Assignment 3: Git

1. Create a software program (in any language you wish) which contains a function / method which computes the sum of a list / array of numbers (integers, whatever you want) given as a parameter and returns the result. Commit the result.

```
// Question 1
const computeSum = (x) => {
  // calculate sum
  let sum = 0;
  for (let i = 0; i < x.length; i++) {
    sum += x[i];
  }
  return sum;
};
```

2. Extend the software program to add a function / method which computes the product (multiplication) of all of a list / array of numbers given as a parameter and returns the result. Commit the result.

```
// Question 2
const computeProduct = (x) => {
  // calculate product
  let product = 1;
  for (let i = 0; i < x.length; i++) {
    product *= x[i];
  }
  return x.length < 1 ? 0 : x.length == 1 ? x[0] : product;
};
```

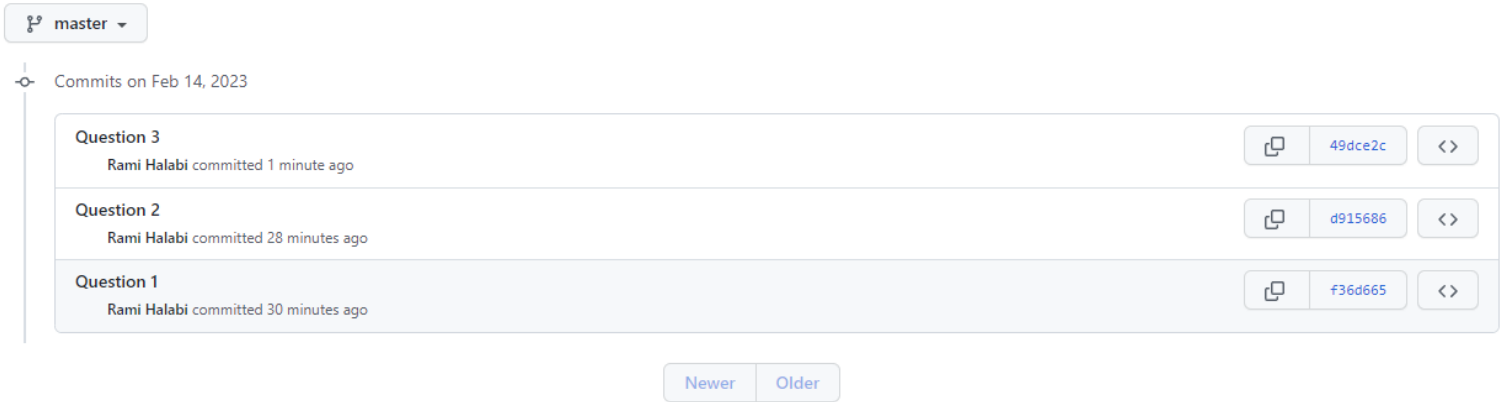
3. Extend the software program again to add a main method (or whatever equivalent in your programming language of choice is) which allows a user to enter numbers and then calls both of the functions/methods above and prints the result from each one (the sum and product of the numbers). Commit the result.

```
// assist for user input
const readline = require('readline').createInterface({
  input: process.stdin,
  output: process.stdout
});

// Question 3
const main = () => {
  readline.question("Enter numbers separated by spaces: ", function
(input) {
    const list = input.trim().split(' ').map(Number);
    console.log(`the sum of [${list}] is `+ computeSum(list));
    console.log(`the product of [${list}] is `+ computeProduct(list));
    readline.close();
  });
};

main();
```

Push all three commits to the Github repository.

4. Take a screenshot of the Insights Network graph and include this screenshot in the document submitted as your solution to this assignment along with a label / caption stating this is for part 4 of the assignment and shows three commits.

PART 4 OF THE ASSIGNMENT



5. Create a new branch (e.g., named part5) on the HEAD of the default branch (e.g., main). In your code, add a new function / method which takes a list / array of numbers and returns a list / array of numbers which are the same numbers given as the argument to the function / method but in reverse

order. Commit the result on your new branch.

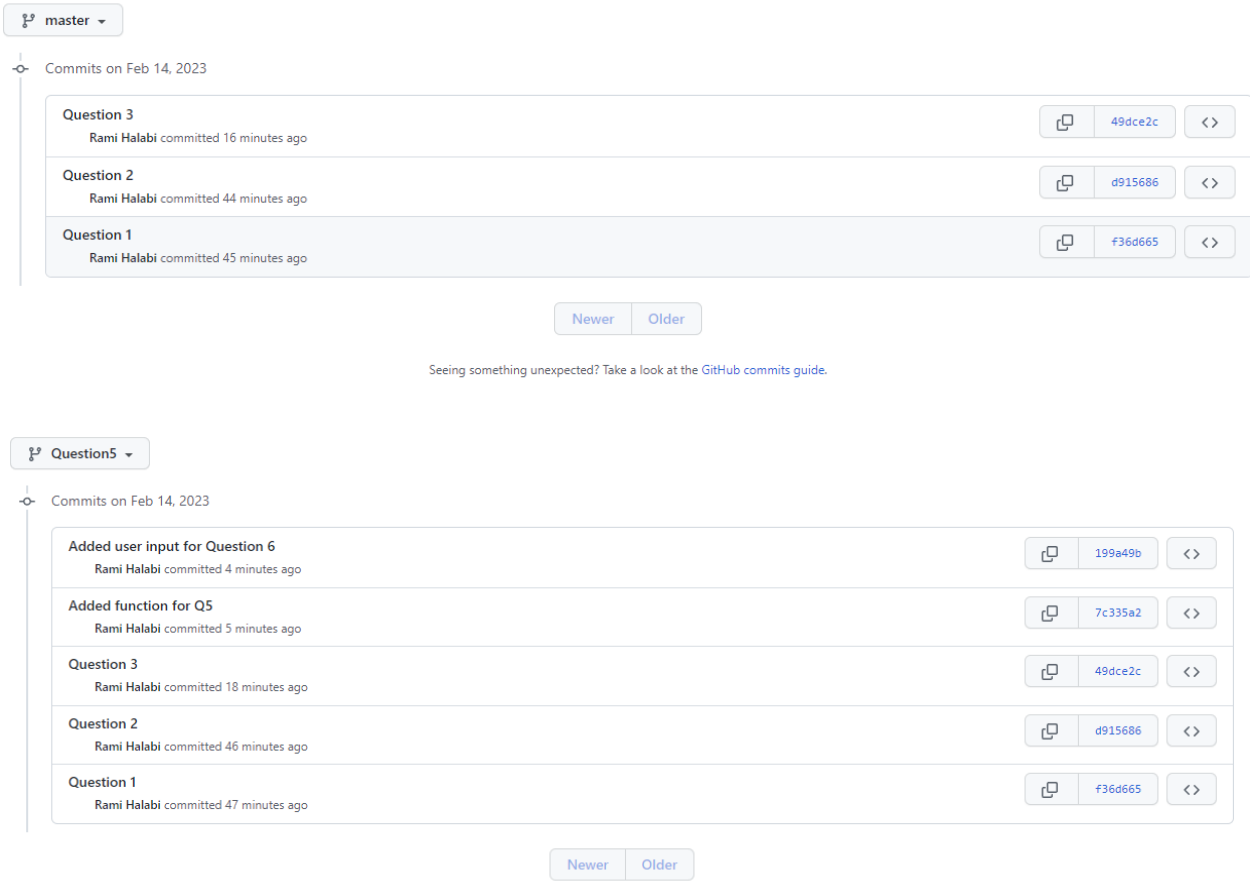
```
// Question 5
const computeReverse = (x) => {
  const stack = [];
  const reverse = [];

  // add to stack to begin reversal
  for (let i = 0; i < x.length; i++) {
    stack.push(x[i]);
  }

  // Pop from stack to implement reversal
  while (stack.length > 0) {
    reverse.push(stack.pop());
  }

  return reverse;
};
```

6. Add to your main method / function from part 3 above calling this new reversing function / method with the user-entered numbers and print the result (along with printing the sum and product from before). Commit the result on your new branch (which should now be two commits ”ahead” of the main branch). Push to Github.

```
console.log(`the reversal of [${list}] is + [${computeReverse(list)}]`);
```

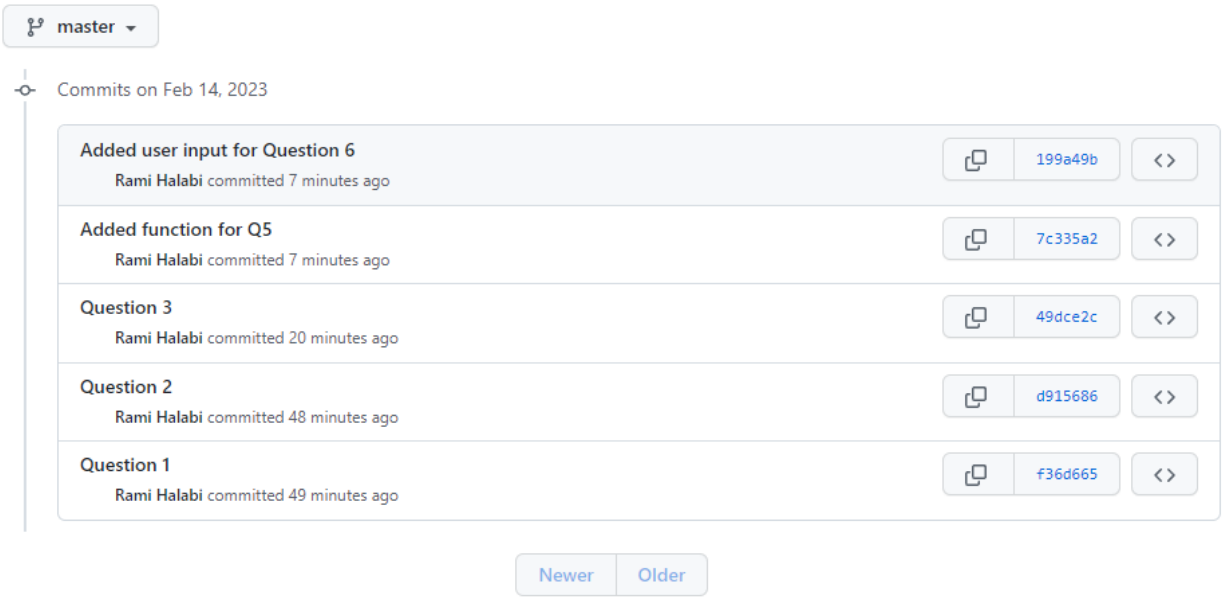
7. Take a screenshot of the Insights Network graph and include this screenshot in the document submitted as your solution to this assignment along with a label / caption stating this is for part 7 of the assignment and shows three commits on main and two additional commits on part5

PART 7 OF THE ASSIGNMENT



8. Merge your new branch to the main branch (not as a fast-forward commit). This should create a new ”merge commit” on the main branch which has two ”parent” commits. Push to Github.

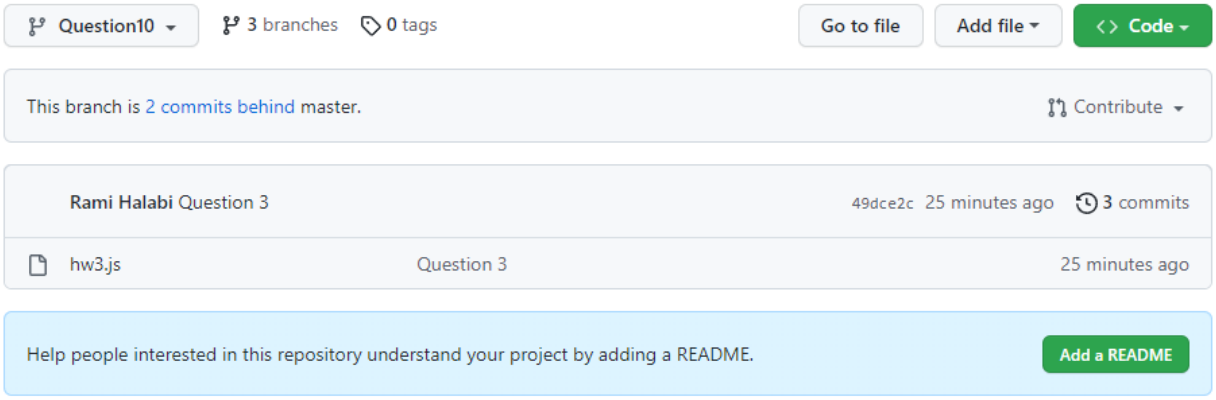
9. Take a screenshot of the Insights Network graph and include this screenshot in the document submitted as your solution to this assignment.

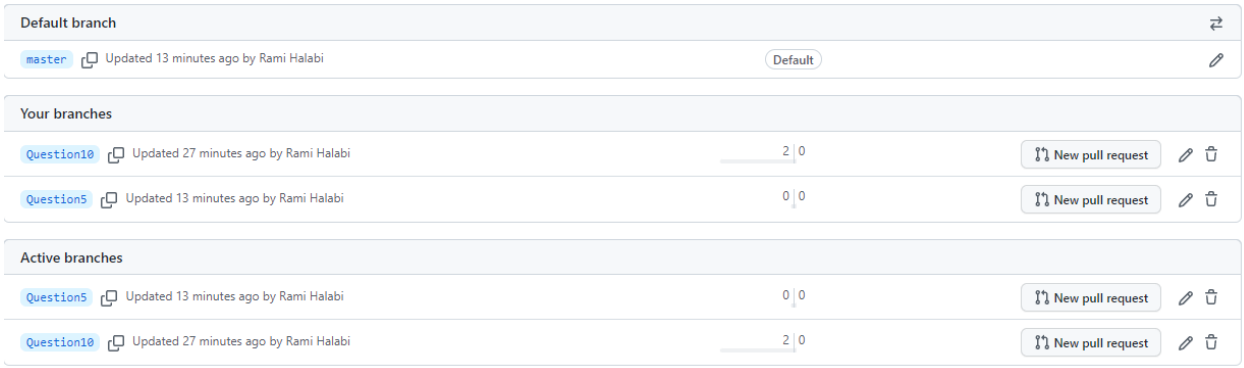


10. Checkout the third commit (from part 3 above) of the main branch, create a new branch (e.g., named part10). Make any change to your code (e.g., reformat some lines of code, add some comments, whatever) and commit the result on the new branch. Push to Github.

11. Take a screenshot of the Insights Network graph and include this screenshot in the document submitted as your solution to this assignment along with a label / caption stating this is for part 11 of the assignment and shows new branch part10.

PART 11 OF THE ASSIGNMENT



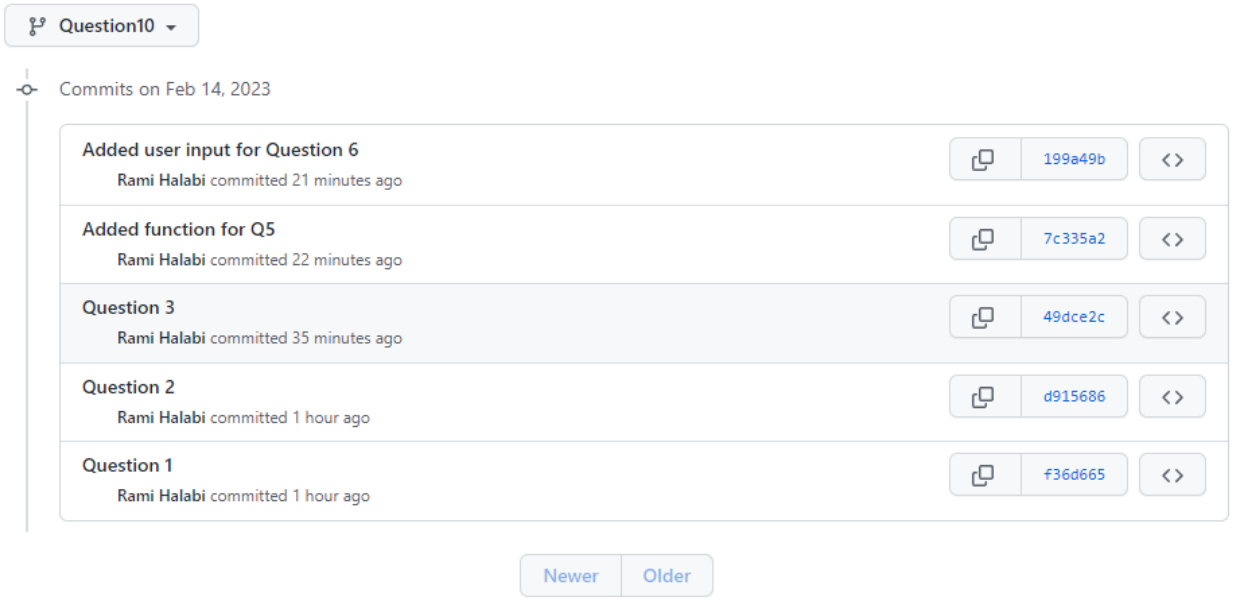


12. Rebase your new branch to the HEAD of the main branch. Push to Github.

```
PS C:\Users\ramiI\Desktop\CS3203> git rebase master
Successfully rebased and updated refs/heads/Question10.
PS C:\Users\ramiI\Desktop\CS3203>
```

13. Take a screenshot of the Insights Network graph and include this screenshot in the document submitted as your solution to this assignment along with a label / caption stating this is for part 13 of the assignment and shows branch part10 rebased to the HEAD of main.

PART 13 OF THE ASSIGNMENT



CODE:

```
/*
CS3203
2-16-2023
Homework 3: GIT
*/

// Question 1
const computeSum = (x) => {
  // calculate sum
  let sum = 0;
  for (let i = 0; i < x.length; i++) {
    sum += x[i];
  }
  return sum;
};

// Question 2
const computeProduct = (x) => {
  // calculate product
  let product = 1;
  for (let i = 0; i < x.length; i++) {
    product *= x[i];
  }
  return x.length < 1 ? 0 : x.length == 1 ? x[0] : product;
};

// Question 5
const computeReverse = (x) => {
  const stack = [];
  const reverse = [];

  // add to stack to begin reversal
```

```
  for (let i = 0; i < x.length; i++) {
    stack.push(x[i]);
  }

  // Pop from stack to implement reversal
  while (stack.length > 0) {
    reverse.push(stack.pop());
  }

  return reverse;
};

// assist for user input
const readline = require("readline").createInterface({
  input: process.stdin,
  output: process.stdout,
});

// Question 3
const main = () => {
  readline.question("Enter numbers separated by spaces: ", function (input) {
    const list = input.trim().split(" ").map(Number);
    console.log(`the sum of [${list}] is ` + computeSum(list));
    console.log(`the product of [${list}] is ` + computeProduct(list));
    console.log(`the reversal of [${list}] is + [${computeReverse(list)}]`);
    readline.close();
  });
};

main();
```