

GAME DESIGN DOCUMENT

CYBER EXPOSED

By Mesmeric Studios

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Last updated:
June 4th, 2020

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Game Analysis

Cyber Exposed is a five-level game for PC where you will need to retake control of your computer which has hacked by famous data miner, Override. In order to achieve this, the player -Bobbie Bird- needs to follow the trail of his new enemy by running on moving platforms and dodging viruses and shooting bytes. Bobbie will be able to get some power-ups through his journey and run around his computer since each level represents a different hardware element.

Mission Statement

Cyber Exposed is a platform game created for PC where you will help Bobbie Bird regain control of his computer after Override, the famous data miner, hacked him. Bobbie's enemy will do anything in his power to expose all his data on the internet ... are you agile enough to reach Override before he exposes Bobbie?

Genre

Platform game

Platforms

PC

General Specs

Target Audience	
Gender	Everyone 10+
Age	10+
Profile	For everyone who likes technology and wants some light-playing but entertaining adventure.

Tech Specs

Describe how the player will play. Touch controls? Regular Controls?

Platform to develop	
OS	Windows
Screen size	All 16:9 (576x1024, 720x1280, 1080x1920, 1440x2560 All 16:10
Screen notched (mobile)	NONE
Orientation (mobile)	NONE

Platform	
Built-in Inputs	Keyboard
Peripherals	NONE
Software	
Engine	Unity
Plugins	NONE
Other	NONE
Services	
Push Notifications	NONE
In-App Purchases	NONE
Ads	NONE
Analytics	NONE
Backend	
Requests Types	NONE
Connectivity	NONE

Button/ Touch Input	Action it Performs
Left Arrow	Moves the player to the left.
Right Arrow	Moves the player to the right.
Space Bar	Makes the player jump.

Art Specs

Look and feel	
Theme	Pixel Art
Ambiance	Inside of a computer
Colors	Dark, solid colors (No textures)
Shapes	Pixels
Personality	This game is based on cyber-attacks and software to defend the computer from hackers.
Software	
Animation	Unity 2019.2.18f1
Modelling	Adobe Photoshop
Files format	
Textures	NONE
Animations	.anim
Folder	https://drive.google.com/drive/folders/1Sett6m4nkmcFBauLMFWboua0n3vC3eEj?usp=sharelink
UI Files	
Format	PNG
Folder	https://drive.google.com/drive/folders/1Lu9NnF3Y24ULzXSem2MPjA9WwclcqJ5c?usp=sharelink

Characters

Character	Description	Characteristics	Misc. Info
Bobbie Bird 	A geek teenager who loves to learn all about computers and spends his time programming. He is a playable character, the main one in fact, responsible of defeating Override, the hacker that infected his computer.	He is an intelligent, timid and agile young man who knows all there is to know about computers. He is a fit teenager who can run and jump and is able of using cyber security software to combat hackers.	He is about to go to college to study Computer Science at some really prestigious university.
Override 	A really mysterious NPC who infected Bobbie's computer with a horrible malware. He is a famous data miner, well known in the hacking community.	He knows even more than Bobbie about computers and is able of hacking anyone, even some computer science gurus. He is quick and agile with malware and viruses.	The only known information is his hacker name: Override. His mysterious personality does not allow him to let others know more about him.

Audio Specs

Feeling	
Theme	8-bit music
Ambiance	Geek ambiance
Colour	Dark and mysterious
Shapes	Intriguing
Files format	
Voice (NONE)	WAV
FX	
Songs	
Folder	https://drive.google.com/drive/folders/1j46WKOASqqfpfLtGVpUkRjGevESCJmJU?usp=sharing

Gameplay

Overview of Gameplay

Cyber Exposed is a platform game for people who like all technology related and want to have an exciting time while demonstrating his/her abilities with the keyboard. It was developed for all computers that run on Windows and there are three different levels of difficulty for people who love a challenge. After playing Cyber Exposed for the first time, you will not want to leave your computer until you defeat Override.

Game Modes

The game offers game modes before playing

- *Easy*
- *Medium*
- *Hard*

These three game modes offer different difficulty to measure the player's progression; the main change is that the obstacles will move at different speeds depending on the mode.

Easy is for the player to get familiar with the game, learn the controls and get to know all of the power-ups and obstacles.

Medium is to challenge the players that are already comfortable with the gameplay and want a bit more adrenaline and stress while playing Cyber Exposed.

Finally, *Hard* is to really test the player's knowledge of the game, agility and stress and adrenaline control.

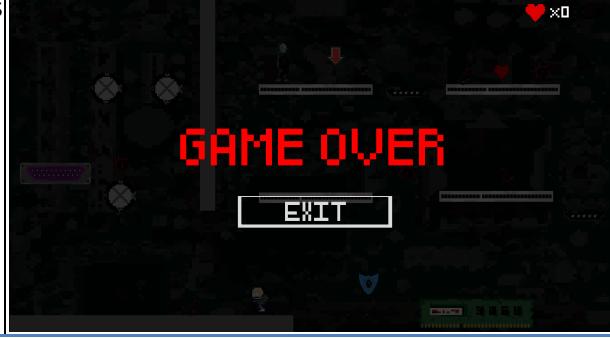
Board Flow

<https://drive.google.com/drive/folders/15TD8n5tb86LJMw0kMUfNP1a27r37NRTN?usp=sharing>

1- Main Screen		
Screen	Description	Visualization
Main Menu	The player will be able to choose from 3 options: play, settings and exit. The first and last are pretty straight forward and the second one will take you to another screen.	
Settings Menu	The player can modify the volume for the music and the SFX.	
Game Menu	If the player saved a previous game, the option to continue that game will be shown. The new game option will always be there and there is also an option for a tutorial.	
Difficulty Menu	The player can choose within 3 game modes.	

2- Tutorial																										
Screen	Description	Visualization																								
Controllers Tutorial	The screen will show some explanation text while the player work with the controllers for the first time. Each time the player passes a trigger, a new text will be shown.	 <p>USE LEFT-RIGHT ARROWS TO MOVE PRESS SPACE TO JUMP GO DESTROY OVERRIDE'S MALWARE !!!>>></p> <p>ENEMIES TRICKS OVERRIDE</p> <p>1</p>																								
Power Ups and Attacks Tutorial	The enemies and power ups are presented with a small explanation for each.	 <table border="0"> <thead> <tr> <th colspan="2">BACK</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>Lose a life</td> </tr> <tr> <td>T</td> <td>INVERTS CONTROLLERS</td> </tr> <tr> <td>A</td> <td>Lose a life</td> </tr> <tr> <td>C</td> <td>DUPLOCATES</td> </tr> <tr> <td>K</td> <td>Lose a life</td> </tr> <tr> <td>P</td> <td>Double Jump</td> </tr> <tr> <td>O</td> <td>COUNTER ATTACK</td> </tr> <tr> <td>E</td> <td>DEFENDER</td> </tr> <tr> <td>U</td> <td>Extra life</td> </tr> <tr> <td>P</td> <td>OVERCLOCKING</td> </tr> <tr> <td>S</td> <td></td> </tr> </tbody> </table>	BACK		A	Lose a life	T	INVERTS CONTROLLERS	A	Lose a life	C	DUPLOCATES	K	Lose a life	P	Double Jump	O	COUNTER ATTACK	E	DEFENDER	U	Extra life	P	OVERCLOCKING	S	
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S																										

3- Gameplay		
Screen	Description	Visualization
Level 1	The player starts on the bottom left and will need to dodge the malware coming from the top and reach the arrow next to Override.	
Level 2	The player starts on the bottom of the screen and will need to reach the top left platform while avoiding the duplicating worms and the moving malware.	
Level 3 Introduction	This level has a unique characteristic: the controllers are inverted. This screen informs the player that something is going on.	
Level 3	The player starts on a port platform and will need to reach the top right platform while working with inverted controllers and avoiding the worms.	

Level 4	The player starts on the top left and will need to avoid the malware, bugs and worms while trying to reach Override.	
Level 5	The player will have to defeat Override on a boss fight.	
Pause Menu	The player is able to pause the game and either continue or save and exit the level.	
Game Over	If a player loses all the lives, this screen will appear.	

4- End		
Screen	Description	Visualization
End Scene	If you complete all 5 levels, this screen will be shown.	<p>CONGRATULATIONS YOU DESTROYED OVERRIDE 5 MALWARE!!!</p> <p>EXIT</p>

Game Objectives & Rewards

Bobbie will be able to grab power-ups to help him defeat Override's attacks which consist of rain of bytes, malware, worms and bugs. These attacks are meant to challenge the player as he/she progresses through the game. The power-ups and attacks are also inspired in cyber security elements as you will see in the following table.

Rewards (Power-ups)	Penalties (Attacks)	Difficulty Levels (3)
<p>1. Life The player has five lives to begin with and he can accumulate more by grabbing the heart.</p> 	<p>1. Malware Every time the player touches it, Bobbie will lose one life. It will move right and left on the platforms.</p> 	<p>Counts with three difficulty modes (in all of them the player will need to pass 5 levels) which will alter the speed of the attacks.</p> <p>There is:</p> <ul style="list-style-type: none"> a. Easy mode b. Medium mode c. Hard mode <p>The game designer has the chance to change the attack time for each game mode.</p>
<p>2. Overclocking If the player grabs this he will be faster for some period of time.</p> 	<p>2. Worm If the player gets close to it, they will duplicate in random spots on the platforms and Bobbie will lose one life if he touches one of the worms.</p> 	

<p>3. Defender</p> <p>This power-up will create a defense from all the attacks for a period of time.</p> 	<p>3. Bug</p> <p>The controls will be inverted for some period of time.</p> 	
<p>4. Double Jump</p> <p>The player will be able to jump higher for a period of time.</p> 	<p>4. Bytes</p> <p>Override will throw bytes randomly on the platforms and if they touch the player, Bobbie will lose one life.</p> 	
<p>5. Counter-attack</p> <p>Will allow the player to reduce Override's power: while having this power up if any enemy hits Bobbie, the attack will affect Override instead.</p> 		

Game Units

Screen	Units	Visualization
Game Screen	Height: 48 units Width: 86 units	
Power Ups	Height: 2 units Width: 2 units	
Worm	Height: 2 units Width: 2 units	
Bug	Height: 2.5 units Width: 2 units	
Malware	Height: 1.5 units Width: 1.5 units	
Override	Height: 6 units Width: 2 units	
Bobbie	Height: 3.5 units Width: 3 units	

Gameplay Mechanics

The following table will explain how some of the systems in the game work. This includes how characters move in the game, what gameplay actions are available, item inventory and attributes, and how the game progresses from level to level.

PLAYER ATTRIBUTES		(things the player can and cannot do while he is playing)
Press the left arrow key		If the player presses this key, Bobbie will move to the left until the key is released.
Press the right arrow key		If the player presses this key, Bobbie will move to the right until the key is released.
Press the space bar key		If the player presses this key, Bobbie will jump towards the direction indicated by the previous two keys. The player can only jump once, meaning that if the key is pressed while he is on the air, the jump will not be duplicated.
MAIN MECHANICS		(All these next mechanics cannot be modified by the player. These are all predefined)
GAMEPLAY		
Malware		The malware will start popping out a predefined spot and will start moving and bouncing off predefined barriers. Each malware will appear after some period of time (defined by the game designer based on the difficulty level).
Worm		Each worm will be in a predefined place and will also be duplicated in positions defined by the game designer.
Bug		It will be placed in a predefined spot.
Bytes		Override is able to attack in four different ways: rain, left throw, right throw, and mega attack (all explained later in the document). The bytes will move downwards.

Power Ups	<p>From level 1 to 4, the power ups are already positioned by the game designer and are one use only, meaning that they will not appear again.</p> <p>On level 5, the power ups will appear:</p> <ul style="list-style-type: none"> -Predefined location the first time. -Randomly (some period of time after being grabbed) on a predefined location.
Scoring System	
Points	How it's Awarded & Benefits
Lives	<p>In each level (except for the last one) there is one life available to be grabbed by the player. The player starts the game (on level 1) with 5 lives and if he/she grabs more, they are accumulative. By grabbing a life power up, he/she has more chances of reaching the last level.</p>
Background Behaviors	
Override	<p>Override, being an NPC, will perform some movements (animations) when an attack is thrown or when the player reaches the end of the level.</p>

Enemy Pattern Behavior

The malware will appear from a machine and will move down the platforms towards Bobbie, while the other enemies' locations will be predefined. The enemy, Override, will be on top and will throw, on some occasions, bytes in four possible ways: left or right throw, rain throw and mega attack.

Visualization	
Pattern Behavior Description	
Idle	
The enemy is always on top of the platform with his idle animation.	
Rain	
Override will throw down bytes, like it was rain, for some period of time.	
Left Throw	
The hacker will throw a gigantic byte on the left side of the screen.	

Right Throw

The hacker will throw a gigantic byte on the right side of the screen.



Mega Attack

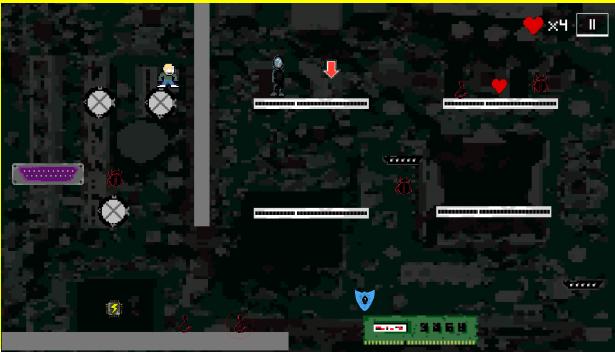
The hacker will appear a gigantic byte on some random spot on the screen and it will increase in size until it reaches a maximum size.



Level Design

Cyber Exposed is a five-level game in which each of them will have a particular difficulty. Said difficulty will depend on the kind of obstacle that is introduced while all the previous obstacles will be accumulated. In the first four levels, Bobbie needs to reach the top of the platform in order to advance and complete the level; to complete the final level (and win the game) Bobbie will need to fight Override.

Levels	
Level 1	<p>Some capacitors will allow Bobbie to climb the scenario while hopping on some RAM platforms.</p>  <p>The only obstacle that Bobbie will need to dodge is the malware. If he touches one, he will lose one life. Occasionally, he will also need to dodge Override's attacks from the top.</p>
Level 2	<p>A CPU fan is introduced to the scenario, as well as some ports and RAM slots as platforms.</p>  <p>The worms will be introduced to the game. They will stay in their places but if Bobbie touches one of them, they will duplicate, and he will lose a life. Malware will still appear, as well as Override's attacks.</p>
Level 3	<p>Another fan is introduced to the computer inspired scenario and some VGA connectors will work as platforms for Bobbie to pass the level.</p> <p>Override will manage to introduce an additional bug to Bobbie's computer which will invert the controls throughout the entire level. The player will need to get comfortable with the new</p>

	<p>gameplay while still dodging malware, worms and bytes.</p>
<p>Level 4</p> 	<p>All previous elements are presented to the computer related look.</p> <p>The level 3 bugs will now appear as obstacles on the platform and if they are touched, the controls will be inverted for some period of time. The other attacks will still be an obstacle for Bobbie.</p>
<p>Level 5</p> 	<p>The background is changed and there are only 5 platforms where Bobbie can move towards to while dodging Override's attacks and reaching for the power ups to defeat the hacker.</p> <p>Bobbie will need to fight Override. He will be able to grab lives, antivirus and counterattacks to save himself and complete the level; Override will use his bytes to attack Bobbie.</p>

UI

The background and level design are based on dark and solid colors. The UI elements are all white or red within the pixel art theme.

<https://drive.google.com/drive/folders/1Lu9NnF3Y24ULzXSem2MPjA9WwclcqJ5c?usp=sharing>

Main Menu				
Name	Description	Type	Action it Performs	Visualization
Play	Button to play the game.	Button	Goes to the game menu.	
Settings	Button to go to settings.	Button	Goes to settings menu.	
Exit	Button to exit the game.	Button	Quits the application.	

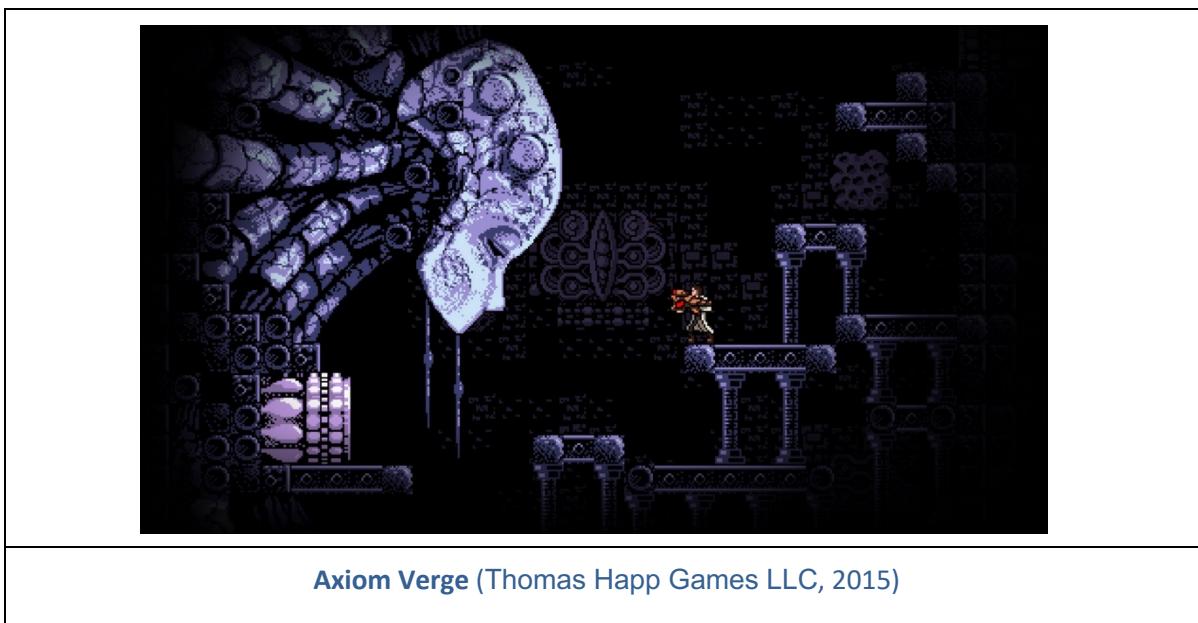
Game Menu				
Name	Description	Type	Action it Performs	Visualization
New Game	Button to start a new game.	Button	Starts a new game.	
Continue	Button to continue a game.	Button	Continues game.	
Easy	Choose easy mode.	Button	Sets the difficulty level to easy.	
Medium	Choose medium mode.	Button	Sets the difficulty level to medium.	
Hard	Choose hard mode.	Button	Sets the difficulty level to hard.	
Tutorial	Button to start tutorial.	Button	Starts tutorial.	

Pause				
Name	Description	Type	Action it Performs	Visualization
Continue	Button to resume game.	Button	Resumes game.	CONTINUE
Save & Exit	Button to save and exit level.	Button	Saves and exits game.	SAVE/EXIT

End Screen				
Name	Description	Type	Action it Performs	Visualization
Exit	Button to exit game.	Button	Exits game.	EXIT

2D Assets and Art

2D Assets and Art References



Axiom Verge (Thomas Happ Games LLC, 2015)

2D Assets and Art Journal

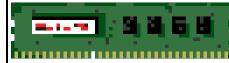
Journal with the evolution of each file or new 2D model. Every major change must be registered here.

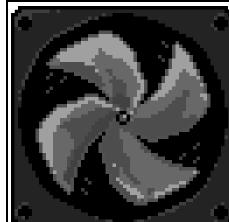
Name	Version	Date	Comments
Override	1.0	11/05/2020	Finished idle
Override	2.0	12/05/2020	Finished throwing and typing
Power-ups	1.0	12/05/2020	Finished all power-ups
Obstacles	1.0	12/05/2020	Finished all obstacles
Platforms	1.0	16/05/2020	First design: RAM style
Platforms	2.0	18/05/2020	Ports, fans, VGA, RAM slots

2D Assets and Art List

<https://drive.google.com/drive/folders/1PKGBbhGIBXps6IyoCLEAVvbFkFOXEi?usp=sharing>

Asset	P	Scene	Description
	P	Gameplay	Override (NPC)
	P	Gameplay	Bobbie (Main character)
	P	Gameplay	Malware
	P	Gameplay	Worm
	P	Gameplay	Bug
	P	Gameplay	Byte

	P	Gameplay	Extra life
	P	Gameplay	Defender
	P	Gameplay	Counter Attack
	P	Gameplay	Double Jump
	P	Gameplay	Overclocking
	L	Gameplay	RAM platform
	L	Gameplay	RAM slot platform

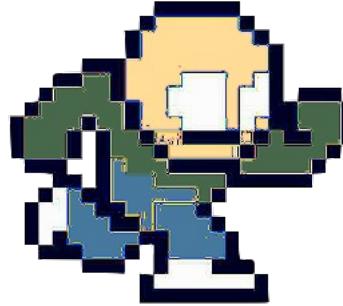
	D	Gameplay	Capacitor platform
	D	Gameplay	Fan platform
	D	Gameplay	USB platform

P = Priority

- H = High priority, this is a must.
- L = Low, to be done after all H assets.
- D = Desirable, assets nice to have, but that there may not be time to implement them at all, implementation to be considered after L assets.

Animations

2D Animation

UI	Description	Characteristics	Visualization
Override side movement	Animation for each throw.	The character moves the arms up and down on the side.	
Override throw movement.	Animation for a two hands throw.	The hacker moves both arms up and down.	
Bobbie run	Side movement.	The character moves left or right.	

Bobbie jump	Upward movement.	The character jumps.	
Worm	Side movement.	The worm moves its head side to side.	

Audio

All the songs were developed by the team using FamiTracker and are based on the pixel art theme and inspired by 8-bit music.

<https://drive.google.com/drive/folders/1j46WKOASqqfpfLtGVpUkRjGevESCJmJU?usp=sharing>

Song	P	Play	Trigger	Visualization (Screens)	Description
Menu	P	L	Start of application.		8-bit intriguing and medium paced song.

Level 1	P L	Start of level 1.		8-bit medium paced song.
Level 2	P L	Start of level 2.		8-bit medium paced song.
Level 3	P L	Start of level 3.		8-bit fast paced song.
Level 4	P L	Start of level 4.		8-bit fast paced song.
Level 5	P L	Start of level 5.		8-bit dark, mysterious and intriguing song.

P = Priority

- H = High priority, this is a must.
- L = Low, to be done after al H effects.
- D = Desirable, effects nice to have, but that there may not be time to implement them at all, implementation to be considered after L effects.

Loop = play indefinitely

Sounds list

<https://drive.google.com/drive/folders/1j46WKOASqqfpfLtGVpUkRjGevESCJmJU?usp=sharing>

Menu	P	Play	Trigger	Description
Explosion	D	FX	Start of application.	Sound effect of an explosion.

Gameplay	P	Play	Trigger	Description
Jump	H	FX	Jump of player.	8-bit happy sound.
Extra life	L	FX	Grabbing an extra life.	8-bit happy sound.
Defender	L	FX	Grabbing a defender.	8-bit quick sound.
Counter attack	L	FX	Grabbing a counter attack.	8-bit fast sound.
Double Jump	L	FX	Grabbing a double jump.	8-bit cheery sound.
Overclocking	L	FX	Grabbing an overclocking.	8-bit fast paced sound.

P = Priority

- H = High priority, this is a must.
- L = Low, to be done after all H effects.
- D = Desirable, effects nice to have, but that there may not be time to implement them at all, implementation to be considered after L effects.

Play =

- FX (played Once)
- Loop

Audio Journal

Journal with the evolution of each track. Every major change must be registered here.

Name	Version	Date	Comments
Menu song	1.0	01/06/2020	Final
Level 1 song	1.0	01/06/2020	Final
Level 2 song	1.0	01/06/2020	Final
Level 3 song	1.0	01/06/2020	Final
Level 4 song	1.0	01/06/2020	Final
Level 5 song	1.0	01/06/2020	Final

Programming List

Topic	P	Objects	Variables	Description
Character movement	H	Bobbie	Keys, Speed, JumpHeight	Control the left, right and jump movement of the character.
Worm	H	Worm	WormBorders	Duplicate the worm in a random position.
Malware	H	Malware	JumpHeight, HorizontalMove	Move the malware right and left while jumping automatically.
Power ups	H	Power Ups	AudioClip	Play the clip, call the desired effect and disappear the object.
Hacker	H	Override	ByteScale, RowBytes, SeparationBytes, AttackTime	Control the hacker's attacks.
Bug	H	Bug	Keys	Invert controllers.
Platform	L	Platform	Direction, Speed, Time	Control the platforms' movement.
GameData	L	Empty	Level, Lives, Difficulty, Volume	Save the game data.

P = Priority

- H = High priority, this is a must.
- L = Low, to be done after al H scripts.
- D = Desirable, scripts nice to have, but that there may not be time to implement them at all.

Game Design Journal

Date		Actions
11/05/2020	GD A	<ul style="list-style-type: none"> Story and general idea for the game was approved. Decided power-ups, obstacles and characters. Designed the studio's logo. Decided a name for the studio and the game. Designed pixel art for characters, obstacles and power-ups.
12/05/2020	A	<ul style="list-style-type: none"> 2D animations in Unity. Finalized pixel art for obstacles and level elements.
13/05/2020	GD	<ul style="list-style-type: none"> Defined the unique obstacles and attacks for each of the five levels.
15/05/2020	P	<ul style="list-style-type: none"> Malware's movement on the platforms. Worm duplication.
16/05/2020	A GD P	<ul style="list-style-type: none"> Created platforms and accessories. Defined storyboard, character, story, enemies, limits, rewards and challenges. Finished worm's mechanics.
18/05/2020	A P	<ul style="list-style-type: none"> Created more pixel art for level accessories. Finished hacker's attacks and destroyers. Polished the rain attack for better distribution on the screen.
22/05/2020	P	<ul style="list-style-type: none"> Polished worm's mechanics. Polished again the hacker's attacks. Player's mechanics. Bug's mechanics.
23/05/2020	P GD	<ul style="list-style-type: none"> Platform's movement. Power ups mechanics. Added lives to player. Fixed layers.
25/05/2020	A GD P	<ul style="list-style-type: none"> Buttons' sprites for menu. Finished main screen menu. Player prefs.
26/05/2020	GD P	<ul style="list-style-type: none"> Implemented level velocity selection. Pause and save options. Load game or new game option.
27/05/2020	A	<ul style="list-style-type: none"> Screen transitions. Game over screen.

29/05/2020	P	<ul style="list-style-type: none"> Defender power up. Counterattack power up. Boss fight.
30/05/2020	GD A	<ul style="list-style-type: none"> Level design.
1/06/2020	A GD	<ul style="list-style-type: none"> Music and sound effects design.
2/06/2020	GD P	<ul style="list-style-type: none"> Fixed impossible level design. Fixed hardcoded variables. Insert comments on all classes.
4/06/2020	P	<ul style="list-style-type: none"> Fixed malware error. Created exec

GD = Game Design

P = Programming

A = Art