X - TD

SOEN 6441 - Build 3

Team 10

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Outline

Outline

Core

Logic / Run / Storage / Log

Display

Parallel / MapView / InspectorView / Scene

Outline
Core

Play

Play
PlayManager

Path

MapPath
PathManager
PathValidator

Run

Timer
TimerListener

Map

GridMap
MapItem
MapPoint
MapItemSelector
GridMapItemsListener

Concrete Path Validator

ConnectionValidator
EndPointQuantityValidator
RoadQuantityValidator
StartPointQuantityValidator

Persistent

IArchive
ArchiveCenter

Log

Log
Logger

Outline
Core

Tower
Tower
TowerManager
TowerManagerFactory

Concrete Towers
BottleTower
IceTower
SplashTower
SunTower
MoonTower
EnergyTower

Effect
AffectableValue
Effect

Concrete Effects
SlowEffect
DamageEffect
SplashEffect
MotivateEffect

Critter
Critter
CritterWave
CritterMultiplier
CritterManager
CritterManagerFactory

Strategy
Strategy
EnableStrategy

Outline
Display

Parallel Basic

Window

View

ViewFlow

Parallel Components

Button

Label

TextField

TextView

ImageAssets

Parallel Addition

Command

CommandButton

Outline
Display

Grid View

GridView

GridViewCell

GridPoint

GridViewSelectionListener

Inspector View

IInspector

InspectorView

Map View

MapView

MapItemCell

MapItemView

Concrete Map Item View

SceneryView

RoadView

TowerView

CritterView

Scenes

MainScene

NewMapScene

EditingScene

RankingScene

NewGameScene

PlayingScene

Features

Critter

```
<CritterWave>
    <timeGap></timeGap>
    <critters>
        <Critter>
            <hp></hp>
            <speed></speed>
            <imageName></imageName>
        </Critter>

        ...
    </critters>
</CritterWave>
```

Critter

```
<CritterWave>
    <timeGap></timeGap>
    <critters>
        <Critter>
            <hp></hp>
            <speed></speed>
            <imageName></imageName>
        </Critter>

        ...
    </critters>
</CritterWave>
```

Critter

```
<CritterWave>
    <timeGap></timeGap>
    <critters>
        <CritterMultiplier>
            <critterName></critterName>
            <hpMultipier></hpMultipier>
            <speedMultipier></speedMultipier>
        </CritterMultiplier>

        ...
    </critters>
</CritterWave>
```

Critter

critter_x.xml

CritterWave

CritterMultiplier

Critter

CritterManager

Effect

Effect & Ability

SlowEffect -> Frozen Effect / Hypnotize Effect

PoisonEffect

MotivateEffect

Effect

Permanent damage

Temporary Impact

AffectableValue

```
+ originalValue:double
+ affectedValue:double
```

AffectableValue

```
+ originalValue:double
+ affectedValue:double

//critter
private int totalHp;
private int hp;
private AffectableValue speed;

private int reward;
private int stealAmount;
```

AffectableValue

```
+ originalValue:double
+ affectedValue:double

//critter
private int totalHp;
private int hp;
private AffectableValue speed;

private int reward;
private int stealAmount;

//tower
private AffectableValue range;
private AffectableValue damage;
private AffectableValue cdTime;
```

MapItemSelector

```
getCritter(source:MapItem, range:double, amount:int, strategy:String)
```

MapItemSelector

+ items:[MapItem]

+ filterByCircularArea(origin:MapPoint, radius:double):MapItemSelector
+ filterByType(types:[Class]):MapItemSelector
+ filterByAmount(amount:int):MapItemSelector
+ filterByExcluding(item:MapItem):MapItemSelector

+ sortByDirectlyClosestToPoint(point:MapPoint):MapItemSelector
+ sortByOnPathClosestToEndPoint():MapItemSelector
+ sortByWeakest():MapItemSelector
+ sortByStrongest():MapItemSelector
+ sortByRandom():MapItemSelector
+ sortByStrategy():MapItemSelector

MapItemSelector

```java
MapItemSelector selector = map.getItemSelector();
List<MapItem> targets = selector
    .filterByType(Critter.class)
    .filterByCircularArea(this.getLocation(), ...)
    .sortByStrategy(this.getStrategyName(), this)
    .filterByAmount(1)
    .getItems();
```

Archive

```
<GridMap>
    <startPoints>
        <MapPoint x="" y="" /> ***
    </startPoints>
    <endPoints>
        <MapPoint x="" y="" /> ***
    </endPoints>
    <paths>
        <MapPath>
            <locations>
                <MapPoint x="" y="" /> ***
            </locations>
        </MapPath> ***
    </paths>
</GridMap>
```

Archive

```
<GridMap>
    <startPoints>
        <MapPoint x="" y="" /> ***
    </startPoints>
    <endPoints>
        <MapPoint x="" y="" /> ***
    </endPoints>
    <paths>
        <MapPath>
            <locations>
                <MapPoint x="" y="" /> ***
            </locations>
        </MapPath> ***
    </paths>
</GridMap>
```

Archive
Build a bridge between object and xml elements

IArchive

encode - object to xml element

decode - xml element to object

Adaption

MapPoint, MapPath, GridMap, Play

Tower Manager, Tower, Tower Subclasses

Critter, CritterWave, CritterMultiplier

Logger, Log

Archive
Build a bridge between object and xml elements

```
<GridMap>
    <startPoints>
        <MapPoint x="" y="" /> ***
    </startPoints>
    <endPoints>
        <MapPoint x="" y="" /> ***
    </endPoints>
    <paths>
        <MapPath>
            <locations>
                <MapPoint x="" y="" /> ***
            </locations>
        </MapPath> ***
    </paths>
</GridMap>
```

Archive
Build a bridge between object and xml elements

```xml
<GridMap>
    <startPoints>
        <MapPoint x="" y="" /> ***
    </startPoints>
    <endPoints>
        <MapPoint x="" y="" /> ***
    </endPoints>
    <paths>
        <MapPath>
            <locations>
                <MapPoint x="" y="" /> ***
            </locations>
        </MapPath> ***
    </paths>
</GridMap>
```

Archive
Build a bridge between object and xml elements

```java
public class NameForArchiving{
    public static final String Class = "MapPoint";
    private static final String X = "x";
    private static final String Y = "y";
}


public void decode(Element element) {
    this.x = Double.valueOf(element.attributeValue(NameForArchiving.X));
    this.y = Double.valueOf(element.attributeValue(NameForArchiving.Y));
}
public Element encode() {
    Element element = new DefaultElement(NameForArchiving.Class);
    element.addAttribute(NameForArchiving.X, Double.toString(x));
    element.addAttribute(NameForArchiving.Y, Double.toString(y));
    return element;
}
```