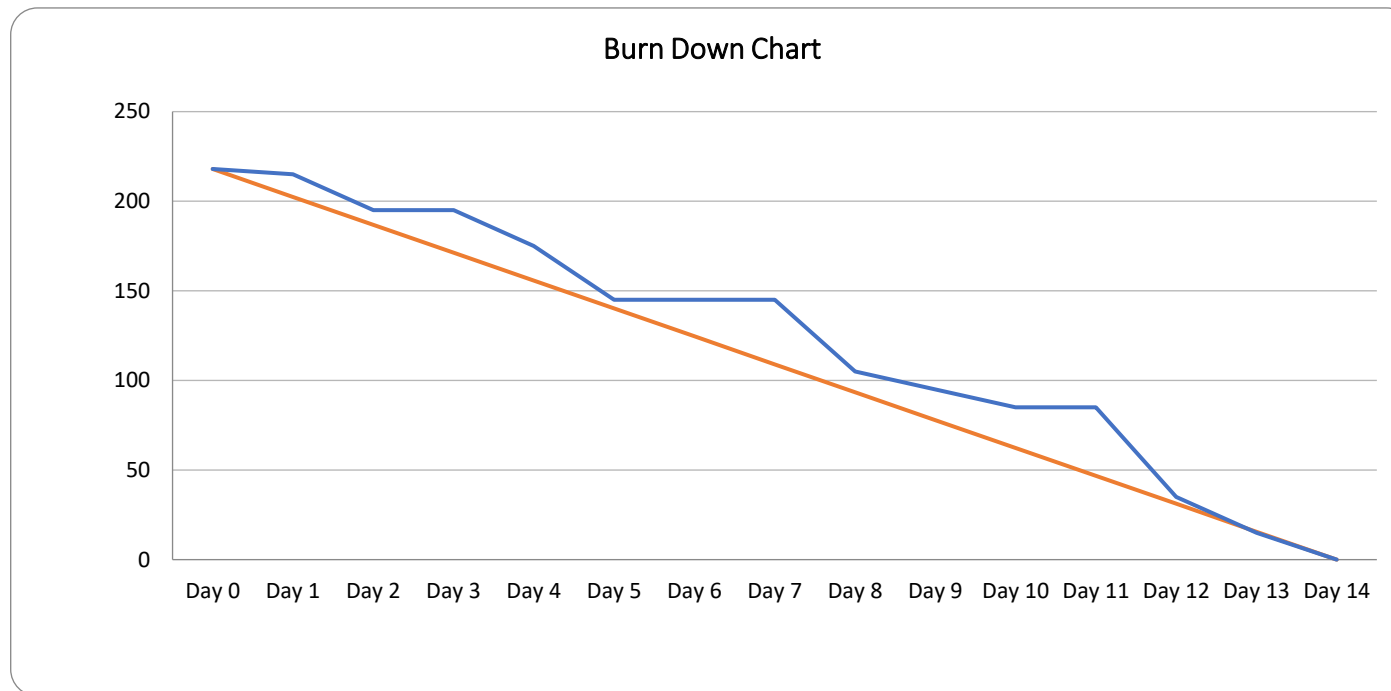**Figure 4.** *Sprint 4 Burn Down Chart*

2.5. Sprint 5

Table 6. *Sprint 5*

Sprint Id	Backlog Id	Description	Owner	Status	Estimate (Hours)	Completed	Pending	Total effort	Effort vs. Estimate	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Day 10	Day 11	Day 12	Day 13	Day 14
5.1	PB07	[AI] Generate Training Data From Json	Huy	Done	30	30	0	30	0					30									
5.2	PB07	[AI] Implement New Model	Huy	Done	30	30	0	30	0												30		
5.3	PB07	[FE] Code Update Required Question Feature	Nhan	Done	20	20	0	25	5				20										
5.4	PB08	[BE] Code Get Data Set API	Phuc	Done	20	20	0	15	-5		20												
5.5	PB08	[BE] Code Call Predict API With Data Set	Phuc	Done	20	20	0	12	-8								20						
5.6	PB02	[BE] Refactor Question and Question Answer and Household Survey	Phuc	Done	10	10	0	15	5									10					
5.7	PB08	[FE] Code Download Data Set Feature For Web Application	Nhan	Done	20	20	0	18	-2										20				
5.8	PB09	[BE] Code Notification API	Phuc	Done	10	10	0	12	2											10			
5.9	PB09	[FE] Code Notification Feature	Nhan	Done	20	20	0	25	5												20		
5.10	PB18	[AI] Deploy Model To Server	Huy	Done	5	5	0	6	1													5	
5.11	PB18	[BE] Deploy Backend To Server	Nhan	Done	15	15	0	10	-5														15
5.12	PB16	[FE] Code Fillter For Pollution Types	Phuc	Done	15	15	0	12	-3													15	
5.13	PB15	[FE] Deploy New Version To Store	Ca	Done	3	3	0	2	-1	3													
				Total	218	218	0	212	-6	3	20	0	20	30	0	0	40	10	10	0	50	20	15
				Burn down						215	195	195	175	145	145	145	105	95	85	85	35	15	0
				Ideal Burn down						202	187	171	156	140	125	109	93	78	62	47	31	16	0

Figure 5. *Sprint 5 Burn Down Chart*

3. Impediments

Table 7. *Impediments*

Id	Description	Raised By	Raised On	Owner	Status	Resolution	Resolved On
1	Don't have Android phone to test application	Ca	01/Mar/23	Ca	Done	Buy a phone from the shop	03/Mar/23
2	Computer broke and I need three days for repair	Trung	09/Mar/23	Trung	Done	Bring the computer to the repair shop	11/Mar/23
3	I still haven't got the database software to work with	Trung	03/Sep/22	Phuc	Done	Use a remote software to help install the database software	03/Sep/22
4	I can't contact the group members immediately when I need to ask about problems in the project	Phuc	01/Apr/23	Ca	Done	Set up a meeting with the team and agree that we will have a daily meeting	01/Apr/23
5	I can't keep up with the daily meeting because I still have to go to school and the internship	Huy	01/Apr/23	Ca	Done	Set up a meeting with the team and agree that we will have a meeting every two or three days and the schedule will be set up in advance	03/Apr/23
6	I struggling to understand how to use the workflow and would like someone to help me out	Ca	18/Apr/23	Phuc	Done	The onwer will set up a meeting with the member for support	19/Apr/23
7	I don't have an Android phone to test the mobile application	Nhan	01/May/23	Ca	Done	Lend him the Android phone	03/May/23
8	AWS server shutdown for no reason	Ca	04/Mar/23	Nhan	Done	Rent VPS server	06/Mar/23

4. Retrospective

Table 8. *Retrospective*

Sprint #	Sprint #	Owner	Start Doing (Improvement)	Continue Doing (What Went Well)	Stop Doing (Even better if)	Remarks
1	2	Huy			Let daily meeting become discussions. Keep them short.	
1	2	Ca			Having conversations via email and not in the task.	
1	2	Phuc		Attend meeting on time.		
2	3	Huy	We completed the user stories we set out to do.			
2	3	Ca			We didn't finish all the user stories.	
2	3	Trung	We should start doing individual code reviews as we go.			
2	3	Phuc		We should increase the amount we communicate as a team.		
3	4	Ca	We were able to demo a working product to the mentor.			
3	4	Phuc		We should continue having regular demos with the mentor.		

Sprint #	Sprint #	Owner	Start Doing (Improvement)	Continue Doing (What Went Well)	Stop Doing (Even better if)	Remarks
3	4	Trung	Collect mentor feedback on new features.			
3	4	Huy	Going through the entire Bug log.			
3	4	Trung		We should continue working as a team.		
3	4	Phuc	Review stories with mentor before implementation.			
4	5	Trung		Great teamwork.		