

IT & Computer Science

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Section: SE (GREEN)

Date: 08/02/2025

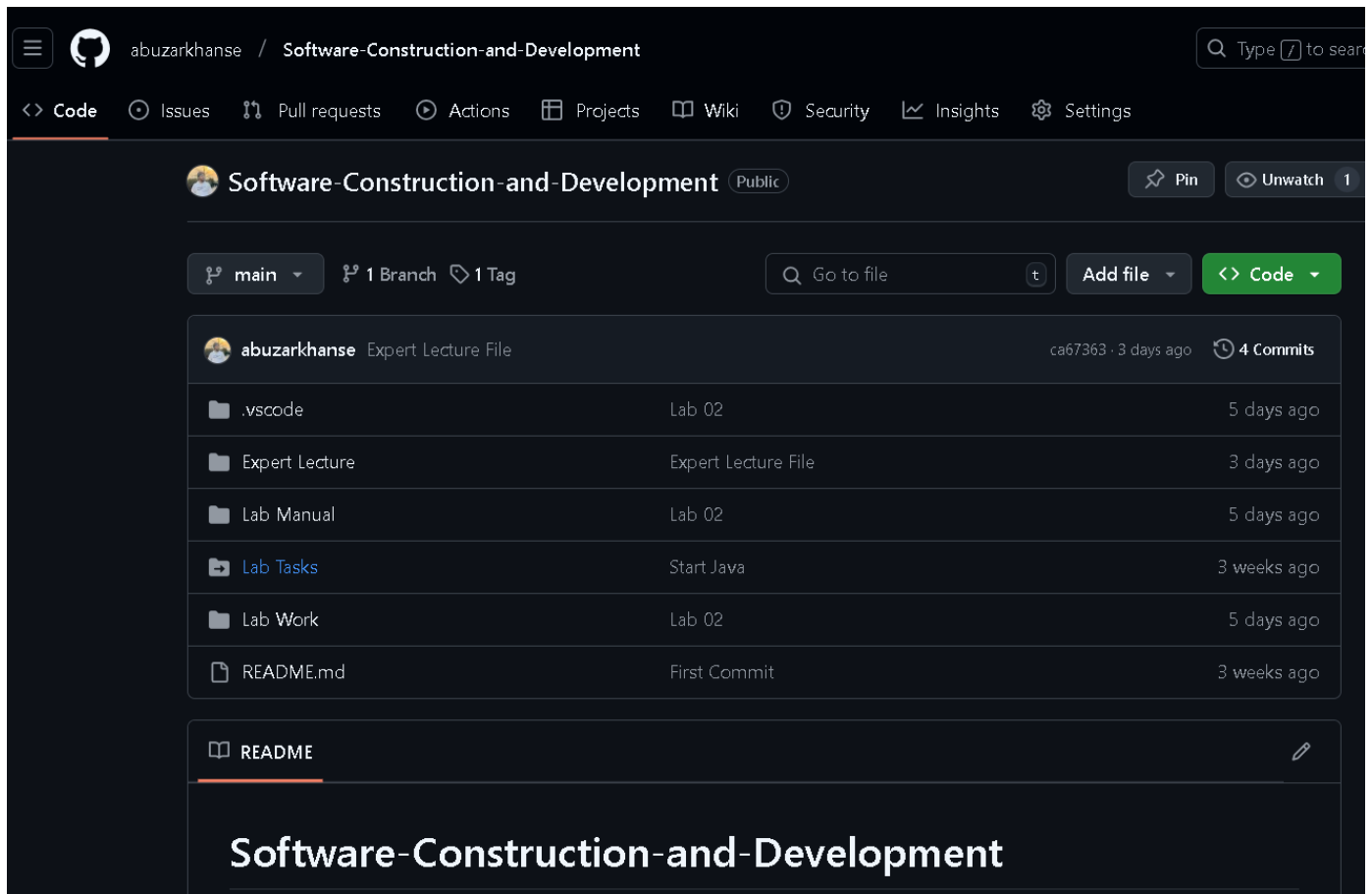
Software Construction and Development

6th-Semester

Lab 03

Lab Exercise:

01. New GitHub Repository:



In the above screenshot it shown that i have created a repository already for SCD lab where i am pushing all the labs tasks and Lab manuals. Also, i already Colone it and connected to VS code foe pushing commits.

Linke to Repository: <https://github.com/abuzarkhanse>

Now i will write a java program for calculator to preform a basic tasks operation (addition, subtraction, multiplication and division).

Java Program for Calculator:

```
import java.util.Scanner;

public class ArithmeticOperations {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);

        // Get user input
        System.out.print("Enter first number: ");
        double num1 = scanner.nextDouble();

        System.out.print("Enter second number: ");
        double num2 = scanner.nextDouble();

        System.out.println("Choose an operation: +, -, *, /");
        char operation = scanner.next().charAt(0);

        double result;

        switch (operation) {
            case '+':
                result = num1 + num2;
                System.out.println("Result: " + result);
                break;
            case '-':
                result = num1 - num2;
                System.out.println("Result: " + result);
                break;
            case '*':
                result = num1 * num2;
                System.out.println("Result: " + result);
                break;
            case '/':
                if (num2 != 0) {
                    result = num1 / num2;
                    System.out.println("Result: " + result);
                } else {
                    System.out.println("Error: Division by zero is not allowed.");
                }
                break;
            default:
                System.out.println("Invalid operation!");
        }
    }
}
```

```
scanner.close();
} }
```

Output:

✓ SCD LAB

- > .vscode
- > Expert Lecture In Lab03
- > Lab Manual
- ✓ Lab Tasks
 - > Lab01
 - > Lab02
 - ✓ Lab03
 - ArithmeticOperation... U
 - ArithmeticOperation... U
- > Lab Work
 - README.md

> OUTLINE

```

PS C:\Users\mrabu\Desktop\6th Semester\SCD Lab> cd "c:\Users\mrabu\
java } ; if ($?) { java ArithmeticOperations }
Enter first number: 5
Enter second number: 5
Choose an operation: +, -, *, /
*
Result: 25.0
PS C:\Users\mrabu\Desktop\6th Semester\SCD Lab\Lab Tasks\Lab03> cd
meticOperations.java } ; if ($?) { java ArithmeticOperations }
Enter first number: 6
Enter second number: 9
Choose an operation: +, -, *, /
-
Result: -3.0
PS C:\Users\mrabu\Desktop\6th Semester\SCD Lab\Lab Tasks\Lab03> cd
meticOperations.java } ; if ($?) { java ArithmeticOperations }
Enter first number: 10
Enter second number: 10
Choose an operation: +, -, *, /
+
Result: 20.0
PS C:\Users\mrabu\Desktop\6th Semester\SCD Lab\Lab Tasks\Lab03> cd
meticOperations.java } ; if ($?) { java ArithmeticOperations }
Enter first number: 100
Enter second number: 50
Choose an operation: +, -, *, /
/
Result: 2.0
PS C:\Users\mrabu\Desktop\6th Semester\SCD Lab\Lab Tasks\Lab03> cd
meticOperations.java } ; if ($?) { java ArithmeticOperations }
Enter first number: 10
Enter second number: 9
Choose an operation: +, -, *, /
-
Result: 1.0
PS C:\Users\mrabu\Desktop\6th Semester\SCD Lab\Lab Tasks\Lab03> 
```

- ✓ To perform these operations of calculator i user **Switch** Statement for choosing the operations
- ✓ User will first enter two values then its operations like what are they want: Multiplying it, Dividing, Adding and Subtraction.

Commit and Pushing Initial Code to GitHub:

```

PS C:\Users\mrabu\Desktop\6th Semester\SCD Lab> git init
Reinitialized existing Git repository in C:/Users/mrabu/Desktop/6th Semester/SCD Lab/.git/
PS C:\Users\mrabu\Desktop\6th Semester\SCD Lab> git add .
PS C:\Users\mrabu\Desktop\6th Semester\SCD Lab> git commit -m "Lab 03"
[main cf8f20b] Lab 03
2 files changed, 0 insertions(+), 0 deletions(-)
rename {Expert Lecture => Expert Lecture In Lab03}/git-error-1738819518502.txt (100%)
rename {Expert Lecture => Expert Lecture In Lab03}/sample.txt (100%)
PS C:\Users\mrabu\Desktop\6th Semester\SCD Lab> git push origin main
Enumerating objects: 3, done.
Counting objects: 100% (3/3), done.
Delta compression using up to 12 threads
rename {Expert Lecture => Expert Lecture In Lab03}/sample.txt (100%)
PS C:\Users\mrabu\Desktop\6th Semester\SCD Lab> git push origin main
Enumerating objects: 3, done.
Counting objects: 100% (3/3), done.
rename {Expert Lecture => Expert Lecture In Lab03}/sample.txt (100%)
PS C:\Users\mrabu\Desktop\6th Semester\SCD Lab> git push origin main
Enumerating objects: 3, done.
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rename {Expert Lecture => Expert Lecture In Lab03}/sample.txt (100%)
rename {Expert Lecture => Expert Lecture In Lab03}/sample.txt (100%)
PS C:\Users\mrabu\Desktop\6th Semester\SCD Lab> git push origin main
Enumerating objects: 3, done.
Counting objects: 100% (3/3), done.
Delta compression using up to 12 threads
Compressing objects: 100% (2/2), done.
Writing objects: 100% (2/2), 231 bytes | 231.00 KiB/s, done.
Total 2 (delta 1), reused 0 (delta 0), pack-reused 0 (from 0)
remote: Resolving deltas: 100% (1/1), completed with 1 local object.
To https://github.com/abuzarkhanse/Software-Construction-and-Development.git
ca67363..cf8f20b main -> main
PS C:\Users\mrabu\Desktop\6th Semester\SCD Lab> 

```

Through **Git** Commands i have make a commit and push Lab 03 Tasks to GitHub repository successfully.

Creating New Branch:


Named: *advanced-features*.

```
PS C:\Users\mrabu\Desktop\6th Semester\SCD Lab> git checkout -b advanced-features
Switched to a new branch 'advanced-features'
PS C:\Users\mrabu\Desktop\6th Semester\SCD Lab> git push origin advanced-features
Total 0 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
remote:
remote: Create a pull request for 'advanced-features' on GitHub by visiting:
remote:   https://github.com/abuzarkhanse/Software-Construction-and-Development/pull/new/advanced-features
remote:
To https://github.com/abuzarkhanse/Software-Construction-and-Development.git
 * [new branch]      advanced-features -> advanced-features
PS C:\Users\mrabu\Desktop\6th Semester\SCD Lab> █
```


Test the new branch of advanced-features by commit and push new file:




```
PS C:\Users\mrabu\Desktop\6th Semester\SCD Lab> git init
Reinitialized existing Git repository in C:/Users/mrabu/Desktop/6th Semester/SCD Lab/.git/
PS C:\Users\mrabu\Desktop\6th Semester\SCD Lab> git add test.txt
PS C:\Users\mrabu\Desktop\6th Semester\SCD Lab> git commit -m "Test for Adanced-Feature"
[advanced-features fb55f0f] Test for Adanced-Feature
1 file changed, 1 insertion(+)
create mode 100644 test.txt
PS C:\Users\mrabu\Desktop\6th Semester\SCD Lab> git push origin advanced-features
Enumerating objects: 4, done.
Counting objects: 100% (4/4), done.
Delta compression using up to 12 threads
Compressing objects: 100% (2/2), done.
Writing objects: 100% (3/3), 321 bytes | 321.00 KiB/s, done.
Total 3 (delta 1), reused 0 (delta 0), pack-reused 0 (from 0)
remote: Resolving deltas: 100% (1/1), completed with 1 local object.
To https://github.com/abuzarkhanse/Software-Construction-and-Development.git
 cf8f20b..fb55f0f  advanced-features -> advanced-features
PS C:\Users\mrabu\Desktop\6th Semester\SCD Lab> █
```

Result on GitHub:


Software-Construction-and-Development
Public

Pin
Unwatch
1



 **advanced-features** had recent pushes 1 minute ago
Compare & pull request

 **advanced-features**
 **2 Branches**
 **1 Tag**

t



Add file
<> Code





This branch is **1 commit ahead of** main.
Contribute


 abuzarkhanse Test for Adanced-Feature	fb55f0f · 3 minutes ago	 6 Commits
<div style="display: flex; align-items: center;"> <div style="width: 20px; height: 20px; background-color: #555; margin-right: 5px;"></div> <div> <div style="background-color: #555; padding: 2px 5px; border-radius: 3px;">.vscode</div> </div> </div>	Lab 02	5 days ago
<div style="display: flex; align-items: center;"> <div style="width: 20px; height: 20px; background-color: #555; margin-right: 5px;"></div> <div> <div style="background-color: #555; padding: 2px 5px; border-radius: 3px;">Expert Lecture In Lab03</div> </div> </div>	Lab 03	22 minutes ago
<div style="display: flex; align-items: center;"> <div style="width: 20px; height: 20px; background-color: #555; margin-right: 5px;"></div> <div> <div style="background-color: #555; padding: 2px 5px; border-radius: 3px;">Lab Manual</div> </div> </div>	Lab 02	5 days ago
<div style="display: flex; align-items: center;"> <div style="width: 20px; height: 20px; background-color: #555; margin-right: 5px;"></div> <div> <div style="background-color: #555; padding: 2px 5px; border-radius: 3px;">Lab Tasks</div> </div> </div>	Start Java	3 weeks ago
<div style="display: flex; align-items: center;"> <div style="width: 20px; height: 20px; background-color: #555; margin-right: 5px;"></div> <div> <div style="background-color: #555; padding: 2px 5px; border-radius: 3px;">Lab Work</div> </div> </div>	Lab 02	5 days ago

✓ Adding new branch and pushing text file is a test.

Test for Adanced-Feature #1

 Open
abuzarkhanse wants to merge 1 commit into main from advanced-features



 Conversation 0
 Commits 1
 Checks 0
 Files changed 1



abuzarkhanse commented 2 minutes ago


Owner
...


Lab 03 Task



Test for Adanced-Feature

fb55f0f





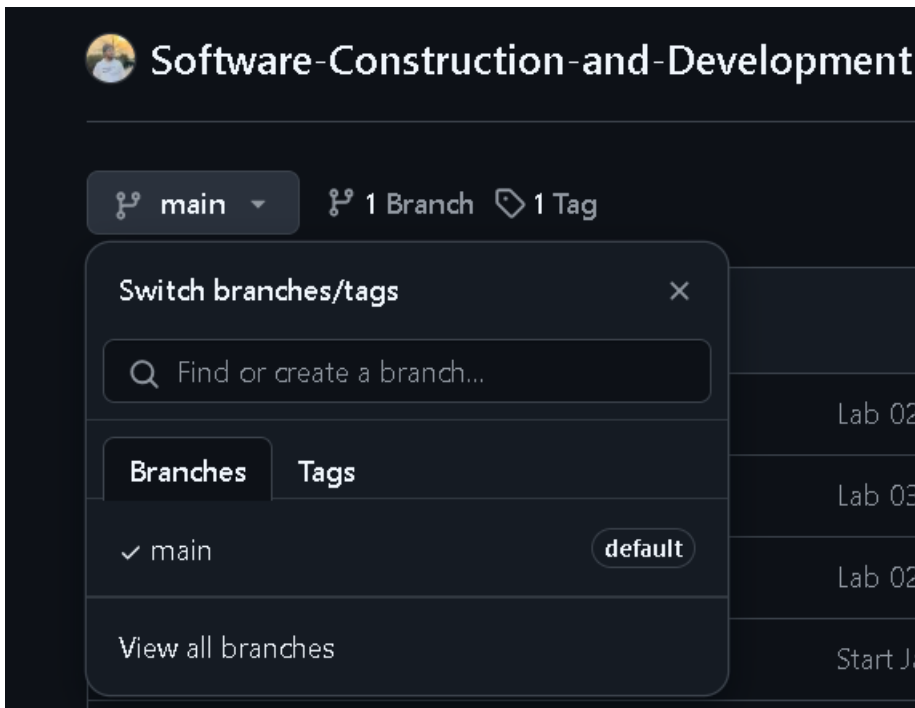
No conflicts with base branch
 Merging can be performed automatically.

Merge pull request
You can also merge this with the command line. [View command line instructions.](#)

```

• tes-test.txt
[advanced-features a2f7c7d] Removed unnecessary files test.txt
 1 file changed, 1 deletion(-)
 delete mode 100644 test.txt
PS C:\Users\mrabu\Desktop\6th Semester\SCD Lab> git origin main
git: 'origin' is not a git command. See 'git --help'.
PS C:\Users\mrabu\Desktop\6th Semester\SCD Lab> git push origin main
Everything up-to-date
PS C:\Users\mrabu\Desktop\6th Semester\SCD Lab> git branch -d advanced-features
error: cannot delete branch 'advanced-features' used by worktree at 'C:/Users/mrabu/Desktop/6th Semester/SCD Lab'
PS C:\Users\mrabu\Desktop\6th Semester\SCD Lab> git push origin --delete advanced-features
To https://github.com/abuzarkhanse/Software-Construction-and-Development.git
 - [deleted]          advanced-features
  
```

Successfully deleted the new branch of GitHub



Link To GitHub Repository : <https://github.com/abuzarkhanse/Software-Construction-and-Development>

END!