

Space Invaders

game

Ass7Game- starts the game.

gamecontrol

Gameflow- run the game infinitely until the player loses.

Gamelevel- has all the information to run the level.

GroupOfAliens- the formation for all the aliens blocks to move as one object.

MenuAnimation- the animation we use for the menu.

PauseScreen- for pausing during the game.

HightScoreTable- for showing the result of the high score.

EndScreen- whenever the game is finish and we show the end screen (win or lose).

AnimationRunner- Controls all the animation we run and display on the screen.

ScoreInfo- for calculating the score and sum it.

Choose- the class is for generic type for choose of player action in the menu.

KeyPressStoppableAnimation- for all the keys we presses during the game, even multiple times.

CountdownAnimation- the animation that starts before each turn.

CollisionInfo- the information of the collision we hold for each collision between objects.

GameEnvironment- hold all the environment objects.

gameobjects

Constants- for all the constants information we have and use for several classes all over the project.

Block- used on the shield and the aliens formation.

Ball – A ball object that is used for bullets shooting.

Paddle- the spaceship which we can shoot on aliens with it.

BlockRemover- the listeners whenever a block was hit and needed to be removed.

ScoreTrackingListener- whenever we got a score we need to sum .

BallRemover- the listeners whenever a ball hit and needed to be removed.

EnemyBackground- the background for the level.

HighScoresAnimation- – the high scores animation we display.

Counter- counter object for counting.

SpriteCollection- holds all the sprites in the game.

Velocity- ball velocity object.

ScoreIndicator- shows the score of the player on the screen.

LivesIndicator- show the player's lives count.

NameIndicator- show the player's name level.

creationfromfile

DefaultLevelInformation- the level information we need for level.

ImageCreation- for creating an image.

DrawFromColor- to draw objects with given color.

DrawFromImage- to draw the image given.

Background- the background we use for some animations.

geometry

Line- use to build lines.

Point- the – simple point object with (x,y) coordinates.

Rectangle – a rectangle object.

levels

EnemyLevel- the enemy level class which creates all the elements we need for the level.

interfaces

LevelInformation- an interface for all the information we need for creating a level.

HitListener- for all the listeners classes we need to know when something happens.

Drawable- an interface to know which class I can draw.

DrawingObjects- an interface to draw objects.

Menu- an interface for all the menu functions.

Task- an interface with generic task.

Animation- an interface for all the animations we need to display during the game.

Sprite- interface for drawn objects.

HitNotifier-interface to notify when things happened.

Collidable- interface for all the objects that can be collidable.

Description

The Aliens Formation– created an two dimension array which has rows and columns- together creates a table of all the aliens which can move together as a stick formed.

In addition- added the function for random shooting from each of the alien inside the form of the array. Each time the form moves together for each block inside it, so an addition check for if a column is missing was necessary to implement. We can seek for the most Bottom alien/ most right alien/ most left alien/ and regroup the form if necessary. Also the form of aliens has speed which grow whenever they hit the wall or new harder level begins.

The shields- the shields are build in a specific location with 1 hit until they destroyed. Their height is saved to constant, and is the limit for the aliens to get closer to spaceship.

Shot By Aliens- as described above, we first seek for the most bottom alien in each row of the two dimension array list. Then, we get a random number between the bottom aliens we have left and we make a ball to move down to spaceship direction.

Shot By Player- Added function to the paddle which can release a ball from it's center to the aliens direction. We also checks according to the given dt in the DoOneFrame that the time passed from the last shoot is enough and that we can make a new shoot from the spaceship.