GIT-FLOW Operations

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Password Generator Project Report

Project Description

The Password Generator is a Java-based command-line application that:

- Generates customizable secure passwords.
- Evaluates password strength based on user preferences.
- Saves generated passwords to a file (`generatedPassword.txt`) for record-keeping.

Features

1. **Customizable Passwords:**
   - Users can specify password length.
   - Options to include/exclude uppercase letters, numbers, and special characters.
2. **Password Strength Checker:**
   - Rates passwords as Weak, Moderate, Strong, or Very Strong.
3. **Persistent Storage:**
   - Appends generated passwords to `generatedPassword.txt`.
4. **Input Validation:**
   - Ensures valid numeric input for password length

GitFlow Implementation

Workflow Overview

The Gitflow workflow was implemented manually to simulate a structured collaborative environment. The branching strategy consisted of:

1. `master` **Branch:**
   - Reserved for production-ready code.
2. `develop` **Branch:**
   - Integration branch where all features were merged.
3. **Feature Branches:**
   - `feature/CheckStrength`: Added password strength evaluation.
   - `feature/saveToFile`: Implemented functionality to save passwords to a file.
4. **Release Branches:**
   - `release/v1.0`: Prepared version 1.0 for production.
5. **Hotfix Branches:**
   - `hotfix/inputVaildation`: Fixed a bug related to Number/boolean input handling.

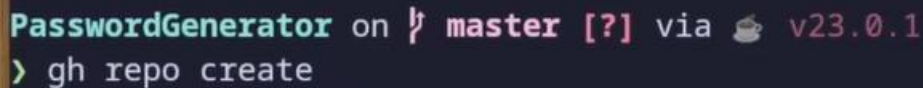## Key Adjustments

1. **Gitflow on Linux:**
   - Gitflow required a separate extension for proper functionality, which was unavailable on some systems. As a workaround, manual Gitflow commands were used to simulate the workflow.
2. **SSH for Collaborator:**
   - One collaborator accessed the repository using SSH for secure and efficient collaboration. SSH keys were configured to enable seamless push and pull operations.

Key Commands Used with GitHub CLI

1. Creating a Remote Repo using github CLI tool


```
PasswordGenerator on ⎇ master [?] via ☕ v23.0.1
> gh repo create
```

2. **Cloning the Repository:**

```
git clone https://github.com/Abdallah-Abu-Hussein/PasswordGenerator
```

3. **Creating and Switching Branches:**

```
gh repo checkout -b feature/chechkStrength develop
```

4. **Merging Feature Branches:**
5. git checkout develop
6. git merge feature/chechkStrength
7. gh pr createfeature/chechkStrength
8. gh pr merge

9. **Preparing a Release:**

```
git checkout -b release/v1.0 develop
```

10. **Finalizing a Release:**
11. git checkout master
12. git merge release/v1.0
13. git tag -a v1.0 -m "Release version 1.0"

14. **Applying a Hotfix:**
15. git checkout -b hotfix/InputVaildation master
16. git add .
17. git commit -m "Hotfix: Fixed boolean input issue"
18. gh pr create."
   gh pr merge

Challenges Faced

- **Manual Branch Management:**
  - Required careful attention to ensure all branches were merged in the correct order.
  - Regular testing was necessary to avoid conflicts.
- **Gitflow on Linux:**
  - Installing and configuring the Gitflow extension was not feasible in the Linux environment. This necessitated a manual approach to simulate Gitflow workflows.

- **SSH Configuration:**
  - Setting up SSH for secure communication between collaborators involved key generation and sharing. This added complexity but improved security.
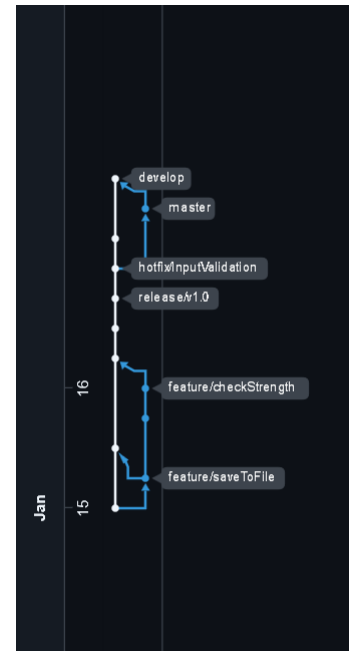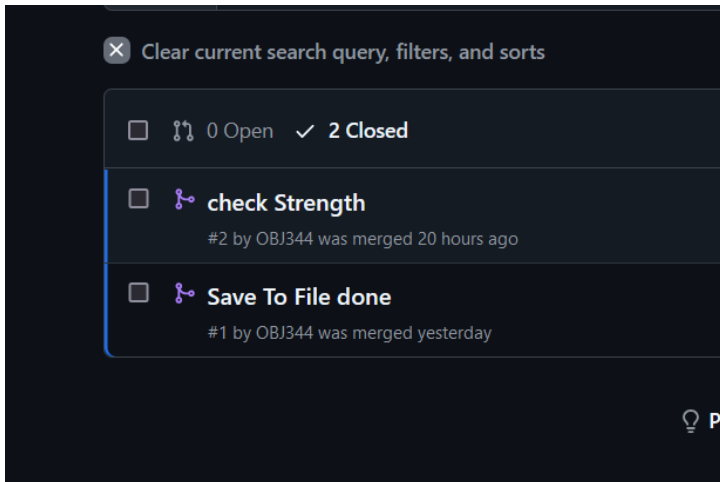
```
otfix/InputValidation, origin/develop, origin/HEAD, hotfix/InputValidation, develop)
| Author: Abdallah Abu Hussein <abdallh1133224466@gmail.com>
| Date:    Thu Jan 16 07:05:00 2025 +0300
|
|     added Input vaildation
|
* commit 2e598c7a7a3d1205e02e75f937e830aca4167564 (tag: v1.0, origin/release/v1.0, release/v1.0)
| Author: Abdallah Abu Hussein <abdallh1133224466@gmail.com>
| Date:    Thu Jan 16 05:54:15 2025 +0300
|
|     added A README
|
* commit fbafb00c0b5339e7e28c29cd20b77fe118f75e39
| Author: Abdallah Abu Hussein <abdallh1133224466@gmail.com>
| Date:    Thu Jan 16 00:11:43 2025 +0300
|
|     removed generated passwords.txt
|
*   commit 54e215caecbd004f01323a00d3be924ff6e524e6
|\  Merge: 92c0338 3e66e4d
| | Author: Abdallah <87309387+Abdallah-Abu-Hussein@users.noreply.github.com>
| | Date:    Thu Jan 16 00:05:59 2025 +0300
| |
| |     Merge pull request #2 from Abdallah-Abu-Hussein/feature/checkStrength
| |
| |     check Strength
| |
| * commit 3e66e4d4e11e5471ab6e6f44c3440b73ef7bd453 (origin/feature/checkStrength)
| | Author: abdallah <abdallh1133224466@gmail.com>
| | Date:    Thu Jan 16 00:02:57 2025 +0300
| |
| |     fixed text files issue
| |
| * commit a092ec8cd0d152d20a33c6d8200524cd824df67e
| | Author: abdallah <abdallh1133224466@gmail.com>
| | Date:    Wed Jan 15 23:58:01 2025 +0300
| |
| |     added a method to check for password Strength
| |
* | commit 92c033821b8cc0078cdff687769fd02e79f901f6
|\| Merge: e262916 e73faf6
| | Author: Abdallah <87309387+Abdallah-Abu-Hussein@users.noreply.github.com>
| | Date:    Wed Jan 15 23:46:50 2025 +0300
| |
| |     Merge pull request #1 from Abdallah-Abu-Hussein/feature/saveToFile
| |
| |     Save To File done
| |
| * commit e73faf6c424f3bb628844fba18e7629521b7b42b (origin/feature/saveToFile)
|/  Author: abdallah <abdallh1133224466@gmail.com>
|   Date:    Wed Jan 15 23:34:53 2025 +0300
|
|     added the ablity to save passwords in a file
|
* commit e2629163de7af631657c6b3a303a7f8a73b6d34c
  Author: Abdallah Abu Hussein <abdallh1133224466@gmail.com>
  Date:    Wed Jan 15 22:06:56 2025 +0300
```