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Interfaces and classes:

All the classes and interface from ass6 remain the same :

Animation:

An interface with the functions which describe the animations.

AnimationRunner:

A class which run the animation loop.

CountdownAmimation:

A class which counts down from 3 to 1 in the game, before each round starts.

Counter:

A class which holds information about a given counter.

EndScreen:

A class which displays the end screen when the player finish the game.

HighScoresAnimation:

A class which displays the high score animation.

KeyPressStopabbleAnimtion:

A class which “uses” a key to end an animation, the class is a decorator pattern.

MenuAnimation:

A class which displays the menu in the start of the game.

PauseScreen:

A class which pause the game, id the player press "p".

Collidable:

An interface with the functions to get the collidable object and the information about the collision info, the ball which collides at it and it's velocity.

Block:

A class which holds the information about a block game.

Space-ship:

A class which holds the information about the Space-ship game.

Rectangle:

A class which defines the limit of the created block.

Task:

An interface with function that run a task.

CollisionInfo:

A class which holds the info about the collision of an object with a ball game.

HighScoreTable:

A class which creates a new or load a HighScoresTable.

Line:

A class which creates a new line.

Point:

A class which creates a new point.

ScoreInfo:

A class which holds info about a specific score, name and the score itself.

Velocity:

A class which creates and updates a new / given velocity speed.

GameEnvironment:

A class which holds the info about all the objects that the ball can hit in the game.

GameFlow:

A class that run the game level and sets a new alien level.

GameLevel:

A class which creates the “game” we are playing. Add all the objects that are in the game, the aliens, the shield, the borders and the space-ship.

HitNotifier:

An interface which indicates if an object being hit.

HitListener:

An interface which gives the objects the implement it to notify they are being hit.

BallRemover:

A class which is responsible of removing a ball from a game .

BlockRemover:

A class which is responsible of removing a block from the .

ScoreTrackingListener:

A class which is responsible of hold the points game.

Sprite:

An interface which has the functions to draw the object that implements to this interface.

Ball:

A class which creates a new ball game.

LivesIndicator:

A class which is responsible of displaying the current life left in the game.

ScoreIndicator:

A class which is responsible of displaying the current score in the game.

SpriteCollection:

A class which holds the info about all the sprites in the game.

DrawLevelName:

A class which in charge of draw the level name.

MagN:

A class for magic numbers for easy reading code.

Background:

The interface Background for the background block.

BackgroundColor:

The class implements Background interface that in charge of draw the block background color.

BackgroundImage

The class implements Background interface that in charge of draw the block background color.

New class:

- a. **AlienMovementAndSpeed** - the class is in charge of move the aliens position before drawing them, sets the aliens speed, sets to the alien start position, and find a random alien to shoot a ball. The class hold list of remain aliens and list of start amount aliens.
- b. **Alien** - the class is in charge of hold the alien information: speed, start position and alien Block.
- c. **PressShootCheck** - the class is in charge of check if the player press space to shoot space-ship ball.
- d. **ShieldGame** - the class is in charge of holds the remain shield blocks and create them.
- e. **AliensLevel** - the class is in charge of hold the all information of the alien level.
- f. **Ass7Game** – create a **GameSetUpAndRun** object that run the game.
- g. **GameSetUpAndRun** – create the game and the menu game and run it.

3. The GameLevel and GameFlow classes have been changed to fit the space invaders game.

(a) the Aliens formation:

each alien has a class that holds the alien information, and the alien level holds a AlienMovementAndSpeed object that hold a list of aliens level, every hit on the alien the BlockRemover class check if the hitter ball is an alien ball or space-ship ball for indication to remove the alien from the game and from the AlienMovementAndSpeed class. Every new level there is a function in the AlienMovementAndSpeed class that sets the amount of alien's game.

(b) the shields:

The ShieldGame class hold the all shields game, every hit on the shield block the class BlockRemover class check if the hitter ball is an alien ball or space-ship ball for indication to remove the shield block from the game and from the ShieldGame class. Every new level there is a function that sets the amount of shields game.

(c) shots by aliens:

every call to the dooneframe function the game level class call the function getRandomAlienToshoot in the AlienMovementAndSpeed class to get a random alien to shoot, and after that the gameLevel class call the function alienShoot to shoot every 0.5 second.

(d) shots by player:

every call to the doOneFrame function the game level class call the checkIfTheUserPress in the PressShootCheck class, to check if the player presses the space key and every 0.35 second the function returns a Boolean member formation indication, and after that the gameLevel class call the function shoot to shoot a space-ship ball.