KONECTA

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Task 1

DevOps

Contents

1 A list of all Git commands:

git init

git add calculator.py

git commit -m "init: Add calculator with add, subtract, multiply"

git add calculator.py

git commit -m "feat: Add divide function with zero check"

git add calculator.py

git commit -m "fix: Optimize subtract function logic (introducing bug)"

git log

git diff c310e1a

git stash

git revert c310e1a

git stash pop

git add calculator.py

git commit -m "feat: Re-apply experimental Fibonacci print"

git push -u origin main

2 Screenshots:


```
PS D:\Konecta\1\task_1\Exampels> cd ..
PS D:\Konecta\1\task_1> ls


        Directory: D:\Konecta\1\task_1


Mode                 LastWriteTime         Length Name
----                 -------------         ------ ----
d-----         7/30/2025   9:01 PM                Exampels
d-----         7/31/2025  12:02 AM                Tasks


PS D:\Konecta\1\task_1> cd .\Tasks\
PS D:\Konecta\1\task_1\Tasks> ls


        Directory: D:\Konecta\1\task_1\Tasks


Mode                 LastWriteTime         Length Name
----                 -------------         ------ ----
d-----         7/31/2025  12:02 AM                my-first-git-project


PS D:\Konecta\1\task_1\Tasks> cd .\my-first-git-project\
PS D:\Konecta\1\task_1\Tasks\my-first-git-project> ls
PS D:\Konecta\1\task_1\Tasks\my-first-git-project> git init
Initialized empty Git repository in D:/Konecta/1/task_1/Tasks/my-first-git-project/.git/
PS D:\Konecta\1\task_1\Tasks\my-first-git-project> |
```

```python
1   def add(a,b):
2       #Returns the sum of a and b.
3       return a + b
4   def subtract(a, b):
5       #Returns the difference of a and b.
6       return a - b
7   print("This is a simple calculator module.")
8
9   if __name__ == "__main__":
10      print("Testing the calculator functions...")
11      print("Addition of 5 and 3:", add(5, 3))
12      print("Subtraction of 5 from 10:", subtract(10, 5))
```

PROBLEMS OUTPUT TERMINAL PORTS DEBUG CONSOLE

```
PS D:\Konecta\1\task_1\Tasks\my-first-git-project> git add calculator.py
PS D:\Konecta\1\task_1\Tasks\my-first-git-project> git commit -m "feat: Add basic calculator functions (add, subtract)"
[master (root-commit) 14a0927] feat: Add basic calculator functions (add, subtract)
 1 file changed, 12 insertions(+)
 create mode 100644 calculator.py
PS D:\Konecta\1\task_1\Tasks\my-first-git-project> |
```

```python
 9          return a * b
10    print("This is a simple calculator module.")
11
12    if __name__ == "__main__":
13        print("Testing the calculator functions...")
14        print("Addition of 5 and 3:", add(5, 3))
15        print("Subtraction of 5 from 10:", subtract(10, 5))
16        print("Multiplication of 4 and 6:", multiply(4, 6))
```

PROBLEMS   OUTPUT   TERMINAL   PORTS   DEBUG CONSOLE

```
PS D:\Konecta\1\task_1\Tasks\my-first-git-project> git add calculator.py
PS D:\Konecta\1\task_1\Tasks\my-first-git-project> git commit -m "feat: Add basic calculator functions (add, subtract)"
[master (root-commit) 14a0927] feat: Add basic calculator functions (add, subtract)
 1 file changed, 12 insertions(+)
 create mode 100644 calculator.py
PS D:\Konecta\1\task_1\Tasks\my-first-git-project> git add calculator.py
PS D:\Konecta\1\task_1\Tasks\my-first-git-project> git commit -m "feat: Add multiply function"
[master ce7f726] feat: Add multiply function
 1 file changed, 5 insertions(+), 1 deletion(-)
PS D:\Konecta\1\task_1\Tasks\my-first-git-project> git checkout main
error: pathspec 'main' did not match any file(s) known to git
PS D:\Konecta\1\task_1\Tasks\my-first-git-project> git branch -M main
PS D:\Konecta\1\task_1\Tasks\my-first-git-project> git remote add origin https://github.com/tarek-code/my-first-git-project.git
PS D:\Konecta\1\task_1\Tasks\my-first-git-project> git checkout main
Already on 'main'
PS D:\Konecta\1\task_1\Tasks\my-first-git-project> git add calculator.py
PS D:\Konecta\1\task_1\Tasks\my-first-git-project> git commit -m "feat: Add multiply function"
On branch main
nothing to commit, working tree clean
PS D:\Konecta\1\task_1\Tasks\my-first-git-project>
```

```python
 6          return a + b # bug intentional
 7    def multiply(a, b):
 8        #Returns the product of a and b.
 9        return a * b
10    print("This is a simple calculator module.")
11
12    if __name__ == "__main__":
13        print("Testing the calculator functions...")
14        print("Addition of 5 and 3:", add(5, 3))
15        print("Subtraction of 5 from 10:", subtract(10, 5))
16        print("Multiplication of 4 and 6:", multiply(4, 6))
```

PROBLEMS   OUTPUT   TERMINAL   PORTS   DEBUG CONSOLE

```
[master ce7f726] feat: Add multiply function
 1 file changed, 5 insertions(+), 1 deletion(-)
PS D:\Konecta\1\task_1\Tasks\my-first-git-project> git checkout main
error: pathspec 'main' did not match any file(s) known to git
PS D:\Konecta\1\task_1\Tasks\my-first-git-project> git branch -M main
PS D:\Konecta\1\task_1\Tasks\my-first-git-project> git remote add origin https://github.com/tarek-code/my-first-git-project.git
PS D:\Konecta\1\task_1\Tasks\my-first-git-project> git checkout main
Already on 'main'
PS D:\Konecta\1\task_1\Tasks\my-first-git-project> git add calculator.py
PS D:\Konecta\1\task_1\Tasks\my-first-git-project> git commit -m "feat: Add multiply function"
On branch main
nothing to commit, working tree clean
PS D:\Konecta\1\task_1\Tasks\my-first-git-project> git add calculator.py
PS D:\Konecta\1\task_1\Tasks\my-first-git-project> git commit -m "fix: Optimize subtract function logic (introducing bug)"
[main c310e1a] fix: Optimize subtract function logic (introducing bug)
 1 file changed, 1 insertion(+), 1 deletion(-)
PS D:\Konecta\1\task_1\Tasks\my-first-git-project> python calculator.py
This is a simple calculator module.
Testing the calculator functions...
Addition of 5 and 3: 8
Subtraction of 5 from 10: 15
Multiplication of 4 and 6: 24
PS D:\Konecta\1\task_1\Tasks\my-first-git-project>
```

```
⬢ calculator.py ×
⬢ calculator.py > ...
  9        return a * b
 10   def divide(a, b):
 11        #Returns the quotient of a and b.
 12        if b == 0:
 13            raise ValueError("Cannot divide by zero.")
 14        return a / b
 15   print("This is a simple calculator module.")
 16
 17   if __name__ == "__main__":
 18        print("Testing the calculator functions...")
 19        print("Addition of 5 and 3:", add(5, 3))
 20        print("Subtraction of 5 from 10:", subtract(10, 5))
 21        print("Multiplication of 4 and 6:", multiply(4, 6))
 22        print("Division of 8 by 2:", divide(8, 2))
```

```
PROBLEMS    OUTPUT    TERMINAL    PORTS    DEBUG CONSOLE

PS D:\Konecta\1\task_1\Tasks\my-first-git-project> git commit -m "fix: Optimize subtract function logic (introducing bug)"
[main c310e1a] fix: Optimize subtract function logic (introducing bug)
 1 file changed, 1 insertion(+), 1 deletion(-)
PS D:\Konecta\1\task_1\Tasks\my-first-git-project> python calculator.py
This is a simple calculator module.
Testing the calculator functions...
Addition of 5 and 3: 8
Subtraction of 5 from 10: 15
Multiplication of 4 and 6: 24
PS D:\Konecta\1\task_1\Tasks\my-first-git-project> git add calculator.py
PS D:\Konecta\1\task_1\Tasks\my-first-git-project> git commit -m "feat: Add divide function with zero check"
[main 5cbd490] feat: Add divide function with zero check
 1 file changed, 7 insertions(+), 1 deletion(-)
PS D:\Konecta\1\task_1\Tasks\my-first-git-project>
```

```
⬢ calculator.py M ×
⬢ calculator.py > ...
 14        return a / b
 15   print("This is a simple calculator module.")
 16
 17   if __name__ == "__main__":
 18        print("Testing the calculator functions...")
 19        print("Addition of 5 and 3:", add(5, 3))
 20        print("Subtraction of 5 from 10:", subtract(10, 5))
 21        print("Multiplication of 4 and 6:", multiply(4, 6))
 22        print("Division of 8 by 2:", divide(8, 2))
 23        print("Expermental feature: Fibonacci sequence next")
```

```
PROBLEMS    OUTPUT    TERMINAL    PORTS    DEBUG CONSOLE

[main c310e1a] fix: Optimize subtract function logic (introducing bug)
 1 file changed, 1 insertion(+), 1 deletion(-)
PS D:\Konecta\1\task_1\Tasks\my-first-git-project> python calculator.py
This is a simple calculator module.
Testing the calculator functions...
Addition of 5 and 3: 8
Subtraction of 5 from 10: 15
Multiplication of 4 and 6: 24
PS D:\Konecta\1\task_1\Tasks\my-first-git-project> git add calculator.py
PS D:\Konecta\1\task_1\Tasks\my-first-git-project> git commit -m "feat: Add divide function with zero check"
[main 5cbd490] feat: Add divide function with zero check
 1 file changed, 7 insertions(+), 1 deletion(-)
PS D:\Konecta\1\task_1\Tasks\my-first-git-project> git status
On branch main
Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
  (use "git restore <file>..." to discard changes in working directory)
        modified:   calculator.py

no changes added to commit (use "git add" and/or "git commit -a")
PS D:\Konecta\1\task_1\Tasks\my-first-git-project>
```

```python
 14         return a / b
 15    print("This is a simple calculator module.")
 16
 17    if __name__ == "__main__":
 18        print("Testing the calculator functions...")
 19        print("Addition of 5 and 3:", add(5, 3))
 20        print("Subtraction of 5 from 10:", subtract(10, 5))
 21        print("Multiplication of 4 and 6:", multiply(4, 6))
 22        print("Division of 8 by 2:", divide(8, 2))
 23        print("Expermental feature: Fibonacci sequence next")
```

PROBLEMS   OUTPUT   TERMINAL   PORTS   DEBUG CONSOLE

```
  (use "git add <file>..." to update what will be committed)
  (use "git restore <file>..." to discard changes in working directory)
        modified:   calculator.py

no changes added to commit (use "git add" and/or "git commit -a")
PS D:\Konecta\1\task_1\Tasks\my-first-git-project> git log --oneline
5cbd490 (HEAD -> main) feat: Add divide function with zero check
c310e1a fix: Optimize subtract function logic (introducing bug)
ce7f726 feat: Add multiply function
14a0927 feat: Add basic calculator functions (add, subtract)
PS D:\Konecta\1\task_1\Tasks\my-first-git-project> git diff c310e1a ce7f726
diff --git a/calculator.py b/calculator.py
index 58699ed..b8d7044 100644
--- a/calculator.py
+++ b/calculator.py
@@ -3,7 +3,7 @@ def add(a,b):
     return a + b
 def subtract(a, b):
     #Returns the difference of a and b.
-    return a + b # bug intentional
+    return a - b
 def multiply(a, b):
     #Returns the product of a and b.
     return a * b
PS D:\Konecta\1\task_1\Tasks\my-first-git-project>
```

```
      14          return a / b
      15      print("This is a simple calculator module.")
      16
      17      if __name__ == "__main__":
      18          print("Testing the calculator functions...")
      19          print("Addition of 5 and 3:", add(5, 3))
      20          print("Subtraction of 5 from 10:", subtract(10, 5))
      21          print("Multiplication of 4 and 6:", multiply(4, 6))
      22          print("Division of 8 by 2:", divide(8, 2))
```

PROBLEMS   OUTPUT   **TERMINAL**   PORTS   DEBUG CONSOLE

```
        modified:   calculator.py

no changes added to commit (use "git add" and/or "git commit -a")
PS D:\Konecta\1\task_1\Tasks\my-first-git-project> git log --oneline
5cbd490 (HEAD -> main) feat: Add divide function with zero check
c310e1a fix: Optimize subtract function logic (introducing bug)
ce7f726 feat: Add multiply function
14a0927 feat: Add basic calculator functions (add, subtract)
PS D:\Konecta\1\task_1\Tasks\my-first-git-project> git diff c310e1a ce7f726
diff --git a/calculator.py b/calculator.py
index 58699ed..b8d7044 100644
--- a/calculator.py
+++ b/calculator.py
@@ -3,7 +3,7 @@ def add(a,b):
      return a + b
 def subtract(a, b):
      #Returns the difference of a and b.
-     return a + b # bug intentional
+     return a - b
 def multiply(a, b):
      #Returns the product of a and b.
      return a * b
PS D:\Konecta\1\task_1\Tasks\my-first-git-project> git stash
Saved working directory and index state WIP on main: 5cbd490 feat: Add divide function with zero check
PS D:\Konecta\1\task_1\Tasks\my-first-git-project>
```

calculator.py M ✕

```
      14          return a / b
      15      print("This is a simple calculator module.")
      16
      17      if __name__ == "__main__":
      18          print("Testing the calculator functions...")
      19          print("Addition of 5 and 3:", add(5, 3))
      20          print("Subtraction of 5 from 10:", subtract(10, 5))
      21          print("Multiplication of 4 and 6:", multiply(4, 6))
      22          print("Division of 8 by 2:", divide(8, 2))
```

PROBLEMS   OUTPUT   **TERMINAL**   PORTS   DEBUG CONSOLE

```
Revert "fix: Optimize subtract function logic (introducing bug)"

This reverts commit c310e1aba2f2afa05676e7c170404cae4850b1b9.

# Please enter the commit message for your changes. Lines starting
# with '#' will be ignored, and an empty message aborts the commit.
#
# On branch main
# Changes to be committed:
#       modified:   calculator.py
#
~
~
~
~
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~
~
~
~
~
~
~
.git/COMMIT_EDITMSG [unix]  (00:50 31/07/2025)
"/d/Konecta/1/task_1/Tasks/my-first-git-project/.git/COMMIT_EDITMSG" [unix] 11L, 340B
```

```python
def add(a,b):
    #Returns the sum of a and b.
    return a + b
def subtract(a, b):
    #Returns the difference of a and b.
    return a - b
def multiply(a, b):
    #Returns the product of a and b.
    return a * b
def divide(a, b):
    #Returns the quotient of a and b.
    if b == 0:
        raise ValueError("Cannot divide by zero.")
    return a / b
print("This is a simple calculator module.")

if __name__ == "__main__":
    print("Testing the calculator functions...")
    print("Addition of 5 and 3:", add(5, 3))
    print("Subtraction of 5 from 10:", subtract(10, 5))
    print("Multiplication of 4 and 6:", multiply(4, 6))
    print("Division of 8 by 2:", divide(8, 2))
```

PROBLEMS   OUTPUT   TERMINAL   PORTS   DEBUG CONSOLE

```
+    return a - b
 def multiply(a, b):
     #Returns the product of a and b.
     return a * b
PS D:\Konecta\1\task_1\Tasks\my-first-git-project> git stash
Saved working directory and index state WIP on main: 5cbd490 feat: Add divide function with zero check
PS D:\Konecta\1\task_1\Tasks\my-first-git-project> git revert c310e1a
Auto-merging calculator.py
[main 0cacadb] Revert "fix: Optimize subtract function logic (introducing bug)"
 1 file changed, 1 insertion(+), 1 deletion(-)
PS D:\Konecta\1\task_1\Tasks\my-first-git-project>
```

```python
calculator.py M ✕

calculator.py > ...
1     def add(a,b):
2         #Returns the sum of a and b.
3         return a + b
4     def subtract(a, b):
5         #Returns the difference of a and b.
6         return a - b
7     def multiply(a, b):
8         #Returns the product of a and b.
9         return a * b
10    def divide(a, b):
11        #Returns the quotient of a and b.
12        if b == 0:
13            raise ValueError("Cannot divide by zero.")
14        return a / b
15    print("This is a simple calculator module.")
16
17    if __name__ == "__main__":
18        print("Testing the calculator functions...")
19        print("Addition of 5 and 3:", add(5, 3))
20        print("Subtraction of 5 from 10:", subtract(10, 5))
21        print("Multiplication of 4 and 6:", multiply(4, 6))
22        print("Division of 8 by 2:", divide(8, 2))
23        print("Expermental feature: Fibonacci sequence next")
```

PROBLEMS   OUTPUT   **TERMINAL**   PORTS   DEBUG CONSOLE

```
PS D:\Konecta\1\task_1\Tasks\my-first-git-project> git stash pop
Auto-merging calculator.py
On branch main
Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
  (use "git restore <file>..." to discard changes in working directory)
        modified:   calculator.py

no changes added to commit (use "git add" and/or "git commit -a")
Dropped refs/stash@{0} (4cb4056ec68bc7c87dddccc8ae3f9e499f0b8723)
PS D:\Konecta\1\task_1\Tasks\my-first-git-project>
```

```python
   10   def divide(a, b):

   13           raise ValueError("Cannot divide by zero.")
   14       return a / b
   15   print("This is a simple calculator module.")
   16
   17   if __name__ == "__main__":
   18       print("Testing the calculator functions...")
   19       print("Addition of 5 and 3:", add(5, 3))
   20       print("Subtraction of 5 from 10:", subtract(10, 5))
   21       print("Multiplication of 4 and 6:", multiply(4, 6))
   22       print("Division of 8 by 2:", divide(8, 2))
   23       print("Expermental feature: Fibonacci sequence next")
```

PROBLEMS   OUTPUT   TERMINAL   PORTS   DEBUG CONSOLE

```
Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
  (use "git restore <file>..." to discard changes in working directory)
        modified:   calculator.py

no changes added to commit (use "git add" and/or "git commit -a")
Dropped refs/stash@{0} (4cb4056ec68bc7c87dddccc8ae3f9e499f0b8723)
PS D:\Konecta\1\task_1\Tasks\my-first-git-project> git add calculator.py
PS D:\Konecta\1\task_1\Tasks\my-first-git-project> git commit -m "feat: Re-apply divide function after revert"
[main f04c3e5] feat: Re-apply divide function after revert
 1 file changed, 2 insertions(+), 1 deletion(-)
PS D:\Konecta\1\task_1\Tasks\my-first-git-project> git push -u origin main
Enumerating objects: 18, done.
Counting objects: 100% (18/18), done.
Delta compression using up to 12 threads
Compressing objects: 100% (12/12), done.
Writing objects: 100% (18/18), 1.89 KiB | 241.00 KiB/s, done.
Total 18 (delta 5), reused 0 (delta 0), pack-reused 0 (from 0)
remote: Resolving deltas: 100% (5/5), done.
To https://github.com/tarek-code/my-first-git-project.git
 * [new branch]      main -> main
branch 'main' set up to track 'origin/main'.
PS D:\Konecta\1\task_1\Tasks\my-first-git-project>
```

my-first-git-project `Public`

ᛘ **main** ▾   ᛘ **1 Branch** 🏷 **0 Tags**

🔍 Go to file   t   Add fi

🖼 **tarek-code** feat: Re-apply divide function after revert   f04c3e5 · 1 min

📄 calculator.py   feat: Re-apply divide function after revert

📖 **README**

📖

Add a README

Help people interested in this repository understand your project by adding a README.

Add a README

🖼 **tarek-code** feat: Re-apply divide function after revert

Code **Blame**   23 lines (22 loc) · 737 Bytes   🐙 Raw 📋 ⬇ ✏ ▾ ⟨⟩

```python
 1    def add(a,b):
 2        #Returns the sum of a and b.
 3        return a + b
 4    def subtract(a, b):
 5        #Returns the difference of a and b.
 6        return a - b
 7    def multiply(a, b):
 8        #Returns the product of a and b.
 9        return a * b
10    def divide(a, b):
11        #Returns the quotient of a and b.
12        if b == 0:
13            raise ValueError("Cannot divide by zero.")
14        return a / b
15    print("This is a simple calculator module.")
16
17    if __name__ == "__main__":
18        print("Testing the calculator functions...")
19        print("Addition of 5 and 3:", add(5, 3))
20        print("Subtraction of 5 from 10:", subtract(10, 5))
21        print("Multiplication of 4 and 6:", multiply(4, 6))
22        print("Division of 8 by 2:", divide(8, 2))
23        print("Expermental feature: Fibonacci sequence next")
```

3 Final calculator.py file after the fix:

```python
def add(a,b):

    #Returns the sum of a and b.

    return a + b

def subtract(a, b):

    #Returns the difference of a and b.

    return a - b

def multiply(a, b):

    #Returns the product of a and b.

    return a * b

def divide(a, b):

    #Returns the quotient of a and b.

    if b == 0:

        raise ValueError("Cannot divide by zero.")

    return a / b

print("This is a simple calculator module.")


if __name__ == "__main__":

    print("Testing the calculator functions...")

    print("Addition of 5 and 3:", add(5, 3))

    print("Subtraction of 5 from 10:", subtract(10, 5))

    print("Multiplication of 4 and 6:", multiply(4, 6))

    print("Division of 8 by 2:", divide(8, 2))

    print("Expermental feature: Fibonacci sequence next")
```

4 Written Explanations:

4.1 Git log and git diff

Git log showed me the history of commits, git diff c310e1a showed the exact change in the subtract function

4.2 Git stash was necessary

Git stash to save temporarily the code until solve the issue then go back to full code and combine them together.

4.3 Choice between git reset --hard and git revert

Revert because it safely undoes a commit without deleting history, reset --hard would remove history and uncommitted changes.

I'd use reset --hard only in personal or local-only projects

4.4 Difference between git stash pop and git stash apply

Both restore stashed changes, but stash pop removes from the stash list after applying, stash apply keeps in stash.