

НАМАЛЯВАНЕ НА СЛОЖНОСТТА В ПРОГРАМНИЯ КОД

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Developed by Velbazhd Software LLC

Една често negliжирана тема в обучението по програмиране са закони на де Морган.

http://bg.wikipedia.org/wiki/%D0%97%D0%B0%D0%BA%D0%BE%D0%BD%D0%B8_%D0%BD%D0%B0_%D0%B4%D0%B5_%D0%9C%D0%BE%D1%80%D0%B3%D0%B0%D0%BD

Ще обърнем внимание точно на този проблем, като ще демонстрираме код в който тези логически трансформации могат да се приложат.

Целта е сложността на кода да се намали и възможностите за разбирането на написаните инструкции да стане по-голяма.

Както е показано в wiki статията, законите на де Морган се прилагат за да се трансформират серия от И/ИЛИ операнди в серия от ИЛИ/И операнди, като се трансформира операцията НЕ.

В играта Lionheart Remake, файл EntityUpdater.java, на ред 81 е написана if конструкция, която може значително да бъде опростена чрез разбиване на отделните И операнди:

<https://github.com/b3dgs/lionheart-remake/blob/0dc8cf721e68f58f28fa0357df645ca5fd1ced8a/lionheart-game/src/main/java/com/b3dgs/lionheart/object/EntityUpdater.java?fbclid=IwAR0Fz29wwT6VxJBXOACGijHYrkkyPUpQqhOL0s49fKpoG8nD2vPviEIWXX8#L81>

Разклоняваме основното хранилище на проекта:



[Pull requests](#) [Issues](#) [Marketplace](#) [Explore](#)[Coding-Sunday-Sofia](#) / **lionheart-remake**forked from [b3dgs/lionheart-remake](#)[Watch](#)

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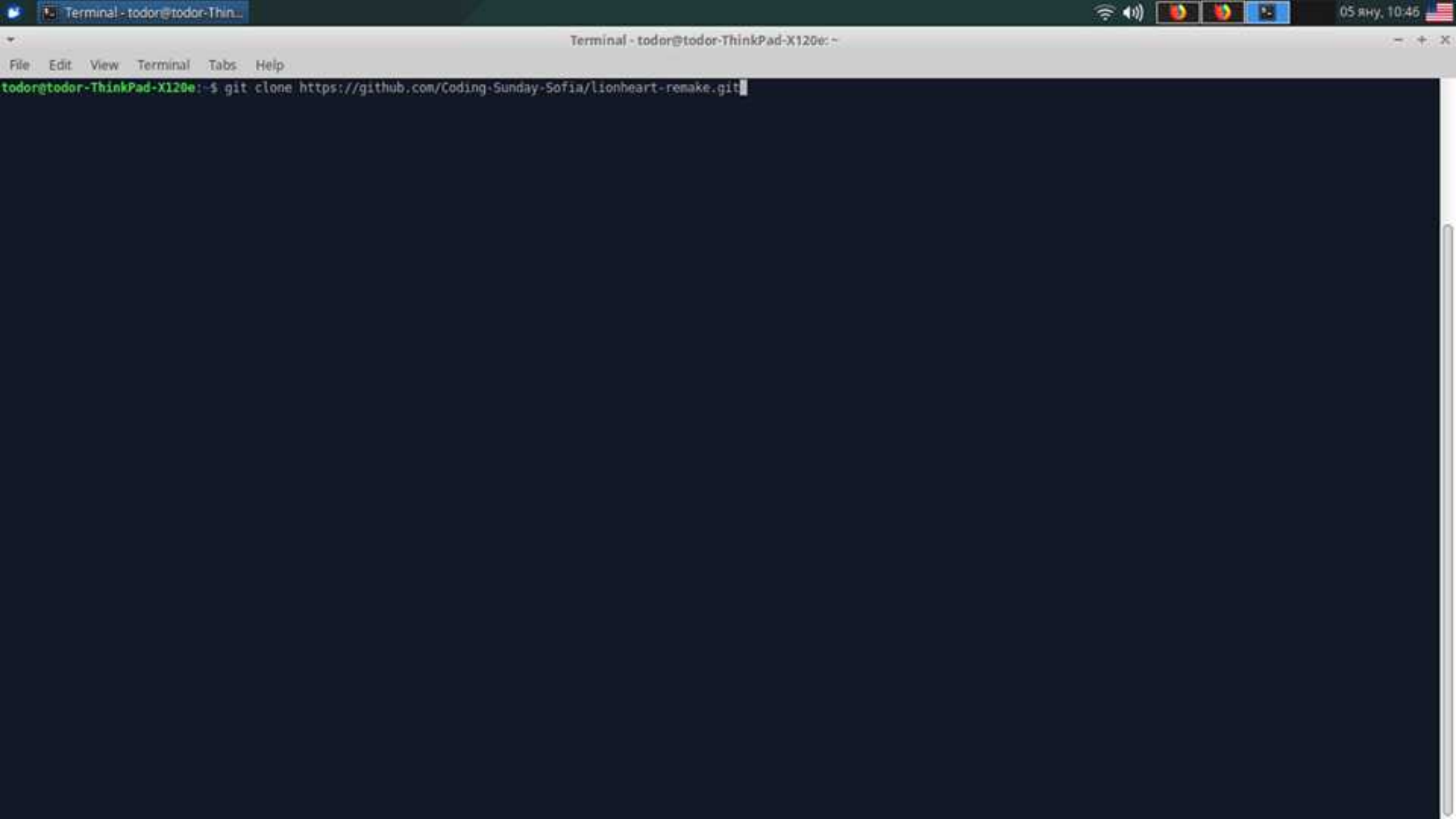
4

[Code](#)[Pull requests](#) 0[Actions](#)[Projects](#) 0[Wiki](#)[Security](#)[Insights](#)[Settings](#)Java remake of Lionheart amiga game <https://www.b3dgs.com/v7/page.php?lan...>[Edit](#)[Manage topics](#)[397 commits](#)[1 branch](#)[0 packages](#)[1 release](#)[1 contributor](#)[GPL-3.0](#)Branch: [master](#)[New pull request](#)[Create new file](#)[Upload files](#)[Find file](#)[Clone or download](#)This branch is even with [b3dgs:master](#).[Pull request](#)[Compare](#)**DJThunder** Version updated to 0.0.17 with LionEngine 9.0.3.Latest commit [edcscf7](#) 7 days ago

.github/ISSUE_TEMPLATE	Issue template moved to .github folder. File gitignore updated.	2 years ago
com.b3dgs.lionheart.editor.product	Version updated to 0.0.17 with LionEngine 9.0.3.	7 days ago
com.b3dgs.lionheart.editor.repository	Version updated to 0.0.17 with LionEngine 9.0.3.	7 days ago
com.b3dgs.lionheart.editor.target	Version updated to 0.0.17 with LionEngine 9.0.3.	7 days ago
com.b3dgs.lionheart.editor	Version updated to 0.0.17 with LionEngine 9.0.3.	7 days ago
lionheart-android	Code cleanup.	3 months ago
lionheart-editor-parent	Version updated to 0.0.17 with LionEngine 9.0.3.	7 days ago
lionheart-game	Version updated to 0.0.17 with LionEngine 9.0.3.	7 days ago
lionheart-parent	Version updated to 0.0.17 with LionEngine 9.0.3.	7 days ago

Следва изтегляне на локално копие:





```
todor@todor-ThinkPad-X120e:~$ git clone https://github.com/Coding-Sunday-Sofia/lionheart-remake.git
```


Тъй като ще предложим направените проблеми на автора на проекта, добавяме препратка към оригиналния проект:



```
todor@todor-ThinkPad-X120e:~/Desktop$ git clone https://github.com/Coding-Sunday-Sofia/lionheart-remake.git
```

```
Cloning into 'lionheart-remake'...
```

```
remote: Enumerating objects: 857, done.
```

```
remote: Counting objects: 100% (857/857), done.
```

```
remote: Compressing objects: 100% (501/501), done.
```

```
remote: Total 8868 (delta 415), reused 582 (delta 142), pack-reused 8811
```

```
Receiving objects: 100% (8868/8868), 12.81 MiB | 1.47 MiB/s, done.
```

```
Resolving deltas: 100% (4953/4953), done.
```

```
Checking out files: 100% (775/775), done.
```

```
todor@todor-ThinkPad-X120e:~/Desktop$ cd lionheart-remake/
```

```
todor@todor-ThinkPad-X120e:~/Desktop/lionheart-remake$ git remote add upstream https://github.com/b3dgs/lionheart-remake.git
```

Промените, които ще предложим трябва да се направят в отделен клон (branch) на проекта:



File Edit View Terminal Tabs Help

```
todor@todor-ThinkPad-X120e:~/Desktop/lionheart-remake$ git checkout master
Already on 'master'
Your branch is up to date with 'origin/master'.
todor@todor-ThinkPad-X120e:~/Desktop/lionheart-remake$ git pull upstream master && git push origin master
From https://github.com/b3dgs/lionheart-remake
 * branch      master      -> FETCH_HEAD
 * [new branch] master      -> upstream/master
Already up to date.
Username for 'https://github.com': TodorBalabanov
Password for 'https://TodorBalabanov@github.com':
Everything up-to-date
todor@todor-ThinkPad-X120e:~/Desktop/lionheart-remake$ git checkout -b small-fix/1f-05012020
Switched to a new branch 'small-fix/1f-05012020'
todor@todor-ThinkPad-X120e:~/Desktop/lionheart-remake$
```

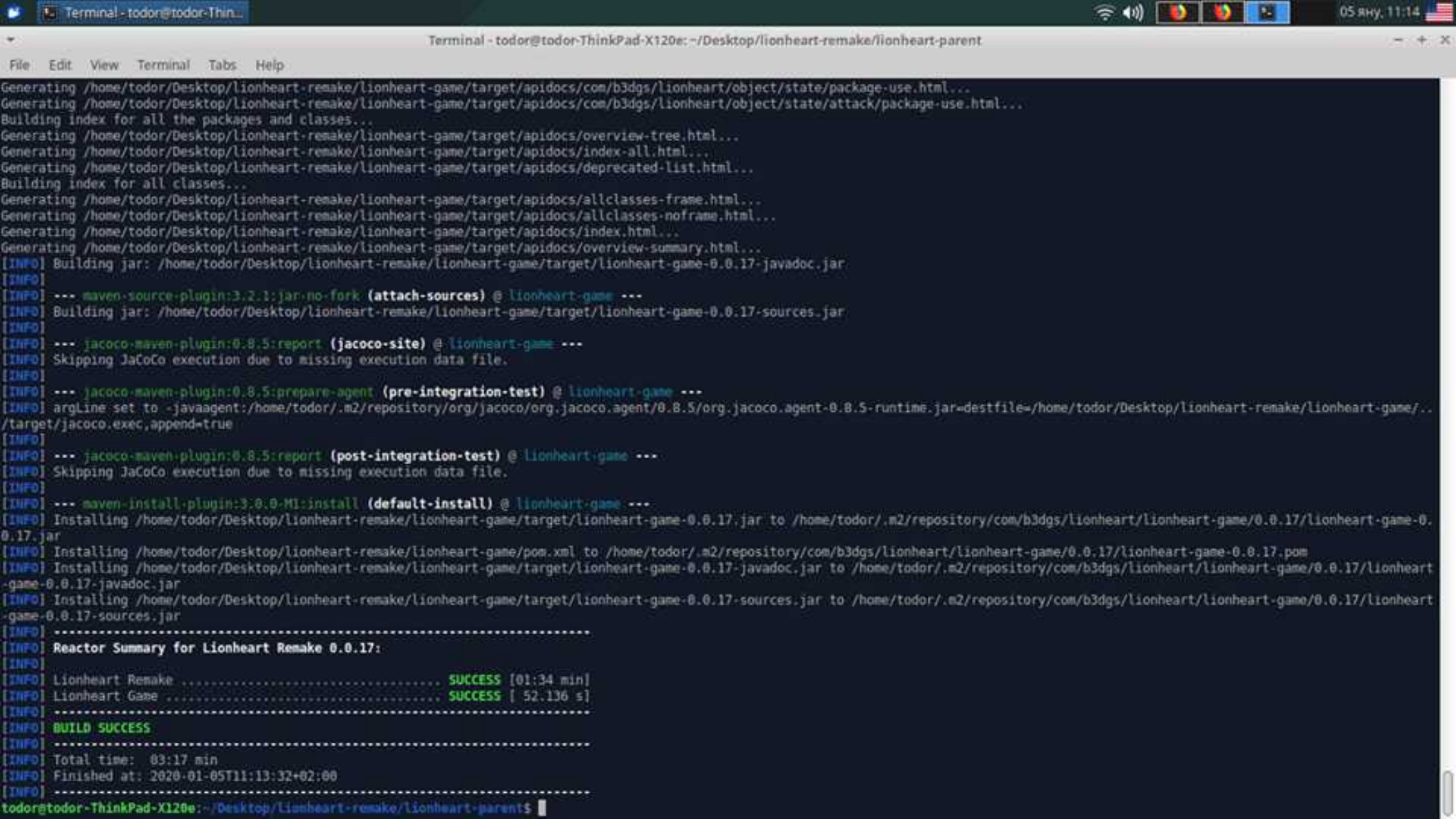
Най-сложната фаза при навлизането в нов проект е изграждането на изпълнимите файлове от програмния код. Lionheart Remake е проектирант така, че да се изпълнява на множество различни платформи. Проектът е организиран в няколко директори, спрямо платформата и отделните части се изграждат с Maven скрипт:

File Edit View Terminal Tabs Help

```
todor@todor-ThinkPad-X120e:~/Desktop/lionheart-remake$ ls
com.bldgs.lionheart.editor      com.bldgs.lionheart.editor.repository  LICENSE      lionheart-editor-parent  lionheart-parent  README.md
com.bldgs.lionheart.editor.product  com.bldgs.lionheart.editor.target      lionheart-android  lionheart-game          lionheart-pc
todor@todor-ThinkPad-X120e:~/Desktop/lionheart-remake$ cd lionheart-parent/
todor@todor-ThinkPad-X120e:~/Desktop/lionheart-remake/lionheart-parent$ ls
pom.xml  target
todor@todor-ThinkPad-X120e:~/Desktop/lionheart-remake/lionheart-parent$ mvn install
```


За да се изградят различните платформено зависими модули първо трябва да се изгради родителският модул:





- В конкретния случай проектът ще бъде изграден за настолен компютър и поради тази причина се използва папката с РС скрипта за изграждане:



File Edit View Terminal Tabs Help

```
todor@todor-ThinkPad-X120e:~/Desktop/lionheart-remake$ ls
com.bldgs.lionheart.editor      com.bldgs.lionheart.editor.repository  LICENSE      lionheart-editor-parent  lionheart-parent  README.md
com.bldgs.lionheart.editor.product  com.bldgs.lionheart.editor.target      lionheart-android  lionheart-game          lionheart-pc
todor@todor-ThinkPad-X120e:~/Desktop/lionheart-remake$ cd lionheart-pc/
todor@todor-ThinkPad-X120e:~/Desktop/lionheart-remake/lionheart-pc$ ls
pom.xml  src
todor@todor-ThinkPad-X120e:~/Desktop/lionheart-remake/lionheart-pc$ mvn install
```

Резултатът от изграждането на проекта е изпълним JAR файл:



File Edit View Terminal Tabs Help

```

Generating /home/todor/Desktop/lionheart-remake/lionheart-pc/target/apidocs/com/b3dgs/lionheart/object/package-use.html...
Building index for all the packages and classes...
Generating /home/todor/Desktop/lionheart-remake/lionheart-pc/target/apidocs/overview-tree.html...
Generating /home/todor/Desktop/lionheart-remake/lionheart-pc/target/apidocs/index-all.html...
Generating /home/todor/Desktop/lionheart-remake/lionheart-pc/target/apidocs/deprecated-list.html...
Building index for all classes...
Generating /home/todor/Desktop/lionheart-remake/lionheart-pc/target/apidocs/allclasses-frame.html...
Generating /home/todor/Desktop/lionheart-remake/lionheart-pc/target/apidocs/allclasses-noframe.html...
Generating /home/todor/Desktop/lionheart-remake/lionheart-pc/target/apidocs/index.html...
Generating /home/todor/Desktop/lionheart-remake/lionheart-pc/target/apidocs/overview-summary.html...
[INFO] Building jar: /home/todor/Desktop/lionheart-remake/lionheart-pc/target/lionheart-pc-0.0.17-javadoc.jar
[INFO]
[INFO] --- maven-source-plugin:3.2.1:jar-no-fork (attach-sources) @ lionheart-pc ---
[INFO] Building jar: /home/todor/Desktop/lionheart-remake/lionheart-pc/target/lionheart-pc-0.0.17-sources.jar
[INFO]
[INFO] --- jacoco-maven-plugin:0.8.5:report (jacoco-site) @ lionheart-pc ---
[INFO] Skipping JaCoCo execution due to missing execution data file.
[INFO]
[INFO] --- jacoco-maven-plugin:0.8.5:prepare-agent (pre-integration-test) @ lionheart-pc ---
[INFO] argLine set to -javaagent:/home/todor/.m2/repository/org/jacoco/org.jacoco.agent/0.8.5/org.jacoco.agent-0.8.5-runtime.jar=destfile=/home/todor/Desktop/lionheart-remake/lionheart-pc/./target/jacoco.exec,append=true
[INFO]
[INFO] --- jacoco-maven-plugin:0.8.5:report (post-integration-test) @ lionheart-pc ---
[INFO] Skipping JaCoCo execution due to missing execution data file.
[INFO]
[INFO] --- maven-install-plugin:3.0.0-M1:install (default-install) @ lionheart-pc ---
[INFO] Installing /home/todor/Desktop/lionheart-remake/lionheart-pc/target/lionheart-pc-0.0.17.jar to /home/todor/.m2/repository/com/b3dgs/lionheart/lionheart-pc/0.0.17/lionheart-pc-0.0.17.jar
[INFO] Installing /home/todor/Desktop/lionheart-remake/lionheart-pc/pom.xml to /home/todor/.m2/repository/com/b3dgs/lionheart/lionheart-pc/0.0.17/lionheart-pc-0.0.17.pom
[INFO] Installing /home/todor/Desktop/lionheart-remake/lionheart-pc/target/lionheart-pc-0.0.17-javadoc.jar to /home/todor/.m2/repository/com/b3dgs/lionheart/lionheart-pc/0.0.17/lionheart-pc-0.0.17-javadoc.jar
[INFO] Installing /home/todor/Desktop/lionheart-remake/lionheart-pc/target/lionheart-pc-0.0.17-sources.jar to /home/todor/.m2/repository/com/b3dgs/lionheart/lionheart-pc/0.0.17/lionheart-pc-0.0.17-sources.jar
[INFO]
[INFO] BUILD SUCCESS
[INFO]
[INFO] Total time: 01:04 min
[INFO] Finished at: 2020-01-05T11:31:14+02:00
[INFO]
todor@todor-ThinkPad-X120e:~/Desktop/lionheart-remake/lionheart-pc$ ls
META-INF  pom.xml  src  target
todor@todor-ThinkPad-X120e:~/Desktop/lionheart-remake/lionheart-pc$ cd target/
todor@todor-ThinkPad-X120e:~/Desktop/lionheart-remake/lionheart-pc/target$ ls
apidocs          checkstyle-header.txt  classes          javadoc-bundle-options  lionheart-pc-0.0.17-sources.jar
checkstyle-cachefile  checkstyle-result.xml  dependency-maven-plugin-markers  lionheart-pc-0.0.17.jar  maven-archiver
checkstyle-checker.xml  checkstyle-suppressions.xml  generated-sources  lionheart-pc-0.0.17-javadoc.jar  maven-status
todor@todor-ThinkPad-X120e:~/Desktop/lionheart-remake/lionheart-pc/target$

```


Стартирането на изпълнимия файл става чрез извикване на Java виртуалната машина:



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```
todor@todor-ThinkPad-X120e:~/Desktop/lionheart-remake/lionheart-pc/target$ ls
apidocs          checkstyle-header.txt      classes                  javadoc-bundle-options  lionheart-pc-0.0.17-sources.jar
checkstyle-cachefile  checkstyle-result.xml      dependency-maven-plugin-markers  lionheart-pc-0.0.17.jar  maven-archiver
checkstyle-checker.xml  checkstyle-suppressions.xml  generated-sources          lionheart-pc-0.0.17-javadoc.jar  maven-status
todor@todor-ThinkPad-X120e:~/Desktop/lionheart-remake/lionheart-pc/target$ java -Xmx128m -Xms64m -jar lionheart-pc-0.0.17.jar
```

Второто най-неприятно нещо при навлизането в нов проект е когато изпълнимите файлове са изградени, но софтуерът не изпълнява очакваното, а спира изпълнението си аварийно:



File Edit View Terminal Tabs Help

```
todor@todor-ThinkPad-X120e:~/Desktop/lionheart-remake/lionheart-pc/target$ ls
apidocs      checkstyle-header.txt      classes      javadoc-bundle-options  lionheart-pc-0.0.17-sources.jar
checkstyle-cachefile  checkstyle-result.xml      dependency-maven-plugin-markers  lionheart-pc-0.0.17.jar      maven-archiver
checkstyle-checker.xml  checkstyle-suppressions.xml  generated-sources  lionheart-pc-0.0.17-javadoc.jar  maven-status

todor@todor-ThinkPad-X120e:~/Desktop/lionheart-remake/lionheart-pc/target$ java -Xmx128m -Xms64m -jar lionheart-pc-0.0.17.jar
1/5/20 11:43 AM INFO: Starting "LionEngine "9.0.3" for "Lionheart Remake 0.0.17"
1/5/20 11:43 AM INFO: Class resources = com.b3dgs.lionheart.ApplLionheartPc
1/5/20 11:43 AM INFO: Load library: sc68
1/5/20 11:43 AM INFO: Library sc68 loaded
1/5/20 11:43 AM INFO: Starting sequence: com.b3dgs.lionheart.Loading
1/5/20 11:43 AM INFO: Ending sequence: com.b3dgs.lionheart.Loading
1/5/20 11:43 AM INFO: Starting sequence: com.b3dgs.lionheart.Scene
1/5/20 11:43 AM INFO: Loading collision formulas from: file:/home/todor/Desktop/lionheart-remake/lionheart-pc/target/lionheart-pc-0.0.17.jar!/com/b3dgs/lionheart/levels/swamp/formulas.xml
1/5/20 11:43 AM INFO: Loading collision groups from: file:/home/todor/Desktop/lionheart-remake/lionheart-pc/target/lionheart-pc-0.0.17.jar!/com/b3dgs/lionheart/levels/swamp/collisions.xml
1/5/20 11:43 AM SEVERE:
com.b3dgs.lionengine.LionEngineException: [effect] Invalid directory:
    at com.b3dgs.lionengine.MediaDefault.getMedias(MediaDefault.java:284)
    at com.b3dgs.lionengine.game.feature.Factory.createCache(Factory.java:172)
    at com.b3dgs.lionheart.World.prepareCache(World.java:192)
    at com.b3dgs.lionheart.World.loading(World.java:210)
    at com.b3dgs.lionengine.game.feature.WorldGame.loadFromFile(WorldGame.java:163)
    at com.b3dgs.lionheart.Scene.load(Scene.java:118)
    at com.b3dgs.lionengine.graphic.engine.Sequence.start(Sequence.java:215)
    at com.b3dgs.lionengine.graphic.engine.Loader.handle(Loader.java:100)
    at com.b3dgs.lionengine.graphic.engine.Loader.lambda$start$0(Loader.java:62)
    at java.lang.Thread.run(Thread.java:748)
1/5/20 11:43 AM INFO: LionEngine terminated
todor@todor-ThinkPad-X120e:~/Desktop/lionheart-remake/lionheart-pc/target$
```

Въпреки, че изпълнението на кода не се получава това не пречи да се работи върху if конструкцията. Инструкцията на 92 ред ще се изпълнява независимо дали ще се влезе в тялото на if-а или не:



object - File Manager

05 янв, 11:52

/home/todor/Desktop/lionheart-remake/lionheart-game/src/main/java/com/b3dgs/lionheart/object/EntityUpdater.java - Mousepad

FileEditSearchViewDocumentHelp

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```

    * @param services The services reference.
    * @param setup The setup reference.
    * @param model The model reference.
    */
    EntityUpdater(Services services, Setup setup, EntityModel model)
    {
        super(services, setup);

        movement = model.getMovement();
        jump = model.getJump();
    }

    /**
     * Update mirror depending of current mirror and movement.
     *
     * @param extrp The extrapolation value.
     */
    private void updateMirror(double extrp)
    {
        if (!hasFeature(Patrol.class) && !state.isState(StateHurt.class) && !state.isState(StateSlide.class))
        {
            if (mirrorable.is(Mirror.NONE) && movement.getDirectionHorizontal() < 0.0)
            {
                mirrorable.mirror(Mirror.HORIZONTAL);
            }
            else if (mirrorable.is(Mirror.HORIZONTAL) && movement.getDirectionHorizontal() > 0.0)
            {
                mirrorable.mirror(Mirror.NONE);
            }
        }
        mirrorable.update(extrp);
    }

    @Override
    public void update(double extrp)
    {
        routines.update(extrp);
        state.update(extrp);
        jump.update(extrp);
        movement.update(extrp);
        transformable.moveLocation(extrp, body, movement, jump);
    }

```


Това позволява if конструкцията да бъде разширена до if-else конструкция:



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05 янв. 11:57

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📁 object - File Manager

🏠 /home/todor/Desktop/lionheart-remake/lionheart-game/src/main/java/com/h3dgs/lionheart/object/EntityUpdater.java - Mousepad

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File Edit Search View Document Help

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```

    @param services The services reference.
    * @param setup The setup reference.
    * @param model The model reference.
    */
    EntityUpdater(Services services, Setup setup, EntityModel model)
    {
        super(services, setup);

        movement = model.getMovement();
        jump = model.getJump();
    }

    /**
     * Update mirror depending of current mirror and movement.
     *
     * @param extrp The extrapolation value.
     */
    private void updateMirror(double extrp)
    {
        if (!hasFeature(Patrol.class) && !state.isState(StateHurt.class) && !state.isState(StateSlide.class))
        {
            if (mirrorable.is(Mirror.NONE) && movement.getDirectionHorizontal() < 0.0)
            {
                mirrorable.mirror(Mirror.HORIZONTAL);
            }
            else if (mirrorable.is(Mirror.HORIZONTAL) && movement.getDirectionHorizontal() > 0.0)
            {
                mirrorable.mirror(Mirror.NONE);
            }
            mirrorable.update(extrp);
        } else {
            mirrorable.update(extrp);
        }
    }

    @Override
    public void update(double extrp)
    {
        routines.update(extrp);
        state.update(extrp);
        jump.update(extrp);
    }

```

По законите на де Морган заглавната част на if конструкцията може да се трансформира, но в случая е по-удачно отделните условия да бъдат изнесени в отделни if проверки:



object - File Manager

05 янв, 11:59

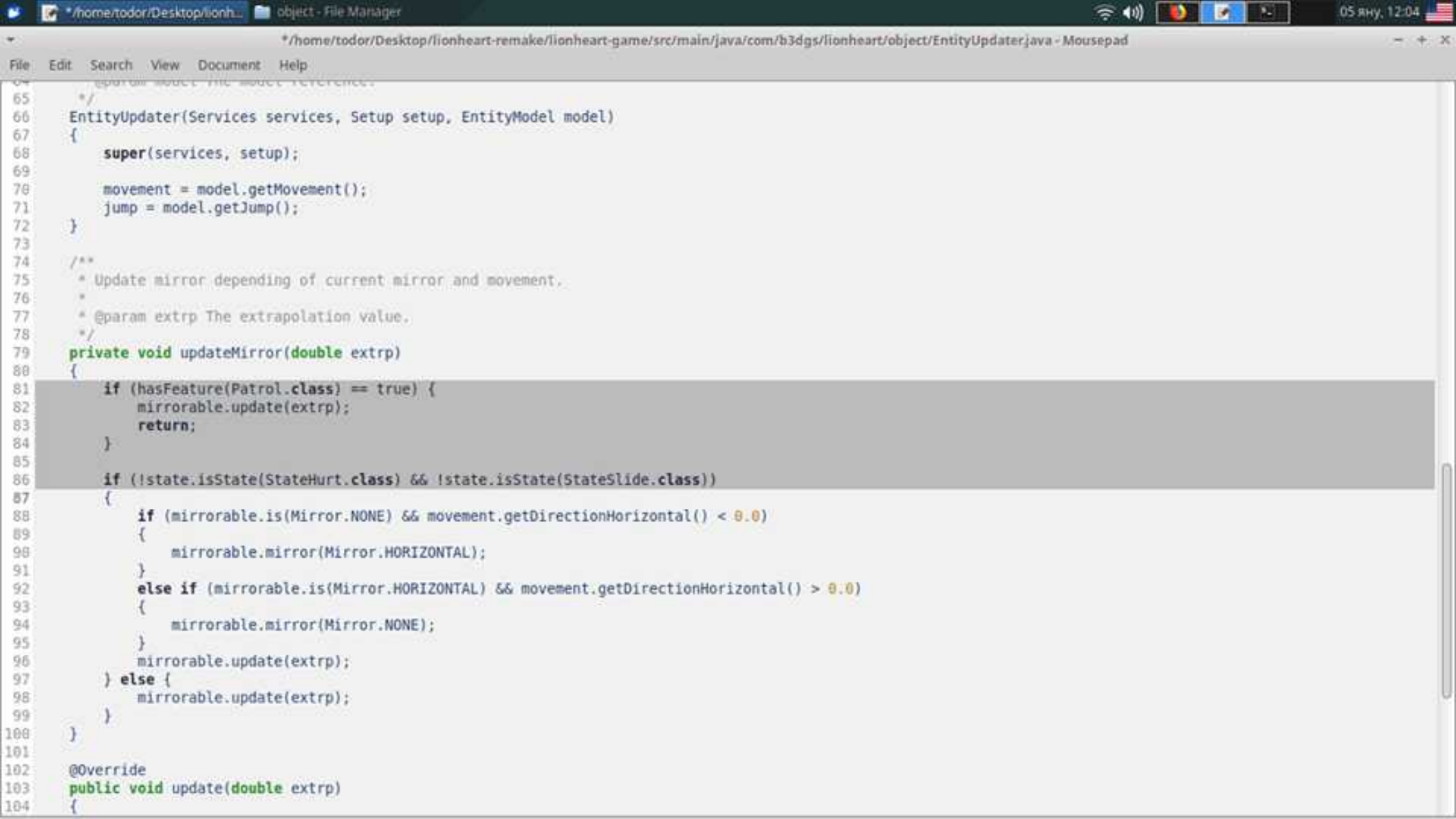
*/home/todor/Desktop/lionh...

*/home/todor/Desktop/lionheart-remake/lionheart-game/src/main/java/com/h3dgs/lionheart/object/EntityUpdater.java - Mousepad

File Edit Search View Document Help

```
64  *//
65
66  EntityUpdater(Services services, Setup setup, EntityModel model)
67  {
68      super(services, setup);
69
70      movement = model.getMovement();
71      jump = model.getJump();
72  }
73
74  /**
75   * Update mirror depending of current mirror and movement.
76   *
77   * @param extrp The extrapolation value.
78   */
79  private void updateMirror(double extrp)
80  {
81      if (!hasFeature(Patrol.class) && !state.isState(StateHurt.class) && !state.isState(StateSlide.class))
82      {
83          if (mirrorable.is(Mirror.NONE) && movement.getDirectionHorizontal() < 0.0)
84          {
85              mirrorable.mirror(Mirror.HORIZONTAL);
86          }
87          else if (mirrorable.is(Mirror.HORIZONTAL) && movement.getDirectionHorizontal() > 0.0)
88          {
89              mirrorable.mirror(Mirror.NONE);
90          }
91          mirrorable.update(extrp);
92      } else {
93          mirrorable.update(extrp);
94      }
95  }
96
97  @Override
98  public void update(double extrp)
99  {
100      routines.update(extrp);
101      state.update(extrp);
102      jump.update(extrp);
103      movement.update(extrp);
104      transformable.moveLocation(extrp, body, movement, jump);
```

- Ако условието `hasFeature(Patrol.class)` бъде изчислено до истина, то в тялото на `if`-а няма да се влезе. Това позволява тази проверка да бъде извадена в собствена `if` конструкция:



По аналогичен начин `state.isState(StateHurt.class)` проверката може да бъде изведена в собствена `if` конструкция:



```

File Edit Search View Document Help
64  * @param model The model reference.
65  */
66  EntityUpdater(Services services, Setup setup, EntityModel model)
67  {
68      super(services, setup);
69
70      movement = model.getMovement();
71      jump = model.getJump();
72  }
73
74  /**
75   * Update mirror depending of current mirror and movement.
76   *
77   * @param extrp The extrapolation value.
78   */
79  private void updateMirror(double extrp)
80  {
81      if (hasFeature(Patrol.class) == true) {
82          mirrorable.update(extrp);
83          return;
84      }
85
86      if (state.isState(StateHurt.class) == true) {
87          mirrorable.update(extrp);
88          return;
89      }
90
91      if (!state.isState(StateSlide.class))
92      {
93          if (mirrorable.is(Mirror.NONE) && movement.getDirectionHorizontal() < 0.0)
94          {
95              mirrorable.mirror(Mirror.HORIZONTAL);
96          }
97          else if (mirrorable.is(Mirror.HORIZONTAL) && movement.getDirectionHorizontal() > 0.0)
98          {
99              mirrorable.mirror(Mirror.NONE);
100          }
101          mirrorable.update(extrp);
102      } else {
103          mirrorable.update(extrp);
104      }

```

По същата аналогия и `state.isState(StateSlide.class)` проверката може да бъде изнесена в собствена `if` конструкция, което отменя нуждата от наличието на първоначалната `if-else` конструкция:



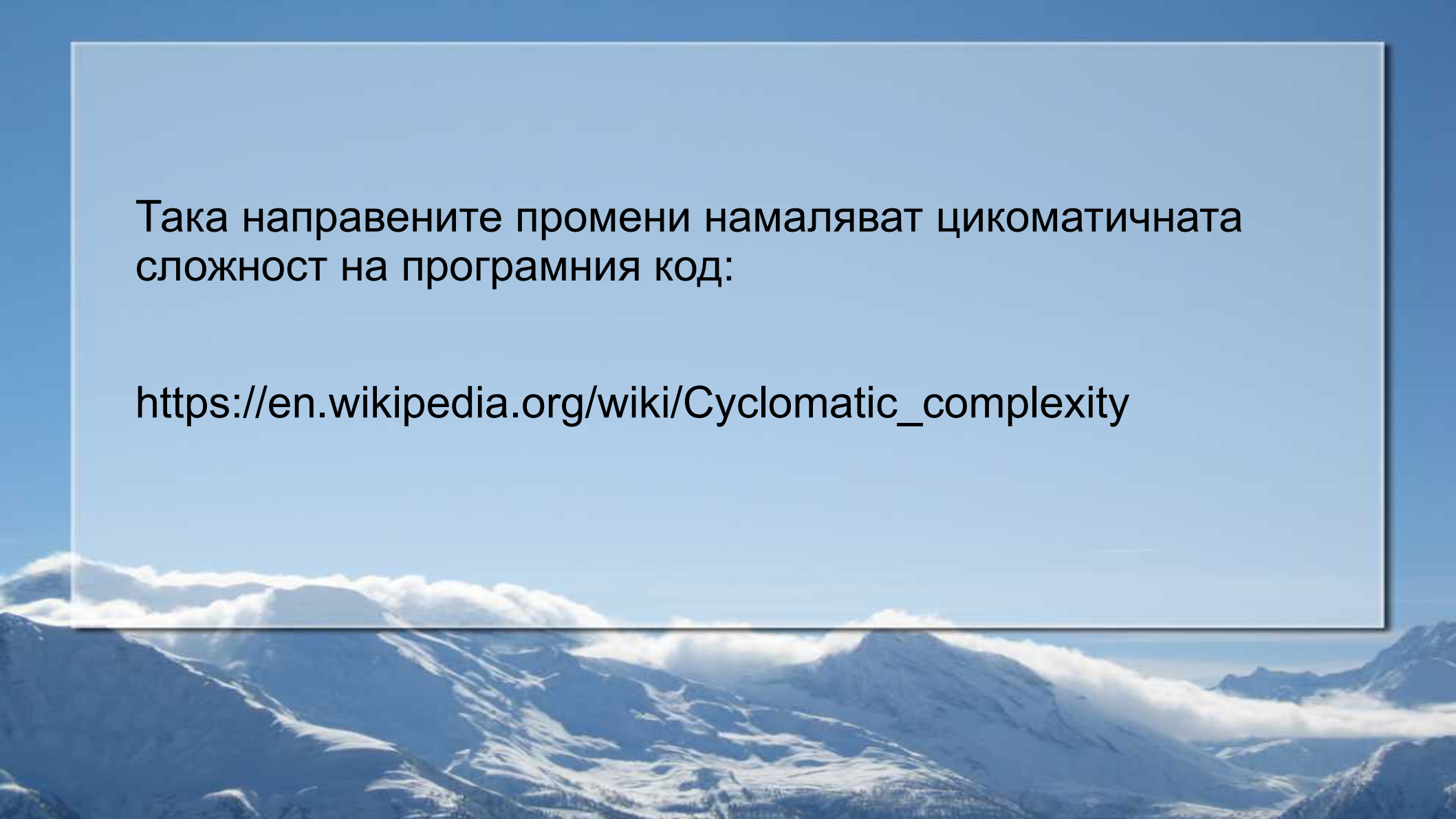
object - File Manager

05 янв, 12:09

*/home/todor/Desktop/lionheart-remake/lionheart-game/src/main/java/com/b3dgs/lionheart/object/EntityUpdater.java - Mousepad

File Edit Search View Document Help

69
70 movement = model.getMovement();
71 jump = model.getJump();
72 }
73
74 /**
75 * Update mirror depending of current mirror and movement.
76 *
77 * @param extrp The extrapolation value.
78 */
79 private void updateMirror(double extrp)
80 {
81 if (hasFeature(Patrol.class) == true) {
82 mirrorable.update(extrp);
83 return;
84 }
85
86 if (state.isState(StateHurt.class) == true) {
87 mirrorable.update(extrp);
88 return;
89 }
90
91 if (state.isState(StateSlide.class) == true) {
92 mirrorable.update(extrp);
93 return;
94 }
95
96 if (mirrorable.is(Mirror.NONE) && movement.getDirectionHorizontal() < 0.0)
97 {
98 mirrorable.mirror(Mirror.HORIZONTAL);
99 }
100 else if (mirrorable.is(Mirror.HORIZONTAL) && movement.getDirectionHorizontal() > 0.0)
101 {
102 mirrorable.mirror(Mirror.NONE);
103 }
104 mirrorable.update(extrp);
105 }
106
107 @Override
108 public void update(double extrp)
109 {



Така направените промени намаляват цикломатичната сложност на програмния код:

https://en.wikipedia.org/wiki/Cyclomatic_complexity


```

71     jump = model.getJump();
72 }
73
74 /**
75  * Update mirror depending of current mirror and movement.
76  *
77  * @param extrp The extrapolation value.
78  */
79 private void updateMirror(double extrp)
80 {
81     if (hasFeature(Patrol.class) == true) {
82         mirrorable.update(extrp);
83         return;
84     }
85
86     if (state.isState(StateHurt.class) == true) {
87         mirrorable.update(extrp);
88         return;
89     }
90
91     if (state.isState(StateSlide.class) == true) {
92         mirrorable.update(extrp);
93         return;
94     }
95
96     if (mirrorable.is(Mirror.NONE) && movement.getDirectionHorizontal() < 0.0) {
97         mirrorable.mirror(Mirror.HORIZONTAL);
98     } else if (mirrorable.is(Mirror.HORIZONTAL) && movement.getDirectionHorizontal() > 0.0) {
99         mirrorable.mirror(Mirror.NONE);
100     }
101
102     mirrorable.update(extrp);
103 }
104
105 @Override
106 public void update(double extrp)
107 {
108     routines.update(extrp);
109     state.update(extrp);
110     jump.update(extrp);
111     movement.update(extrp);

```

След като промененият код се компилира, за да се провери дали е синтактично коректен следва изпращане до отдалеченото хранилище и предлагане на Pull Request:



```
master
* small-fix/1f-05012020
todor@todor-ThinkPad-X120e:~/Desktop/lionheart-remake$ git diff
diff --git a/lionheart-game/src/main/java/com/b3dgs/lionheart/object/EntityUpdater.java b/lionheart-game/src/main/java/com/b3dgs/lionheart/object/EntityUpdater.java
index 519c75f..1dfab56 100644
--- a/lionheart-game/src/main/java/com/b3dgs/lionheart/object/EntityUpdater.java
+++ b/lionheart-game/src/main/java/com/b3dgs/lionheart/object/EntityUpdater.java
@@ -78,17 +78,27 @@ final class EntityUpdater extends FeatureModel implements Refreshable
 */
private void updateMirror(double extrp)
{
    if (hasFeature(Patrol.class) && !state.isState(StateHurt.class) && !state.isState(StateSlide.class))
    {
        if (mirrorable.is(Mirror.NONE) && movement.getDirectionHorizontal() < 0.0)
        {
            mirrorable.mirror(Mirror.HORIZONTAL);
        }
        else if (mirrorable.is(Mirror.HORIZONTAL) && movement.getDirectionHorizontal() > 0.0)
        {
            mirrorable.mirror(Mirror.NONE);
        }
    }
    if (hasFeature(Patrol.class) == true) {
        mirrorable.update(extrp);
        return;
    }
    if (state.isState(StateHurt.class) == true) {
        mirrorable.update(extrp);
        return;
    }
    if (state.isState(StateSlide.class) == true) {
        mirrorable.update(extrp);
        return;
    }
    if (mirrorable.is(Mirror.NONE) && movement.getDirectionHorizontal() < 0.0) {
        mirrorable.mirror(Mirror.HORIZONTAL);
    } else if (mirrorable.is(Mirror.HORIZONTAL) && movement.getDirectionHorizontal() > 0.0) {
        mirrorable.mirror(Mirror.NONE);
    }
    mirrorable.update(extrp);
}
```

todor@todor-ThinkPad-X120e:~/Desktop/lionheart-remake\$

Направените промени първо се публикуват в локалното хранилище, а след това и в отдалеченото хранилище:



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```
todor@todor-ThinkPad-X120e:~/Desktop/lionheart-remake$ git branch
master
* small-fix/if-05012020
todor@todor-ThinkPad-X120e:~/Desktop/lionheart-remake$ git add .
todor@todor-ThinkPad-X120e:~/Desktop/lionheart-remake$ git commit -m "Split of if construction was done."
[small-fix/if-05012020 1b3b829] Split of if construction was done.
1 file changed, 20 insertions(+), 10 deletions(-)
todor@todor-ThinkPad-X120e:~/Desktop/lionheart-remake$ git push -u origin small-fix/if-05012020
Username for 'https://github.com': TodorBalabanov
Password for 'https://TodorBalabanov@github.com':
Counting objects: 11, done.
Delta compression using up to 2 threads.
Compressing objects: 100% (7/7), done.
Writing objects: 100% (11/11), 857 bytes | 214.00 KiB/s, done.
Total 11 (delta 5), reused 0 (delta 0)
remote: Resolving deltas: 100% (5/5), completed with 5 local objects.
remote:
remote: Create a pull request for 'small-fix/if-05012020' on GitHub by visiting:
remote:   https://github.com/Coding-Sunday-Sofia/lionheart-remake/pull/new/small-fix/if-05012020
remote:
To https://github.com/Coding-Sunday-Sofia/lionheart-remake.git
* [new branch]      small-fix/if-05012020 -> small-fix/if-05012020
Branch 'small-fix/if-05012020' set up to track remote branch 'small-fix/if-05012020' from 'origin'.
todor@todor-ThinkPad-X120e:~/Desktop/lionheart-remake$
```


За да бъдат предложени промените към основния fork на проекта е необходимо да се създаде Pull Request:



[Pull requests](#) [Issues](#) [Marketplace](#) [Explore](#)[Coding-Sunday-Sofia](#) / **lionheart-remake**forked from [b3dgs/lionheart-remake](#)[Watch](#)

0

[★ Star](#)

0

[Fork](#)

4

[Code](#)[Pull requests](#) 0[Actions](#)[Projects](#) 0[Wiki](#)[Security](#)[Insights](#)[Settings](#)Java remake of Lionheart amiga game <https://www.b3dgs.com/v7/page.php?lan...>[Edit](#)[Manage topics](#)[397](#) commits[2](#) branches[0](#) packages[1](#) release[1](#) contributor[GPL-3.0](#)

Your recently pushed branches:

[small-fix/ff-05012020](#) (2 minutes ago)[Compare & pull request](#)Branch: **master**[New pull request](#)[Create new file](#)[Upload files](#)[Find file](#)[Clone or download](#)This branch is even with [b3dgs:master](#).[Pull request](#)[Compare](#)**DJThunder** Version updated to 0.0.17 with LionEngine 9.0.3.Latest commit [edcacf7](#) · 7 days ago[.github/ISSUE_TEMPLATE](#)

Issue template moved to .github folder. File gitignore updated.

2 years ago

[com.b3dgs.lionheart.editor.product](#)

Version updated to 0.0.17 with LionEngine 9.0.3.

7 days ago

[com.b3dgs.lionheart.editor.repository](#)

Version updated to 0.0.17 with LionEngine 9.0.3.

7 days ago

[com.b3dgs.lionheart.editor.target](#)

Version updated to 0.0.17 with LionEngine 9.0.3.

7 days ago

[com.b3dgs.lionheart.editor](#)

Version updated to 0.0.17 with LionEngine 9.0.3.

7 days ago

[lionheart-android](#)

Code cleanup.

3 months ago

[lionheart-editor-parent](#)

Version updated to 0.0.17 with LionEngine 9.0.3.

7 days ago

В Pull Request-а се описва какво е променено и защо то е по-добро от предишния вариант:



[Pull requests](#) [Issues](#) [Marketplace](#) [Explore](#)[b3dgs / llonheart-remake](#)[Watch](#) 1[★ Unstar](#) 12[Fork](#) 4[Code](#)[Issues](#) 17[Pull requests](#) 0[Actions](#)[Wiki](#)[Security](#)[Insights](#)

Open a pull request

Create a new pull request by comparing changes across two branches. If you need to, you can also [compare across forks](#).

base repository: [b3dgs/llonheart-remake](#)base: [master](#)head repository: [Coding-Sunday-Sofia/llonhea...](#)compare: [small-fix/lf-05012020](#)

✓ **Able to merge.** These branches can be automatically merged.



Split of If construction was done.

[Write](#)[Preview](#)[AA](#) [B](#) [i](#) [“](#) [<>](#) [🔗](#) [⋮](#) [≡](#) [↕](#) [@](#) [🔖](#) [↶](#)

This simplification helps for easier understanding of the If checking done in this method.

Attach files by dragging & dropping, selecting or pasting them.

☒ **Allow edits from maintainers.** [Learn more](#)[Create pull request](#)

Ако направените промени са достатъчно разумни, последното нещо, което остава е администраторът на основния проект да одобри заявката за промяна:



[Pull requests](#) [Issues](#) [Marketplace](#) [Explore](#)[b3dgs / llonheart-remake](#)[Watch](#) 1[★ Unstar](#) 12[Fork](#) 4[Code](#)[Issues](#) 17[Pull requests](#) 1[Actions](#)[Wiki](#)[Security](#)[Insights](#)

Split of if construction was done. #83

[Edit](#)[Open](#)TodorBalabanov wants to merge 1 commit into [b3dgs:master](#) from [coding-Sunday-Sofia:small-fix/1f-05012020](#)[Conversation](#) 0[Commits](#) 1[Checks](#) 0[Files changed](#) 1

+20 -10



TodorBalabanov commented now

[+ 😊 ...](#)

This simplification helps for easier understanding of the if checking done in this method.



Split of if construction was done.

1b3b829

Add more commits by pushing to the [small-fix/1f-05012020](#) branch on [Coding-Sunday-Sofia/llonheart-remake](#).

**This branch has no conflicts with the base branch**Only those with [write access](#) to this repository can merge pull requests.[Write](#)[Preview](#)[AA](#) [B](#) [i](#) [“ ”](#) [< >](#) [🔗](#) [☰](#) [☷](#) [☰](#) [☷](#) [@](#) [🔖](#) [↶](#)

Reviewers

No reviews

Assignees

No one assigned

Labels

None yet

Milestone

No milestone

Notifications

[Customize](#)[Unsubscribe](#)

You're receiving notifications because you authored the thread.

Сложността на програмния код е от значителна важност за дългосрочния успех на един софтуерен проект. Добре организираният и разбираем код позволява на нови хора в проекта бързо и безпроблемно да навлязат в работата.

