***Phase 5 (Final) Report (template)***

**P5-1** List of activities:

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | Test Case Report thinking | 15/4/2016 | 11:00a.m | 8hours | high | Doing well | | Implementation thinking | 17/4/2016 | 12:00a.m | 8hours | high | Doing nice | | Test Case Report document | 19/4/2016 | 10:00a.m | 8hours | high | Doing good | | Implementation document | 20/4/2016 | 9:00a.m | 8hours | high | Doing perfect | |

**NOTE:** *Please list your team activities that are relevant to the project (e.g., ad-hoc meeting, prototyping, etc.), with details (e.g., meeting logs, date and time, attendees, etc.).*

**P5-2** Functional Modelling:

Use Case Diagram of the **ORIGINAL** “Space Shooter” Game

|  |
| --- |
| <insert the use case diagram here>  C:\Users\Anthony\Desktop\OD.jpg |

Use Case Diagram of the **ENHANCED** “Space Shooter” Game

|  |
| --- |
| <insert the use case diagram here>  C:\Users\Anthony\Desktop\新增資料夾 (2)\phase5_Use Case.jpg |

**NOTE:** *(1) Please insert your use case diagram exported from Visual Paradigm;*

*(2) Please make sure the resolution of the diagram is high enough so that any text appears in this diagram can be easily read;*

*(3) You are encouraged to highlight the changes in the enhanced version.*

**P5-3** Object Modelling:

Class Diagram of the **ORIGINAL** “Space Shooter” Game

|  |
| --- |
| <insert the class diagram here>  C:\Users\Anthony\Desktop\1.jpg |

Class Diagram of the **ENHANCED** “Space Shooter” Game

|  |
| --- |
| <insert the class diagram here>C:\Users\Anthony\Desktop\新增資料夾 (2)\Space_Shooter.jpg |

**NOTE:** *(1) Please insert your class diagram exported from Visual Paradigm;*

*(2) Please make sure the resolution of the diagram is high enough so that any text appears in this diagram can be easily read;*

*(3) You are encouraged to highlight the changes in the enhanced version.*

**P5-4** Dynamic Modelling:

Sequence Diagrams for the **ORIGINAL** “Space Shooter” Game

Sequence Diagram - <MoveShip>

|  |
| --- |
| <insert the sequence diagram here>  C:\Users\Anthony\Desktop\新增資料夾 (2)\MoveShip.jpg |

Sequence Diagram - <Shoot >

|  |
| --- |
| <insert the sequence diagram here>  C:\Users\Anthony\Desktop\新增資料夾 (2)\Shoot.jpg |

Sequence Diagram - <RotateMoveSpawn >

|  |
| --- |
| <insert the sequence diagram here>  C:\Users\Anthony\Desktop\新增資料夾 (2)\RotateMoveSpawn.jpg |

Sequence Diagram - <SpawnWaves >

|  |
| --- |
| <insert the sequence diagram here>  C:\Users\Anthony\Desktop\新增資料夾 (2)\SpawnWaves.jpg |

Sequence Diagrams for the **ENHANCED** “Space Shooter” Game

Sequence Diagram - <MoveShip>

|  |
| --- |
| <insert the sequence diagram here>  C:\Users\Anthony\Desktop\新增資料夾 (2)\MoveShip.jpg |

Sequence Diagram - <Shoot >

|  |
| --- |
| <insert the sequence diagram here>  C:\Users\Anthony\Desktop\新增資料夾 (2)\Shoot.jpg |

Sequence Diagram - <Restart>

|  |
| --- |
| <insert the sequence diagram here>  C:\Users\Anthony\Desktop\新增資料夾 (2)\Restart.jpg |

Sequence Diagram - <Boost >

|  |
| --- |
| <insert the sequence diagram here>  C:\Users\Anthony\Desktop\新增資料夾 (2)\boost.jpg |

Sequence Diagram - <RotateMoveSpawn >

|  |
| --- |
| <insert the sequence diagram here>  C:\Users\Anthony\Desktop\新增資料夾 (2)\RotateMoveSpawn.jpg |

Sequence Diagram - <SpawnWaves >

|  |
| --- |
| <insert the sequence diagram here>  C:\Users\Anthony\Desktop\新增資料夾 (2)\SpawnWaves.jpg |

Sequence Diagram - <Load high score >

|  |
| --- |
| <insert the sequence diagram here>  C:\Users\Anthony\Desktop\新增資料夾 (2)\loadScore.jpg |

Sequence Diagram - <Save score >

|  |
| --- |
| <insert the sequence diagram here>  C:\Users\Anthony\Desktop\新增資料夾 (2)\SaveScore.jpg |

**NOTE:** *(1) Please make copies of the space above for EACH of the use cases you have identified and presented in your use case diagram, as each sequence diagram should correspond to its use case;*

*(2) Please make the sequence diagrams consistent to your use case diagram and your class diagram (both original and enhanced version);*

*(3) Please insert your sequence diagram exported from Visual Paradigm;*

*(4) Please make sure the resolution of the diagram is high enough so that any text appears in this diagram can be easily read.*

**P5-5** Implementation (OF1/2)**:**

Boost Up / ~~Spawn Waves~~

|  |
| --- |
| <insert your gameplay screen capture with explanations here>  C:\Users\Anthony\Desktop\ScreenHunter_04 Apr. 12 20.57.jpg  After the player collides with the “Su Boost Up”, the speed of the ship will be increased.  C:\Users\Anthony\Desktop\ScreenHunter_02 Apr. 12 20.56.jpg  After the player collides with the “DU Boost Up”, the player will shoot 3 bolt at each shoot.  C:\Users\Anthony\Desktop\ScreenHunter_03 Apr. 12 20.57.jpg  After the player collides with the “HP Boost Up”, the player will recover to full hp. |

~~Boost Up~~ / Spawn Waves

|  |
| --- |
| <insert your gameplay screen capture with explanations here>  C:\Users\Anthony\Desktop\1.jpg  The current level will show on the top mid of the screen. Enemy type may be different after the level up.  C:\Users\Anthony\Desktop\4.PNG  The difficulties will increase when the level increase. The damage of enemy bolt from 10 become 11 in this situation.  C:\Users\Anthony\Desktop\5.PNG  When the level up, there are 2 difficulties enhancement. First one is enemy damage will increase depended on the level value, second one is the number of enemy will also increase every wave.  C:\Users\Anthony\Desktop\6.PNG  The game will end in level 10 and the high score will be shown. |

**NOTE:** *(1) Please make short but clear explanations for the screen captures where you think is necessary;*

*(2) Providing the information above is critical to the Agile methodology (as well as your grades), as you need to get quick and clear feedbacks from your stakeholders, saying the teaching team in this particular case;*

*(3) Please make sure the resolution of the diagram is high enough so that any text appears in this diagram can be easily read.*

**P5-6** Refactoring:

|  |
| --- |
| *Code to be refactored:*  Done\_GameController.cs  …  if(level==5){ // increase dark space size    targetScale = 30f;// darkregion target scale size  shrinking = true;  }  if(level==6){ // increase dark space size  targetScale = 60f;// darkregion target scale size  shrinking = true;  }  if(level==7){ // increase dark space size  targetScale = 200f;// darkregion target scale size  shrinking = true;  }  if(level==8){ // increase dark space size  targetScale = 400f;// darkregion target scale size  shrinking = true;  }  if(level==9){ // increase dark space size  targetScale = 800f;// darkregion target scale size  shrinking = true;  }  ...  2. In Done\_PlayerController, line 35 has 2 vars call speedUpTimer and damageUpTime to controll the boost up item effect time.  3 In Done\_DestroyByContact, line 75, is the part of code to control how many hp deduct according to the level value. |
| *Justification:*  Done\_GameController.cs  …  if (level >= 5)  { // increase dark space size  targetScale = Mathf.Pow(2, level - 5) \* 50;// darkregion target scale size  shrinking = true;  }  ...  2. It should be a value from boostUp item class and when user contact it, the value can pass to Done\_PlayerController. This improvement can may the boost up item more flexible to create and change attribute.  3. This part should be a new public var in game controller, it is a value can affect the difficult. For further maintenance, development, or adding new function (such as a difficult for user to choose), this kind of refactored is necessary. |

**NOTE:** *(1) In order to obtain all possible points for P5-6 Refactoring (3 bonus points), please identify at least 3 different locations in the source code where refactoring is needed;*

**P5-7** Checklist (for project final):

|  |  |
| --- | --- |
| O | *Final Report:* use case diagram for the original game |
| O | *Final Report:* Use case diagram for the enhanced game |
| O | *Final Report:* Class diagram for the original game |
| O | *Final Report:* Class diagram for the enhanced game |
| O | *Final Report:* Sequence diagrams for the original game |
| O | *Final Report:* Sequence diagrams for the enhanced game |
|  | *Final Report:* Evidence and demonstration of OP1/2 (as bonus) |
|  | *Final Report:* Refactoring and justification (as bonus) |
|  | *Presentation:* Final presentation slides |
|  | *Presentation:* Enhanced game runnable on your demo computer |
|  | *Final Delivery:* Builds for Windows **AND** Mac OS uploaded to Dropbox and Canvas |

***< End of Phase 5 (Final) report>***