Screen Cast Link

Readme.md

- Factory pattern for farms
  Requirements Fullfilled by Factory Pattern
  - A world must start with at least 1 farm
  - Farms can be of 3 different types (Hybrid, Animal, Crop)
  - Farms start with up to 6 farmers, more being hired each cycle
  - Farms only gain money after 24 hours have cycled
  - Farms gain money based their money skill

- Observer to notify different elements of each tick and how they should act accordingly
  - Runs on cycles based on user input
  - Farms automatically upgrade when required currency is obtained
  - New farms are created when a farm reaches greater than 10 population
  - Notifies all farms of day or night rotation, leveling up, gaining farmers, and increasing gold.

- Strategy Pattern to define the Barn and Crops
  - Crops are harvested every 3 days
  - Predators come out at night and kill animals or crops at a 10% chance
  - Animals breed every 4 cycles if there are two and they aren't killed
  - 10% of money is saved and either spent on animals or crops depending on the farm

Travis.CI Screenshot

KellyPetrone / SER316DesignPatterns   build passing

Current   Branches   Build History   Pull Requests   Build #37

More options ≡

✓ master Adds test reports to git   #37 passed   ↻ Restart build

○ Commit 53ff55a ⬈   🕐 Ran for 1 min 18 sec   🐛 Debug build
⇅ Compare bbbde97..53ff55a ⬈   📅 6 minutes ago
⅄ Branch master ⬈

🔵 Kelly

⚙ </> JDK: oraclejdk11 Java
    🖥 AMD64

Job log   View config

☒ Remove log   ↓≡ Raw log

Using custom target: /home/travis/oraclejdk11   0.06s
▶ 1 Worker information   worker_info
   6   0.00s
  79 Build system information
  80 Build language: java
  81 Build dist: xenial
  82 Build id: 161909485
  83 Job id: 323178211
  84 Runtime kernel version: 4.15.0-1055-gcp
  85 travis-build version: 99f83c6b
  86 Build image provisioning date and time
  87 Tue Feb 18 10:44:28 UTC 2020
  88 Operating System Details
  89 Distributor ID: Ubuntu
  90 Description: Ubuntu 16.04.6 LTS
  91 Release: 16.04
  92 Codename: xenial
  93 Systemd Version
  94 systemd 229
  95 Cookbooks Version
  96 9a55ad7 https://github.com/travis-ci/travis-cookbooks/tree/9a55ad7
  97 git version
  98 git version 2.25.0
  99 bash version
 100 GNU bash, version 4.3.48(1)-release (x86_64-pc-linux-gnu)
 101 gcc version
 102 gcc (Ubuntu 5.4.0-6ubuntu1~16.04.12) 5.4.0 20160609
 103 docker version
 104 Client:
 105   Version: 18.06.0-ce
 106   API version: 1.38
 107   Go version: go1.10.3
 108   Git commit: 0ffa825
 109   Built: Wed Jul 18 19:11:02 2018
 110   OS/Arch: linux/amd64
 111   Experimental: false
 112
 113 Server:
 114   Engine:
 115   Version: 18.06.0-ce
 116   API version: 1.38 (minimum version 1.12)
 117   Go version: go1.10.3   Top ▲

Jacoco Test Report, Spotbugs, Checkstyle, Junit Screenshots

[SpotBugs](#) Report

Project Information

Project: root project 'SER316DesignPatterns' (main)

SpotBugs version: 4.0.1

Code analyzed:

- /Users/Kelly/Desktop/Arizona State University/SER316/Week 5/SER316DesignPatterns/build/classes/java/main/BarnStrategy/Crop.class
- /Users/Kelly/Desktop/Arizona State University/SER316/Week 5/SER316DesignPatterns/build/classes/java/main/BarnStrategy/Barn.class
- /Users/Kelly/Desktop/Arizona State University/SER316/Week 5/SER316DesignPatterns/build/classes/java/main/BarnStrategy/Strategy.class
- /Users/Kelly/Desktop/Arizona State University/SER316/Week 5/SER316DesignPatterns/build/classes/java/main/BarnStrategy/HybridBarn.class
- /Users/Kelly/Desktop/Arizona State University/SER316/Week 5/SER316DesignPatterns/build/classes/java/main/FarmTest.class
- /Users/Kelly/Desktop/Arizona State University/SER316/Week 5/SER316DesignPatterns/build/classes/java/main/TickObserver/FarmData.class
- /Users/Kelly/Desktop/Arizona State University/SER316/Week 5/SER316DesignPatterns/build/classes/java/main/TickObserver/Subject.class
- /Users/Kelly/Desktop/Arizona State University/SER316/Week 5/SER316DesignPatterns/build/classes/java/main/FarmFactory/AnimalFarm.class
- /Users/Kelly/Desktop/Arizona State University/SER316/Week 5/SER316DesignPatterns/build/classes/java/main/FarmFactory/Farm.class
- /Users/Kelly/Desktop/Arizona State University/SER316/Week 5/SER316DesignPatterns/build/classes/java/main/FarmFactory/HybridFarm.class
- /Users/Kelly/Desktop/Arizona State University/SER316/Week 5/SER316DesignPatterns/build/classes/java/main/FarmFactory/CropFarm.class
- /Users/Kelly/Desktop/Arizona State University/SER316/Week 5/SER316DesignPatterns/build/classes/java/main/FarmFactory/FarmFactory.class
- /Users/Kelly/Desktop/Arizona State University/SER316/Week 5/SER316DesignPatterns/build/classes/java/main/Universum.class

Metrics

591 lines of code analyzed, in 13 classes, in 4 packages.

Metric	Total	Density*
High Priority Warnings		0.00
Medium Priority Warnings		0.00
Total Warnings	**0**	**0.00**

(* Defects per Thousand lines of non-commenting source statements)

Contents

- [Details](#)

Summary

Warning Type	Number
Total	0

Warnings

Click on a warning row to see full context information.

Details

SER316DesignPatterns

Element	Missed Instructions	Cov.	Missed Branches	Cov.	Missed	Cxty	Missed	Lines	Missed	Methods	Missed	Classes
FarmFactory		97%		93%	4	45	1	173	0	15	0	4
default		92%		75%	3	14	6	71	1	8	0	2
BarnStrategy		100%		92%	10	84	0	192	0	15	0	3
TickObserver		100%		100%	0	9	0	29	0	5	0	1
Total	39 of 2,182	98%	17 of 218	92%	17	152	7	465	1	43	0	10

Couldn't test part of main that requires input from the user.

Class FarmTest

4	0	0	1.822s
tests	failures	ignored	duration

100%
successful

[Tests] [Standard output]

Tests

Test	Duration	Result
factoryTest	0.001s	passed
observerTest	1.799s	passed
strategyTest	0.017s	passed
testMain	0.005s	passed

Standard output

```
This is an Crop Farm
Currency is currently $358
This farms current level is 1
An upgrade currently cost $1200
There are currently 2 farmers
The maximum farmer capacity is 10
The crop skill level of this farm is 1
The money skill level of this farm is 1
This farm has existed for 0 days

This is a Crop Farm, it has crops and animals
acres of corn:1 tobacco:1 potato:1
Are there crop predators? false

This is a Hybrid Barn, it has crops and animals
Horse:167 cow:175 pig:161 chicken:211 dog:139
Are there animal predators? false
This is a Crop Farm, it has crops and animals
acres of corn:178 tobacco:179 potato:182
Are there crop predators? false

This is a Hybrid Barn, it has crops and animals
Horse:251 cow:224 pig:235 chicken:316 dog:226
acres of corn:515 tobacco:517 potato:517
Are there crop predators? false
Are there animal predators? false
main
This is an Animal Farm
Currency is currently $28
This farms current level is 1
An upgrade currently cost $1200
There are currently 0 farmers
The maximum farmer capacity is 10
The herd skill level of this farm is 1
The money skill level of this farm is 1
This farm has existed for 0 days

This is a Hybrid Barn, it has crops and animals
Horse:1 cow:1 pig:1 chicken:1 dog:1
Are there animal predators? false
Would you like to tick another day/night? If yes, enter 'Y', else enter 'N'

 Farm 0
This is an Crop Farm
Currency is currently $212
This farms current level is 1
An upgrade currently cost $1200
There are currently 2 farmers
The maximum farmer capacity is 10
The crop skill level of this farm is 2
The money skill level of this farm is 2
This farm has existed for 0 days
```

▼ ✔ FarmTest	1 s 358 ms
✔ factoryTest	0 ms
✔ observerTest	1 s 344 ms
✔ strategyTest	4 ms
✔ testMain	10 ms

```
Are there crop predators? false
Are there animal predators? false
Farm 48 Became full. Creating new farm

 Farm 48
This is an Animal Farm
Currency is currently $261
This farms current level is 3
An upgrade currently cost $1200
There are currently 10 farmers
The maximum farmer capacity is 10
The herd skill level of this farm is 10
The money skill level of this farm is 15
This farm has existed for 11 days

This is a Hybrid Barn, it has crops and animals
Horse:1 cow:-1 pig:24 chicken:40 dog:0
Are there animal predators? false
Farm 49 Became full. Creating new farm

 Farm 49
This is an Animal Farm
Currency is currently $322
This farms current level is 2
An upgrade currently cost $1200
There are currently 10 farmers
The maximum farmer capacity is 10
The herd skill level of this farm is 12
```