Open project in Unity : add scenes to build setting , main scene is MainMenu .

**SERVER :** openDEngine\_Photon \DEnginePhoton.sln visual studio 2012

HeroDB : load,save from database.

Lib Network Client/server : DEngine.PhotonFX , DEngine.Unity.

**Lib common** :

**1-gameAward** : information about reward s: silver , gold +exp User , + Exp Hero , items , roles…

**2-gameBattle** : info battle base : battle type (pvp -Player vs Player ,pve-Player vs monsters in waves ,pva-Player vs AI Player) , user1 , user2 .

**3-gameEnum** : define enums of game.

**4-GameItem** : a item defined in game . It is the information class of each itembase is defined in the game, load in dbo.itembase

**5- GameRole** : a role defined in game ,role(character) : heroes , mobs(monster,elite),rune(tower) ,boss. . It is the information class of each character is defined in the game, load in dbo.rolebase

+ Base start:

Ex:

Type = role.Type;

Class = role.Class;

AssetPath = role.AssetPath;

Description = role.Desc;

Strength = role.Strength;

Agility = role.Agility;

Intelligent = role.Intelligent;

MoveSpeed = role.MoveSpeed;

AttackRate = role.AttackRate;

+ Items were equip to the character

+List of skills of role(base skill , extra skill ).

**6-GameSkill** : a skill defined in game . It is the information class of each skill is defined in the game, load in dbo.skillbase

**7-GameUser**: info of user : list of heroes , list of items, mail, online rewerd, gold , silver , honor , avatar, id mission …

**8-gameZone** : each channel management its players, each channel is responsible for calculating gameplay for players

**9-Global:** data manager in game :

GameRoles list :heroes, mob(monster,Boss) , GameHeroes list : Heroes , GameMobs list :monster,boss,rune ,GameItems list, GameSkills list , ChargeShop…

10-RoleSkill : Skill class of a Role : SkillId, GameSkill, UserRole,cost value…

**11-ShopItem:** item class in Shop .

**12-UserItem** : each item of the user is a useritem.

**13-UserRole** : a role of user .

***A-Server:***

**1- Operation folder** : Info of packets

BattleOperation : info of battle packet.

….

**2- handle** folder : receiver network event : DefaultHandlerWorld (default receiver of master) , DefaultHandlerZone (default receiver of Zone)

2.1- BattleHanlde : network event about battle (PVA , PVP, mission…): create , ready , resume match , abort , move , skill , hit…

2.2- ChargeCashHandler: network event about charge payment

2.3- RolesListHandler : network event require : list of roles(heroes) , list of items . Ex: Load inventory.

2.4- RoleUpdateHandler: network event update info of a role from User.

2.5- SendChatHandler : network event chat.

2.6- ShopBuyHandler : network even buy a package

2.7- SignInHandler : network even login

2.8- SignOutHandler: network even logout

2.9- UsersListHandler : network even require : list of users by filter type (arena mode , pillage mode)

2.10- UserUpdateHandler: network event updates info of User.

**3- Service** Folder: a service is created when the user requests to create a battle , users will save pointer their battle.

3.1- BattleService : calculate the user's actions in a battle (Init, action , skill,hit , EatItem ,leave , update, sync …)

3.2- GamePlayService: Rewards in battle , drop items when killing monsters.

3.3- MissionService: Load mission config, waves , mob(monster , boss,rune) , reward, gameplay…

**BattlePVA (fight with AI Player)** : inheritance BattleService , call OnBattleEnd for PvA battle type

**BattlePVE** (**fight with monster , Boss in many wave ):** inheritance BattleService, check the status of the wave, new wave generated at the end of the old wave .

**BattlePVP (player vs player)**: inheritance BattleService, calculated for rewards when opponent player lose.

**WorldService (main script master)** : network event of master server .

**ZoneService(main script zone)**: network event of players in Zone.

***B -Client :***

Scene :

1. MainMenu : Main Scene . Select language

Main script : UIMainMenuManager.cs

1. Servergame : select master server , requires channel zone list

2.1 Main Script : UIServerMenuManager.cs (gameobject UIServerRoot->Chanels), ServerGameController.cs (network event of server and zone)

1. Zone : select channel manage for the calculation.

3.1 MainScript : UIZoneMenuManager.cs , ServerGameController.cs (network event)

1. Login : Register , Sign In.

4.1 Main Script : UILoginManager.cs và LoginController.cs(network event)

1. WorldMap : main functions of game.

5.1 Main Script : UIWorldMapManager.cs , WorldMapController.cs (network event).

1. BuyHero : Summon Hero.

6.1 Main Script : UIBuyHeroManager.cs , BuyHeroController (network event), UIBuyHeroUIEvent (UI event)

1. ChargeShop : Shop : items and buy gold.
2. Hero :inventory - herolist , items ,...of user.
3. HeroUpgrade : transfer experience from heroes to hero Other.
4. HeroUpStar : level up for stars of Heroes .
5. Itemupgrade : level up for attributes of ruby and items .
6. PVEMap :UI mission mode , fighting with each mission and unlock.(pve mode)
7. Arena :UI Player vs Player to ranking (pvp mode)
8. Battle : gameplay scene.

16.1 Main script: TouchController.cs , gameplaymanager.cs , skillmanager.cs , UIBattleManager.cs , BattleContoller.cs(network event)

1. Social : UI friends , mail system.

Mission config : PhotonSDK\deploy\HeroOnline\Config\missionconfig.xml

**1-Drop items in each mission :**

<WorldDrops>

<WorldDrop Level="1">// mission id=1

<DropItems>0;49;50;51;31;32;36;37;41;42;52;87;97;107</DropItems>

(id list of items)

<DropRates>92.28;2.28;0;0;1.90;0;0.90;0;1.90;0;0.50;0.17;0.06;0.02</DropRates>(drop rate of items,respective in the line<DropItems >)

</WorldDrop>

<WorldDrop Level="n">// mission id=n

...n

</WorldDrop>

<WorldDrop Level="20">// mission id=20

<DropItems>0;49;50;51;31;32;36;37;41;42;52;87;97;107</DropItems>

<DropRates>91.63;2.93;0;0;1.90;0;0.90;0;1.90;0;0.50;0.17;0.06;0.02</DropRates>

</WorldDrop>

</WorldDrop>

***PVE scenario***:

1-<Mission Level="1" Energy="600" UserExp="100" RoleExp="250" Silver="20" EquipId="11">

+Mission Level="1" : level of mission.

+Energy="600" : energy required to join for each hero in this mission

+UserExp="100" : reward exp of user when complete this mission.

+RoleExp="250" : reward exp of each hero when complete this mission

+Silver="20" : reward silver of user

+EquipId="11" : reward item with itemid=11 when complete this mission

2- <Wave Grade="1" Time="0" Mob1="4;5;1007;1005" Mob2="1;1;1003" Mob3=""/>

***+Wave grade :*** ***grade is*** star of mobs(monsters,boss) and level of mobs= level of mission) .

**+Time :** time (second) wave generated since the previous wave appear.

if time =15 : then the next 15 seconds since the previous wave generated , created this wave.

time=0 : all mobs of previous wave is killed ,created this wave.

.

**+Mod1, Mod2 , Mod3 :** group of mob(monsters,boss) generated in a wave.

if Mob3="" : not exist this group in wave.

+Mob1="4;5;1007;1005" :

4-5: random from 4 to 5 mobs(monsters,boss) generated , 5=5: 5 monsters always generated .

1007;1005;n… :id list of mobs (monsters,boss) generated , each time creating a monster, the system will randomly monsters in this list

**ROLE AND SKILL :**

Dbo.RoleBase : Roles base in design, attribute of each role

Dbo.RoleExtra : Skills of each Role

Dbo.SkillBase: Skills base , attribute of each skill

**1-Create a Role :**

Open RoleBase table : insert record , input value

1.1 RoleID : ID of Role.

1.2 Name : Name of Role .

1.3 Desc : descriptions of characters.

1.4 Type : Group of Role : hero , boss,mob…

public enum RoleType

{

Default = 0,

Hero,//hero of User

Mob,// normal monsters

Elite, //leader monsters

Boss,//Hero Boss

Hostage,//

HiredHero,

}

1.5 Class hero : warrior , healer , ranger, Mage, Tanker.

public enum RoleClass

{

None = 0,

Warrior,

Tanker,

Assasin,

Ranger,

Elf,

Sharpshooter,

Mage,

Sorceres,

Healer,

Count,

}

1.6 AssetPath : path to load prefab for character in asset

1.7 Strength : attribute related to Max HP and Strength CritPower (power of critical= increase the percent of the value of attacks).

UserRole.cs-> InitAttrib()

1.8 Agility Attribs : attribute related to AttackValue (damage of physics att(default skill) , CritRate(rate of cri attacks appear every attack).

UserRole.cs-> InitAttrib()

1.9 Intelligent Attribs : attribute related to Mp , defense.

UserRole.cs-> InitAttrib()

1.10 MoveSpeed : move speed.

1.11 AttackRate : Attack Speed.

1.12 Skills : ID skill of physics att.

Hero Prefab : controller.cs (processing of action event character) , settingaction.cs (processing time of animation to call active skill in ActionEventNameclass ) ,ActionEvent Nameclass–ranger-healer-melee.cs (call skill of class), Statemanager.cs( processing strategy , state control-thinking of the current state, will do?), Touchcontroller.cs (input control event)

Statemanager->update cur state->controller

Touchcontroller->controller

**2- Create a Skill : Open SkillBase**

Insert Record

2.1 SkillID : Set Id skill . (create skills prefab with name skill\_099 nếu id=99)

2.2 Name : Name skill.

2.3 Desc: descriptions of skill.

2.4 SkillType : skill type : physics skill , Active skills , Aura (auto active)

2.5 TargetType : impact on target

Self,// itself hero

AllyOne,//1 hero of team

AllyGroup,// all hero of team

EnemyOne,//1 enemy

EnemyGroup,//all enemy

AreaEffect,// all enemies within a radius close to the target AreaAroundSelf,// all enemies within a radius close to itself

SuicideBombArea,

SuicideBombFull,

2.6 : CostType : Value type require for active (HP-MP value , HP-MP percent, max Hp-mp Percent)

2.7 : CostValue :value require.

2.8 : CoolTime : activation time for next time.(second)

2.9 : CastRange : The distance required for the hero to target, the value 0 is not checked distance.

2.10 : Effectrange : distance is affected. value 0 is only a target .

2.11 : EffectType : Id of additive effect.

public enum EffectType

{

None,

Stun,

Blind,

Silent,

Shield,

Freeze,

Poison,

SpiritBurn,

Bleed,

Cripple,

Lame,

Break,

Cleansing,

BattleMage,

Attackup,

ATSup,

MVSup,

ATSdown,

MVSdown,

Slow,

Dizzy,

Hitrateup,

Hitratedown,

CRTRup,

CRTRdown,

CRTPup,

CRTPdown,

SuckHP,

SuckMP,

Blockup,

Blockdown,

Evadeup,

Evadedown,

Haste,

Feedback,

Hpregenup,

Mpregenup,

Slow2,

ConvertMP,

Bloodlust,

Rage,

}

2.12 : Effectmask :

HitRate = 1, missed by the attribute of accurately attack itself.

Evasion = 2, affected by the ability of evasion of opponent

Critical = 4,

Block = 8,

Feedback = 16,

2.13 : Duration : duration of effect skills.

2.14 SrcAtt01,DestAtt01 ,Value01,… SrcAtt05,DestAtt05 ,Value05 : list the attributes of skills

SrcAtt01 : attribute type .( attribute type to calculate of user).

DestAtt01 : attribute type .(attribute type to calculate of target).

Value01 : value of skill .

public enum AttribType

{

None,

Strength,

Agility,

Intelligent,

HPValue,

MPValue,

HPPercent,

MPPercent,

HPMaxValue,

MPMaxValue,

HPMaxPercent,

MPMaxPercent,

HPRegenValue,

MPRegenValue,

HPRegenPercent,

MPRegenPercent,

AttackValue,

AttackPercent,

DefenceMetal,

DefenceWood,

DefenceWater,

DefenceFire,

DefenceEarth,

DefenceValue,

DefencePercent,

AttackSpeedPercent,

MoveSpeedPercent,

SkillDisable,

ItemDisable,

EnergyMax,

EnergyRegen,

HitRate,

EvasionRate,

BlockRate,

CriticalRate,

CriticalPower,

ConvertOutputDamageToHP,

ConvertOutputDamageToMP,

ConvertInputDamageToMP,

FeedbackDamage,

RoleExpValue,

RoleEngValue,

BuffClear,

DebuffClear,

IgnoreDefense,

ManaShield,

DecreaseDamage,

AttribCount,

}

**3-Set skills cho hero : Open RoleExtra table**

Insert record .

Role ID : character type (set skills for this character)

ElemId : Element of character (gold, wood,water,fire , land) .

|  |  |
| --- | --- |
|  |  |

Skills : 6,50 (set 2 skill active of character , ID skill : 6 and 50 in skillbase table).