ESOF 322 Homework 4
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Question 1)

   a) The analyzed software is an aquarium management database that allows information about multiple aquariums, such as expenses, test metrics, and nutrition to be stored and organized. The source code contains 40,480 lines of Java code, including comments. This was calculated programmatically using Java by running through each Java file in the source directory and counting the lines in each. The results of the program are as follows. (For the sake of space, the results of a single directory containing four files is given here) Since no results were found with the "Search in file content" box unchecked, these results had the box checked.

   b)

      i) Found 4 files that possibly contain design:
patterns.nyagua-5.0.4-src\src\util_panels\Calculators.java
Possible patterns: Adapter, Command, Factory, Observer, State

nyagua-5.0.4-src\src\util_panels\Converter.java
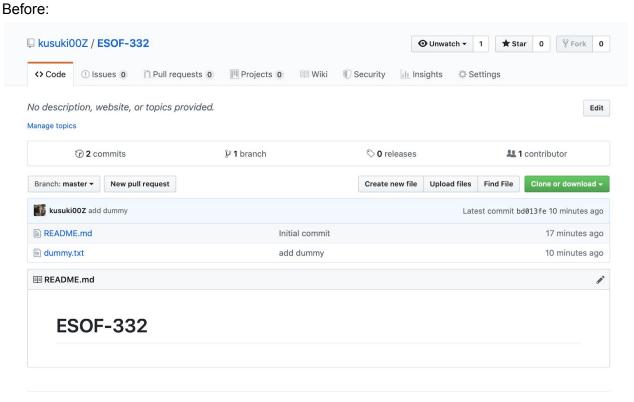Possible patterns: State

nyagua-5.0.4-src\src\util_panels\ConvertersPanel.java
Possible patterns: Adapter, Factory, State

nyagua-5.0.4-src\src\util_panels\SolutionsPanel.java
Possible patterns: Adapter, Factory, Iterator, Observer, State

      ii) The Design Pattern Finder searches for keywords in the source files. With the "Search in file content" box unchecked, it simply searches for keywords in the file names, but with the box checked, it actually searches the content for keywords. For example, if the file contains a variable name such as 'state', it can infer that those variables or classes probably relate to a State Pattern.

      iii) The method the Finder uses relies heavily on a lot of assumptions, such as that the programmer must follow normal naming conventions. If classes and variables are named ambiguously, the Finder won't find the patterns. A better way to do it would be to search for relationships between classes. For example, searching for instances of classes within other classes. If a class contains instances that match a certain pattern, such as an Adapter pattern, then that class probably uses the Adapter design pattern. This ignores naming conventions for a more in-depth, if more time consuming method.
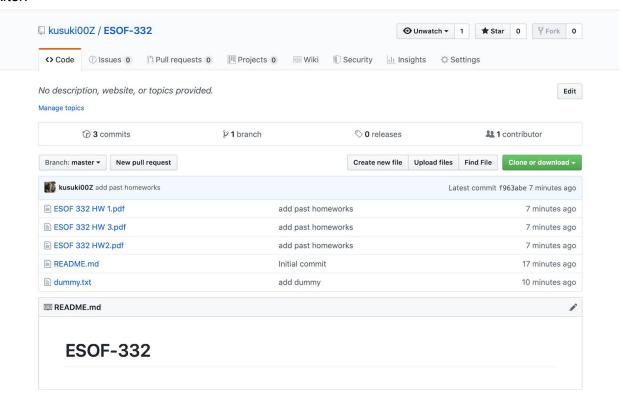
Question 2)

a) Make a git directory on the local machine, then use git clone to clone the repository to local machine, scp past homework files into this git repository, use git add . to add all files, then git commit -m to make the commit, and lastly git push origin to push the changes.

b) Github for Shengnan:
Before:

Commands used: (on next page)

```
shengnans-mbp:ESOF-332 shengnanzhou$ mvim dummy.txt
shengnans-mbp:ESOF-332 shengnanzhou$ ls
README.md       dummy.txt
shengnans-mbp:ESOF-332 shengnanzhou$ git push origin
Everything up-to-date
shengnans-mbp:ESOF-332 shengnanzhou$ ls
README.md       dummy.txt
shengnans-mbp:ESOF-332 shengnanzhou$ git commit -m "first commit"
On branch master
Your branch is up to date with 'origin/master'.

Untracked files:
        dummy.txt

nothing added to commit but untracked files present
shengnans-mbp:ESOF-332 shengnanzhou$ git add .
shengnans-mbp:ESOF-332 shengnanzhou$ ls
README.md       dummy.txt
shengnans-mbp:ESOF-332 shengnanzhou$ git commit -m "add dummy"
[master bd013fe] add dummy
 1 file changed, 1 insertion(+)
 create mode 100644 dummy.txt
shengnans-mbp:ESOF-332 shengnanzhou$ ls
README.md       dummy.txt
shengnans-mbp:ESOF-332 shengnanzhou$ git push origin
Enumerating objects: 4, done.
Counting objects: 100% (4/4), done.
Delta compression using up to 8 threads
Compressing objects: 100% (2/2), done.
Writing objects: 100% (3/3), 296 bytes | 296.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0)
To https://github.com/kusuki00Z/ESOF-332.git
   1f2151a..bd013fe  master -> master
```

```
shengnans-mbp:ESOF-332 shengnanzhou$ scp /Users/shengnanzhou/Computer\ Science/ESOF
\ 332/ESOF\ 332\ HW
ESOF 332 HW 3.pdf  ESOF 332 HW2.pdf
shengnans-mbp:ESOF-332 shengnanzhou$ scp /Users/shengnanzhou/Computer\ Science/ESOF
\ 332/ESOF\ 332\ HW2.pdf .
shengnans-mbp:ESOF-332 shengnanzhou$ ls
ESOF 332 HW2.pdf        README.md               dummy.txt
shengnans-mbp:ESOF-332 shengnanzhou$ scp /Users/shengnanzhou/Computer\ Science/ESOF
\ 332/ESOF\ 332\ HW\ 3.pdf .
shengnans-mbp:ESOF-332 shengnanzhou$ scp /Users/shengnanzhou/Computer\ Science/ESOF
\ 332/ESOF\ 332\ HW\ 1.pdf .
shengnans-mbp:ESOF-332 shengnanzhou$ ls
ESOF 332 HW 1.pdf       ESOF 332 HW2.pdf        dummy.txt
ESOF 332 HW 3.pdf       README.md
shengnans-mbp:ESOF-332 shengnanzhou$ git add .
shengnans-mbp:ESOF-332 shengnanzhou$ git commit -m "add past homeworks"
[master f963abe] add past homeworks
 3 files changed, 0 insertions(+), 0 deletions(-)
 create mode 100644 ESOF 332 HW 1.pdf
 create mode 100644 ESOF 332 HW 3.pdf
 create mode 100644 ESOF 332 HW2.pdf
shengnans-mbp:ESOF-332 shengnanzhou$ git push origin
Enumerating objects: 6, done.
Counting objects: 100% (6/6), done.
Delta compression using up to 8 threads
Compressing objects: 100% (5/5), done.
Writing objects: 100% (5/5), 429.99 KiB | 19.54 MiB/s, done.
Total 5 (delta 0), reused 0 (delta 0)
To https://github.com/kusuki00Z/ESOF-332.git
   bd013fe..f963abe  master -> master
shengnans-mbp:ESOF-332 shengnanzhou$ ▊
```

After:

kusuki00Z / ESOF-332

Unwatch ▼ 1   ★ Star 0   ⑂ Fork 0

<> Code   ⊙ Issues 0   Pull requests 0   Projects 0   Wiki   Security   Insights   Settings

No description, website, or topics provided.   Edit

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⊙ 3 commits   ⑂ 1 branch   ◇ 0 releases   1 contributor

Branch: master ▾   New pull request   Create new file   Upload files   Find File   Clone or download ▾

kusuki00Z add past homeworks   Latest commit f963abe 7 minutes ago

☐ ESOF 332 HW 1.pdf	add past homeworks	7 minutes ago
☐ ESOF 332 HW 3.pdf	add past homeworks	7 minutes ago
☐ ESOF 332 HW2.pdf	add past homeworks	7 minutes ago
☐ README.md	Initial commit	17 minutes ago
☐ dummy.txt	add dummy	10 minutes ago

☷ README.md   ✎

ESOF-332

Kyle's Github:

krathman257 / ESOF-322

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<> Code   ⊙ Issues 0   Pull requests 0   Projects 0   Wiki   Security   Insights   Settings

Files for Software Engineering class   Edit

Manage topics

⊙ 1 commit   ⑂ 1 branch   ◇ 0 releases   1 contributor

Branch: master ▾   New pull request   Create new file   Upload files   Find file   Clone or download ▾

krathman257 Adding files from ESOF 322   Latest commit b6630f8 6 minutes ago

☐ DesignPatternFinder	Adding files from ESOF 322	6 minutes ago
☐ nyagua-5.0.4-src/nyagua-5.0.4-src	Adding files from ESOF 322	6 minutes ago
☐ DesignPatternFinder.zip	Adding files from ESOF 322	6 minutes ago
☐ ESOF 322 HW 1.pdf	Adding files from ESOF 322	6 minutes ago
☐ ESOF 322 HW2.pdf	Adding files from ESOF 322	6 minutes ago
☐ ESOF 322 HW2.zip	Adding files from ESOF 322	6 minutes ago
☐ ESOF 322 HW3.docx	Adding files from ESOF 322	6 minutes ago
☐ ESOF 332 HW 3.pdf	Adding files from ESOF 322	6 minutes ago
☐ ESOF_322_HW1.xml	Adding files from ESOF 322	6 minutes ago
☐ ESOF_322_HW1_2.txt	Adding files from ESOF 322	6 minutes ago
☐ ESOF_322_HW2.xml	Adding files from ESOF 322	6 minutes ago
☐ ESOF_322_HW3_2.png	Adding files from ESOF 322	6 minutes ago
☐ ESOF_322_HW3_2.xml	Adding files from ESOF 322	6 minutes ago
☐ ESOF_322_HW3_3.drawio	Adding files from ESOF 322	6 minutes ago
☐ ESOF_322_HW3_3.png	Adding files from ESOF 322	6 minutes ago
☐ HW1_1.PNG	Adding files from ESOF 322	6 minutes ago
☐ HW1_2.PNG	Adding files from ESOF 322	6 minutes ago