



Appendix 1 Source Code Link

<https://go.undiksha.ac.id/mLOGd>

Appendix 2 Game Experience Questionnaire Result

Respondent 1	
Full Name	Made Andika Wiananda
Age	21
I felt content	Extremely (4)
I felt skillful	Extremely (4)
I was interested in the game's story	Extremely (4)
I thought it was fun	Extremely (4)
I was fully occupied with the game	Extremely (4)
I felt happy	Extremely (4)
It gave me a bad mood	Extremely (4)
I thought about other things	Extremely (4)
I found it tiresome	Extremely (4)
I felt competent	Extremely (4)
I thought it was hard	Fairly (3)
It was aesthetically pleasing	Extremely (4)
I forgot everything around me	Extremely (4)
I felt good	Extremely (4)
I was good at it	Extremely (4)
I felt bored	Extremely (4)
I felt successful	Extremely (4)
I felt imaginative	Extremely (4)
I felt that I could explore things	Extremely (4)
I enjoyed it	Extremely (4)
I was fast at reaching the game's targets	Fairly (3)
I felt annoyed	Slightly (1)
I felt pressured	Slightly (1)
I felt irritable	Slightly (1)
I lost track of time	Not at all (0)
I felt challenged	Fairly (3)
I found it impressive	Extremely (4)
I was deeply concentrated in the game	Extremely (4)
I felt frustrated	Slightly (1)
It felt like a rich experience	Fairly (3)
I lost connection with the outside world	Fairly (3)
I felt time pressure	Fairly (3)
I had to put a lot of effort into it	Extremely (4)

Respondent 2	
Full Name	Joe Agilla Vandyta
Age	21
I felt content	Slightly (1)
I felt skillful	Extremely (4)
I was interested in the game's story	Fairly (3)
I thought it was fun	Fairly (3)
I was fully occupied with the game	Moderately (2)
I felt happy	Extremely (4)
It gave me a bad mood	Moderately (2)
I thought about other things	Extremely (4)
I found it tiresome	Moderately (2)
I felt competent	Extremely (4)
I thought it was hard	Not at all (0)
It was aesthetically pleasing	Fairly (3)
I forgot everything around me	Moderately (2)
I felt good	Fairly (3)
I was good at it	Extremely (4)
I felt bored	Slightly (1)
I felt successful	Fairly (3)
I felt imaginative	Moderately (2)
I felt that I could explore things	Slightly (1)
I enjoyed it	Fairly (3)
I was fast at reaching the game's targets	Extremely (4)
I felt annoyed	Not at all (0)
I felt pressured	Slightly (1)
I felt irritable	Not at all (0)
I lost track of time	Not at all (0)
I felt challenged	Moderately (2)
I found it impressive	Moderately (2)
I was deeply concentrated in the game	Fairly (3)
I felt frustrated	Fairly (3)
It felt like a rich experience	Slightly (1)
I lost connection with the outside world	Not at all (0)
I felt time pressure	Not at all (0)
I had to put a lot of effort into it	Slightly (1)

Respondent 3	
Full Name	David Mario Yohanes Samosir
Age	23
I felt content	Moderately (2)
I felt skillful	Fairly (3)
I was interested in the game's story	Slightly (1)
I thought it was fun	Fairly (3)
I was fully occupied with the game	Moderately (2)

I felt happy	Moderately (2)
It gave me a bad mood	Not at all (0)
I thought about other things	Moderately (2)
I found it tiresome	Fairly (3)
I felt competent	Fairly (3)
I thought it was hard	Not at all (0)
It was aesthetically pleasing	Moderately (2)
I forgot everything around me	Moderately (2)
I felt good	Slightly (1)
I was good at it	Moderately (2)
I felt bored	Fairly (3)
I felt successful	Moderately (2)
I felt imaginative	Slightly (1)
I felt that I could explore things	Slightly (1)
I enjoyed it	Moderately (2)
I was fast at reaching the game's targets	Extremely (4)
I felt annoyed	Slightly (1)
I felt pressured	Slightly (1)
I felt irritable	Not at all (0)
I lost track of time	Not at all (0)
I felt challenged	Slightly (1)
I found it impressive	Slightly (1)
I was deeply concentrated in the game	Moderately (2)
I felt frustrated	Not at all (0)
It felt like a rich experience	Slightly (1)
I lost connection with the outside world	Moderately (2)
I felt time pressure	Slightly (1)
I had to put a lot of effort into it	Slightly (1)

Respondent 4	
Full Name	kadek ari mardarta
Age	17
I felt content	Moderately (2)
I felt skillful	Slightly (1)
I was interested in the game's story	Moderately (2)
I thought it was fun	Fairly (3)
I was fully occupied with the game	Slightly (1)
I felt happy	Slightly (1)
It gave me a bad mood	Not at all (0)
I thought about other things	Not at all (0)
I found it tiresome	Slightly (1)
I felt competent	Not at all (0)
I thought it was hard	Slightly (1)
It was aesthetically pleasing	Moderately (2)
I forgot everything around me	Slightly (1)

I felt good	Moderately (2)
I was good at it	Slightly (1)
I felt bored	Not at all (0)
I felt successful	Moderately (2)
I felt imaginative	Slightly (1)
I felt that I could explore things	Slightly (1)
I enjoyed it	Slightly (1)
I was fast at reaching the game's targets	Fairly (3)
I felt annoyed	Not at all (0)
I felt pressured	Not at all (0)
I felt irritable	Not at all (0)
I lost track of time	Not at all (0)
I felt challenged	Not at all (0)
I found it impressive	Slightly (1)
I was deeply concentrated in the game	Fairly (3)
I felt frustrated	Not at all (0)
It felt like a rich experience	Slightly (1)
I lost connection with the outside world	Slightly (1)
I felt time pressure	Not at all (0)
I had to put a lot of effort into it	Moderately (2)

Respondent 5	
Full Name	Helmi Maulana Hadiwinata
Age	24
I felt content	Extremely (4)
I felt skillful	Moderately (2)
I was interested in the game's story	Moderately (2)
I thought it was fun	Fairly (3)
I was fully occupied with the game	Extremely (4)
I felt happy	Fairly (3)
It gave me a bad mood	Slightly (1)
I thought about other things	Moderately (2)
I found it tiresome	Extremely (4)
I felt competent	Not at all (0)
I thought it was hard	Moderately (2)
It was aesthetically pleasing	Slightly (1)
I forgot everything around me	Fairly (3)
I felt good	Extremely (4)
I was good at it	Moderately (2)
I felt bored	Extremely (4)
I felt successful	Moderately (2)
I felt imaginative	Moderately (2)
I felt that I could explore things	Fairly (3)
I enjoyed it	Extremely (4)
I was fast at reaching the game's targets	Fairly (3)

I felt annoyed	Moderately (2)
I felt pressured	Slightly (1)
I felt irritable	Moderately (2)
I lost track of time	Fairly (3)
I felt challenged	Moderately (2)
I found it impressive	Fairly (3)
I was deeply concentrated in the game	Slightly (1)
I felt frustrated	Fairly (3)
It felt like a rich experience	Moderately (2)
I lost connection with the outside world	Moderately (2)
I felt time pressure	Slightly (1)
I had to put a lot of effort into it	Extremely (4)

Respondent 6	
Full Name	Putu Adi Widyantara
Age	22
I felt content	Extremely (4)
I felt skillful	Extremely (4)
I was interested in the game's story	Fairly (3)
I thought it was fun	Extremely (4)
I was fully occupied with the game	Fairly (3)
I felt happy	Extremely (4)
It gave me a bad mood	Not at all (0)
I thought about other things	Slightly (1)
I found it tiresome	Slightly (1)
I felt competent	Moderately (2)
I thought it was hard	Extremely (4)
It was aesthetically pleasing	Moderately (2)
I forgot everything around me	Moderately (2)
I felt good	Fairly (3)
I was good at it	Moderately (2)
I felt bored	Slightly (1)
I felt successful	Fairly (3)
I felt imaginative	Fairly (3)
I felt that I could explore things	Extremely (4)
I enjoyed it	Fairly (3)
I was fast at reaching the game's targets	Fairly (3)
I felt annoyed	Slightly (1)
I felt pressured	Slightly (1)
I felt irritable	Moderately (2)
I lost track of time	Slightly (1)
I felt challenged	Extremely (4)
I found it impressive	Fairly (3)
I was deeply concentrated in the game	Moderately (2)
I felt frustrated	Moderately (2)

It felt like a rich experience	Moderately (2)
I lost connection with the outside world	Slightly (1)
I felt time pressure	Moderately (2)
I had to put a lot of effort into it	Moderately (2)

Respondent 7	
Full Name	Kadek Puja Astawa
Age	22
I felt content	Fairly (3)
I felt skillful	Extremely (4)
I was interested in the game's story	Fairly (3)
I thought it was fun	Extremely (4)
I was fully occupied with the game	Moderately (2)
I felt happy	Extremely (4)
It gave me a bad mood	Not at all (0)
I thought about other things	Not at all (0)
I found it tiresome	Slightly (1)
I felt competent	Fairly (3)
I thought it was hard	Moderately (2)
It was aesthetically pleasing	Fairly (3)
I forgot everything around me	Not at all (0)
I felt good	Extremely (4)
I was good at it	Fairly (3)
I felt bored	Slightly (1)
I felt successful	Fairly (3)
I felt imaginative	Fairly (3)
I felt that I could explore things	Moderately (2)
I enjoyed it	Extremely (4)
I was fast at reaching the game's targets	Fairly (3)
I felt annoyed	Slightly (1)
I felt pressured	Slightly (1)
I felt irritable	Not at all (0)
I lost track of time	Not at all (0)
I felt challenged	Moderately (2)
I found it impressive	Extremely (4)
I was deeply concentrated in the game	Fairly (3)
I felt frustrated	Slightly (1)
It felt like a rich experience	Fairly (3)
I lost connection with the outside world	Not at all (0)
I felt time pressure	Not at all (0)
I had to put a lot of effort into it	Slightly (1)

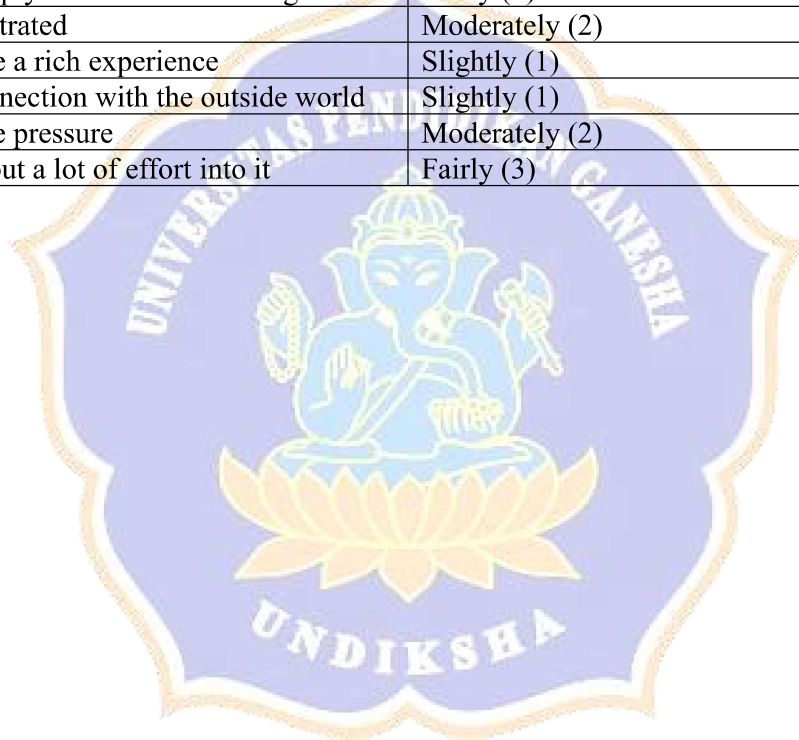
Respondent 8	
Full Name	I Dewa Gede Mahesta Parawangsa
Age	22
I felt content	Fairly (3)
I felt skillful	Fairly (3)
I was interested in the game's story	Extremely (4)
I thought it was fun	Fairly (3)
I was fully occupied with the game	Fairly (3)
I felt happy	Fairly (3)
It gave me a bad mood	Fairly (3)
I thought about other things	Fairly (3)
I found it tiresome	Fairly (3)
I felt competent	Fairly (3)
I thought it was hard	Moderately (2)
It was aesthetically pleasing	Extremely (4)
I forgot everything around me	Fairly (3)
I felt good	Fairly (3)
I was good at it	Fairly (3)
I felt bored	Fairly (3)
I felt successful	Fairly (3)
I felt imaginative	Extremely (4)
I felt that I could explore things	Fairly (3)
I enjoyed it	Fairly (3)
I was fast at reaching the game's targets	Moderately (2)
I felt annoyed	Moderately (2)
I felt pressured	Slightly (1)
I felt irritable	Slightly (1)
I lost track of time	Fairly (3)
I felt challenged	Fairly (3)
I found it impressive	Fairly (3)
I was deeply concentrated in the game	Moderately (2)
I felt frustrated	Not at all (0)
It felt like a rich experience	Moderately (2)
I lost connection with the outside world	Slightly (1)
I felt time pressure	Fairly (3)
I had to put a lot of effort into it	Fairly (3)

Respondent 9	
Full Name	Ngakan Gde Satria Abirama
Age	22
I felt content	Not at all (0)
I felt skillful	Slightly (1)
I was interested in the game's story	Slightly (1)
I thought it was fun	Slightly (1)
I was fully occupied with the game	Slightly (1)

I felt happy	Moderately (2)
It gave me a bad mood	Slightly (1)
I thought about other things	Moderately (2)
I found it tiresome	Fairly (3)
I felt competent	Moderately (2)
I thought it was hard	Moderately (2)
It was aesthetically pleasing	Fairly (3)
I forgot everything around me	Fairly (3)
I felt good	Moderately (2)
I was good at it	Moderately (2)
I felt bored	Slightly (1)
I felt successful	Slightly (1)
I felt imaginative	Fairly (3)
I felt that I could explore things	Fairly (3)
I enjoyed it	Fairly (3)
I was fast at reaching the game's targets	Moderately (2)
I felt annoyed	Moderately (2)
I felt pressured	Moderately (2)
I felt irritable	Moderately (2)
I lost track of time	Moderately (2)
I felt challenged	Fairly (3)
I found it impressive	Fairly (3)
I was deeply concentrated in the game	Moderately (2)
I felt frustrated	Moderately (2)
It felt like a rich experience	Moderately (2)
I lost connection with the outside world	Slightly (1)
I felt time pressure	Fairly (3)
I had to put a lot of effort into it	Moderately (2)

Respondent 10	
Full Name	Rama Ngurah Putera Pinatih
Age	22
I felt content	Slightly (1)
I felt skillful	Moderately (2)
I was interested in the game's story	Fairly (3)
I thought it was fun	Fairly (3)
I was fully occupied with the game	Moderately (2)
I felt happy	Fairly (3)
It gave me a bad mood	Slightly (1)
I thought about other things	Slightly (1)
I found it tiresome	Moderately (2)
I felt competent	Moderately (2)
I thought it was hard	Moderately (2)
It was aesthetically pleasing	Fairly (3)
I forgot everything around me	Fairly (3)

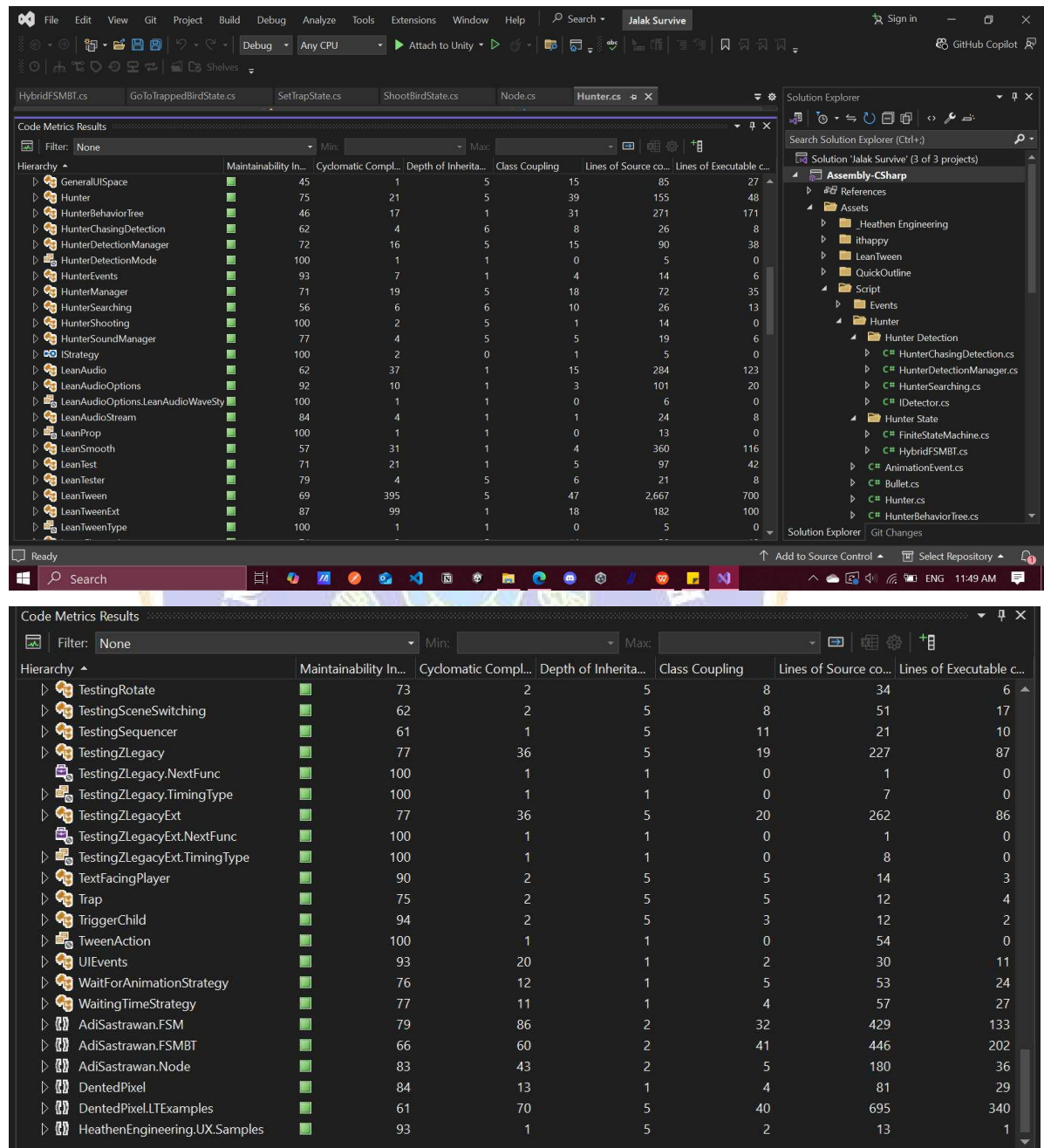
I felt good	Moderately (2)
I was good at it	Fairly (3)
I felt bored	Slightly (1)
I felt successful	Extremely (4)
I felt imaginative	Fairly (3)
I felt that I could explore things	Fairly (3)
I enjoyed it	Fairly (3)
I was fast at reaching the game's targets	Fairly (3)
I felt annoyed	Not at all (0)
I felt pressured	Not at all (0)
I felt irritable	Slightly (1)
I lost track of time	Not at all (0)
I felt challenged	Fairly (3)
I found it impressive	Moderately (2)
I was deeply concentrated in the game	Fairly (3)
I felt frustrated	Moderately (2)
It felt like a rich experience	Slightly (1)
I lost connection with the outside world	Slightly (1)
I felt time pressure	Moderately (2)
I had to put a lot of effort into it	Fairly (3)



Appendix 3 Link Jalak Bali Survive Game

<https://go.undiksha.ac.id/uQyZ2>

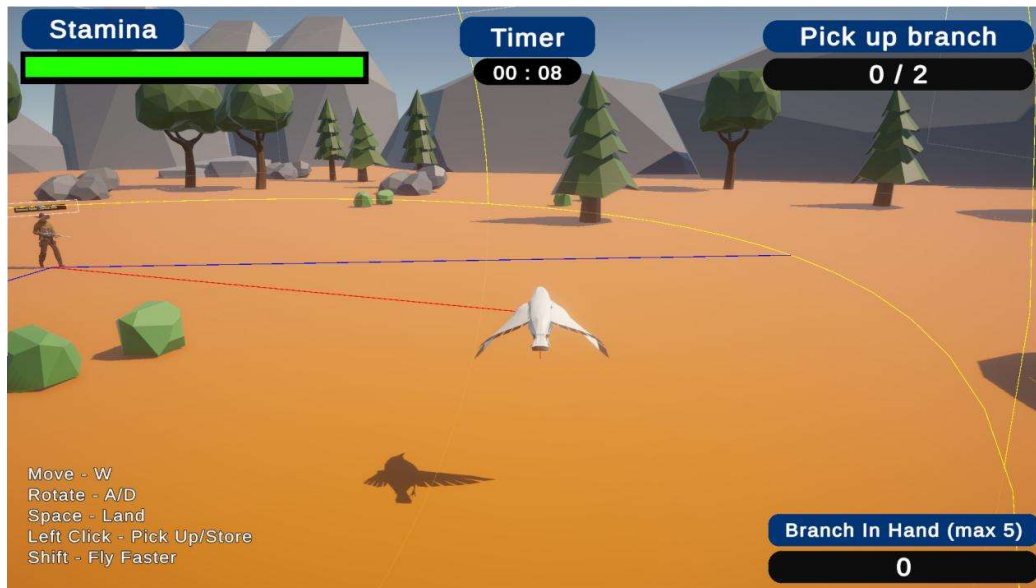
Appendix 4 Code Metrix Result in Microsoft Visual Studio



Hierarchy	Maintainability In...	Cyclomatic Compl...	Depth of Inherita...	Class Coupling	Lines of Source co...	Lines of Executable c...
GeneralUISpace	45	1	5	15	85	27
Hunter	75	21	5	39	155	48
HunterBehaviorTree	46	17	1	31	271	171
HunterChasingDetection	62	4	6	8	26	8
HunterDetectionManager	72	16	5	15	90	38
HunterDetectionMode	100	1	1	0	5	0
HunterEvents	93	7	1	4	14	6
HunterManager	71	19	5	18	72	35
HunterSearching	56	6	6	10	26	13
HunterShooting	100	2	5	1	14	0
HunterSoundManager	77	4	5	5	19	6
IStrategy	100	2	0	1	5	0
LeanAudio	62	37	1	15	284	123
LeanAudioOptions	92	10	1	3	101	20
LeanAudioOptions.LeanAudioWaveSty	100	1	1	0	6	0
LeanAudioStream	84	4	1	1	24	8
LeanProp	100	1	1	0	13	0
LeanSmooth	57	31	1	4	360	116
LeanTest	71	21	1	5	97	42
LeanTester	79	4	5	6	21	8
LeanTween	69	395	5	47	2,667	700
LeanTweenExt	87	99	1	18	182	100
LeanTweenType	100	1	1	0	5	0
TestingRotate	73	2	5	8	34	6
TestingSceneSwitching	62	2	5	8	51	17
TestingSequencer	61	1	5	11	21	10
TestingZLegacy	77	36	5	19	227	87
TestingZLegacy.NextFunc	100	1	1	0	1	0
TestingZLegacy.TimingType	100	1	1	0	7	0
TestingZLegacyExt	77	36	5	20	262	86
TestingZLegacyExt.NextFunc	100	1	1	0	1	0
TestingZLegacyExt.TimingType	100	1	1	0	8	0
TextFacingPlayer	90	2	5	5	14	3
Trap	75	2	5	5	12	4
TriggerChild	94	2	5	3	12	2
TweenAction	100	1	1	0	54	0
UIEvents	93	20	1	2	30	11
WaitForAnimationStrategy	76	12	1	5	53	24
WaitingTimeStrategy	77	11	1	4	57	27
AdiSastrawan.FSM	79	86	2	32	429	133
AdiSastrawan.FSMBT	66	60	2	41	446	202
AdiSastrawan.Node	83	43	2	5	180	36
DentedPixel	84	13	1	4	81	29
DentedPixel.LTExamples	61	70	5	40	695	340
HeathenEngineering.UX.Samples	93	1	5	2	13	1

Appendix 5 Black Box Testing Result

1. BBT-01 - NPC follows the bird when it sees it



2. BBT-02 - NPC NPC is patrolling to random location



3. BBT-03 - NPC is idling



4. BBT-04 - NPC moves to random location after idling



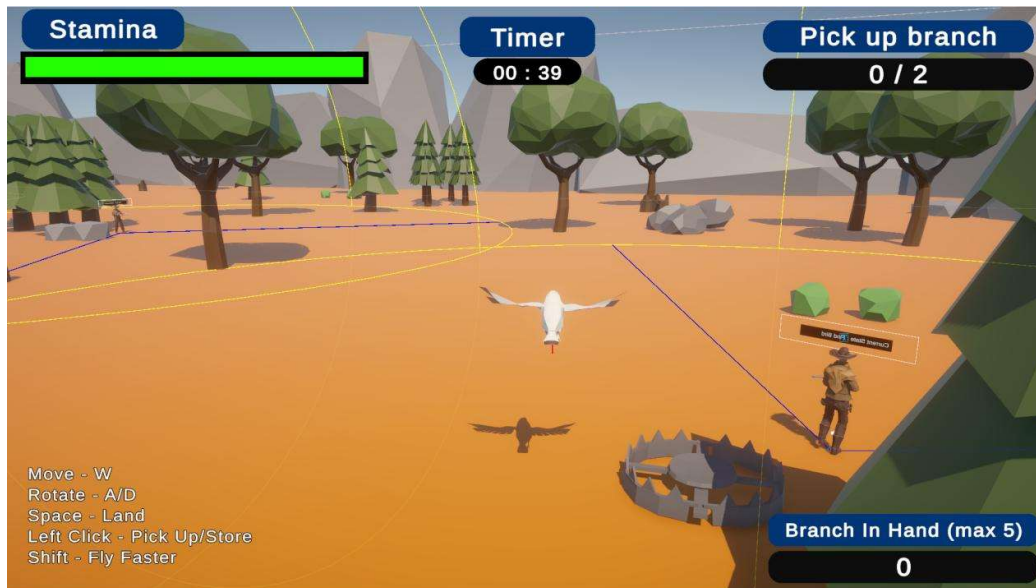
5. BBT-05 - NPC is idling after reaching the destination



6. BBT-06 - NPC prepare and set a trap



7. BBT-07 - NPC is patrolling after finished setting a trap



8. BBT-08 - NPC is following the bird



9. BBT-09 - NPC is aiming and shoot at the bird



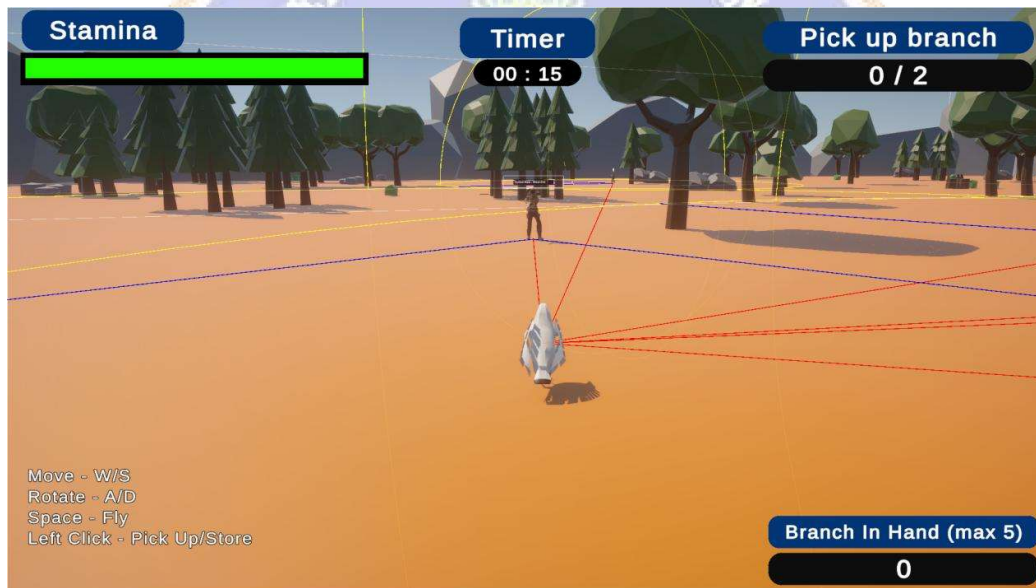
10. BBT-10 - NPC reload the weapon and resum the detection



11. BBT-11 - NPC goes to the trapped bird and capture it



12. BBT-12 - NPC is patrolling after the bird is escaped



BIOGRAPHY



Putu Adi Sastrawan is the son of Komang Artawan and Ketut Ratnadi. Born in Dencarik on 11 July, 2003, is a native Indonesian citizen residing in Banjar, Buleleng, Bali. Completed his primary school in 2015 at SD N 1 Banjar, continued his junior high school at SMP N 1 Banjar and finished his study in 2018. He then continued his study in SMA N 2 Banjar and graduate in 2021. After graduate from his high school, he continued his education in Computer Science at Universitas Pendidikan Ganesha, where he is currently completing his undergraduate thesis.

