Introduction to **Git** (with GitHub)

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This test will evaluate the familiarity of the Git VCS, which is commonly used by numerous FIRST®robotics teams to synchronize code collaboration between team members.

The following topics will be on this test:

- Git command syntax *

- Branches

- GitHub

- Raw files

- .gitignore

- Merge Conflicts

- When to use what commands

- Representing the Team online

- Programming Habits and Conventions

* Starred items are extremely important in programming a robot

DO NOT BEGIN UNTIL INSTRUCTED TO DO SO

Use this page for scratch work if desired

Scratch work will not be graded

PART ONE: Multiple Choice (5 pts)

Instructions: Choose the correct solution to the problem, there is only one correct answer for each problem unless otherwise stated.

1. The command `git add` has what purpose? (1 pt)

    (a) to make your files appear on the master branch

    (b) this is not a real git command

    (c) to make your files appear on the beta branch

    (d) to stage code for committing

2. The following output is most likey from what command? (1 pt)

    ```
    origin  https://username@github.com/Team1923/Power_Up_2018.git (fetch)
    origin  https://username@github.com/Team1923/Power_Up_2018.git (push)
    ```

    (a) git remote -v

    (b) git commit

    (c) git yield +x

    (d) git add .

3. Which command starts up a git repository in the current folder? (1 pt)

    (a) git begin

    (b) git start

    (c) git init

    (d) git return .

4. Which of the following you would add to a *.gitignore*? (11 pts)

    (a) /src/

    (b) *.class

    (c) *.java

    (d) *.ino

5. Which is an actual Git® Command? (1 pt)

    (a) git eliminate

    (b) git cruft

    (c) git status

    (d) git yield

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Section II: Free Response (10 pts)

Instructions: Write the most efficient solution to the following methods.

6. Can changes be made directly on the GitHub website? If so, then why do we not make all changes there? If not, then why can't we make changes there? (2 pts)

7. How can merge conflicts be avoided? List 2 different ways for full credit (2 pts)

8. When do you commit to master? to beta? to other branches? (3 pts)

9. State a descriptive yet short commit message if git status returned the following? (2 pts)

```
On branch master
Your branch is up to date with 'origin/master'.

Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
  (use "git checkout -- <file>..." to discard changes in working directory)

        modified:   src/org/usfirst/frc/team1923/robot/utils/Converter.java
        modified:    Power_Up_2018/.idea/workspace.xml

Untracked files:
  (use "git add <file>..." to include in what will be committed)

        Power_Up_2018.iml

no changes added to commit (use "git add" and/or "git commit -a")
```

Extra Credit:

10. Name all git command you know. One point will be awarded for every command that was not mentioned on this test. (1 pt each)

END OF EXAM