Sorting Arithmetic Computation Problem

UC_1
Write program to take three inputs–a, b & c

CODE

```
#!/bin/bash
echo "              Arithmetic Compution And Sorting"
echo "--------------------------------------------------------------------"
#TO TAKING INPUT FROM USER
read -p "Enter first input :" firstInput
read -p "Enter second input:" secondInput
read -p "Enter third input :" thirdInput
```

OUTPUT

```
              Arithmetic Compution And Sorting
--------------------------------------------------------------------
Enter first input    :2
Enter second input:3
Enter third input    :4
```

UC_2
Compute a + b * c

CODE
```
#!/bin/bash
echo "              Arithmetic Compution And Sorting"
echo "--------------------------------------------------------------------"
#TO TAKING INPUT FROM USER
read -p "Enter first input :" firstInput
read -p "Enter second input:" secondInput
read -p "Enter third input :" thirdInput
#COMPUTE ARITHMETIC OPERATION
result=`echo $firstInput $secondInput $thirdInput |awk '{printf($1 + $2 * $3)}'`
echo "Result:" $result
```

OUTPUT
```
Enter first input    :2
Enter second input :3
Enter third inpu t    :4
Result: 14
```

UC_3
Compute a * b + c

CODE

```
#!/bin/bash
echo "                    Arithmetic Compution And Sorting"
echo "-------------------------------------------------------------------"
#TO TAKING INPUT FROM USER
read -p "Enter first input :" firstInput
read -p "Enter second input:" secondInput
read -p "Enter third input :" thirdInput
#COMPUTE ARITHMETIC OPERATION
result1=`echo $firstInput $secondInput $thirdInput |awk '{printf($1 + $2 * $3)}'`
echo "Result1: firstInput + secondInput * thirdInput = " $result1
result2=`echo $firstInput $secondInput $thirdInput |awk '{printf($1 * $2 + $3)}'`
echo "Result2: firstInput * secondInput + thirdInput = " $result2
```

OUTPUT

```
                Arithmetic Compution And Sorting
-------------------------------------------------------------------
Enter first input    :2
Enter second input:3
Enter third input    :4
Result1: firstInput + secondInput * thirdInput =  14
Result2: firstInput * secondInput + thirdInput =  10
```

UC_4
Compute a / b + c

CODE

```bash
#!/bin/bash
echo "                Arithmetic Compution And Sorting"
echo "---------------------------------------------------------------------"
#TO TAKING INPUT FROM USER
read -p "Enter first input :" firstInput
read -p "Enter second input:" secondInput
read -p "Enter third input :" thirdInput
#COMPUTE ARITHMETIC OPERATION
result1=`echo $firstInput $secondInput $thirdInput |awk '{printf($1 + $2 * $3)}`
echo "Result1: firstInput + secondInput * thirdInput = " $result1
result2=`echo $firstInput $secondInput $thirdInput |awk '{printf($1 * $2 + $3)}`
echo "Result2: firstInput * secondInput + thirdInput = " $result2
result3=`echo $firstInput $secondInput $thirdInput |awk '{printf($1 / $2 + $3)}`
echo "Result3: firstInput / secondInput + thirdInput = " $result3
```

OUTPUT

```
                Arithmetic Compution And Sorting
---------------------------------------------------------------------
Enter first input    :2
Enter second input :3
Enter third input    :4
Result1: firstInput + secondInput * thirdInput =  14
Result2: firstInput * secondInput + thirdInput =  10
Result3: firstInput / secondInput + thirdInput =  4.66667
```

UC_5
Compute a % b + c

CODE

```bash
#!/bin/bash
echo "              Arithmetic Compution And Sorting"
echo "-------------------------------------------------------------------"
#TO TAKING INPUT FROM USER
read -p "Enter first input :" firstInput
read -p "Enter second input:" secondInput
read -p "Enter third input :" thirdInput
#COMPUTE ARITHMETIC OPERATION
result1=`echo $firstInput $secondInput $thirdInput |awk '{printf($1 + $2 * $3)}`
echo "Result1: firstInput + secondInput * thirdInput = " $result1
result2=`echo $firstInput $secondInput $thirdInput |awk '{printf($1 * $2 + $3)}`
echo "Result2: firstInput * secondInput + thirdInput = " $result2
result3=`echo $firstInput $secondInput $thirdInput |awk '{printf($1 / $2 + $3)}`
echo "Result3: firstInput / secondInput + thirdInput = " $result3
result4=`echo $firstInput $secondInput $thirdInput |awk '{printf($1 % $2 + $3)}`
echo "Result4: firstInput % secondInput + thirdInput = " $result4
```

OUTPUT

```
              Arithmetic Compution And Sorting
-------------------------------------------------------------------
Enter first input    :2
Enter second input :3
Enter third input    :4
Result1: firstInput + secondInput * thirdInput =  14
Result2: firstInput * secondInput + thirdInput =  10
Result3: firstInput / secondInput + thirdInput =  4.66667
Result4: firstInput % secondInput + thirdInput =  6
```

UC_6

Store the results in a Dictionary for every Computation

CODE

```bash
#!/bin/bash -x

#TO DECLEAR THE DICTIONARY
declare -A arithmeticOperation

echo "                Arithmetic Compution And Sorting"
echo "--------------------------------------------------------------------"

#TO TAKING INPUT FROM USER
read -p "Enter first input :" firstInput
read -p "Enter second input:" secondInput
read -p "Enter third input :" thirdInput

#COMPUTE ARITHMETIC OPERATION
result1=`echo $firstInput $secondInput $thirdInput |awk '{printf($1 + $2 * $3)}`
echo "Result1: firstInput + secondInput * thirdInput = " $result1
result2=`echo $firstInput $secondInput $thirdInput |awk '{printf($1 * $2 + $3)}`
echo "Result2: firstInput * secondInput + thirdInput = " $result2
result3=`echo $firstInput $secondInput $thirdInput |awk '{printf($1 / $2 + $3)}`
echo "Result3: firstInput / secondInput + thirdInput = " $result3
result4=`echo $firstInput $secondInput $thirdInput |awk '{printf($1 % $2 + $3)}`
echo "Result4: firstInput % secondInput + thirdInput = " $result4

#TO STORE THE DICTIONARY
arithmeticOperation[((result1))]=$result1
arithmeticOperation[((result2))]=$result2
arithmeticOperation[((result3))]=$result3
arithmeticOperation[((result4))]=$result4
```

UC_7
Read the values from the Dictionary into the array

CODE

```bash
#!/bin/bash -x

#TO DECLEAR THE DICTIONARY
declare -A arithmeticOperation

#TO DECLEAR THE ARRAY
declare -a array

echo "                Arithmetic Compution And Sorting"
echo "-------------------------------------------------------------------"

#TO TAKING INPUT FROM USER
read -p "Enter first input :" firstInput
read -p "Enter second input:" secondInput
read -p "Enter third input :" thirdInput

#COMPUTE ARITHMETIC OPERATION
result1=`echo $firstInput $secondInput $thirdInput |awk '{printf($1 + $2 * $3)}'`
echo "Result1: firstInput + secondInput * thirdInput = " $result1
result2=`echo $firstInput $secondInput $thirdInput |awk '{printf($1 * $2 + $3)}'`
echo "Result2: firstInput * secondInput + thirdInput = " $result2
result3=`echo $firstInput $secondInput $thirdInput |awk '{printf($1 / $2 + $3)}'`
echo "Result3: firstInput / secondInput + thirdInput = " $result3
result4=`echo $firstInput $secondInput $thirdInput |awk '{printf($1 % $2 + $3)}'`
echo "Result4: firstInput % secondInput + thirdInput = " $result4

#TO STORE THE DICTIONARY
arithmeticOperation[((result1))]=$result1
arithmeticOperation[((result2))]=$result2
arithmeticOperation[((result3))]=$result3
arithmeticOperation[((result4))]=$result4

#TO READ RESULTS FROM DICTIONARY AND STORE THEM IN ARRAY
for ((index=0; index<=${#arithmeticOperation[@]}; index++))
do
 array[((index))]=${arithmeticOperation[((result$((index+1))))]}
done
echo "${array[@]}"
```

UC_8

Sort the results to show the Computation Result in the Descending Order

CODE

```bash
#!/bin/bash -x

#TO DECLEAR THE DICTIONARY
declare -A arithmeticOperation

#TO DECLEAR THE ARRAY
declare -a array

echo "              Arithmetic Compution And Sorting"
echo "-------------------------------------------------------------------"

#TO TAKING INPUT FROM USER
read -p "Enter first input :" firstInput
read -p "Enter second input:" secondInput
read -p "Enter third input :" thirdInput

#TOCOMPUTE ARITHMETIC OPERATION
result1=`echo $firstInput $secondInput $thirdInput |awk '{printf($1 + $2 * $3)}'`
echo "Result1: firstInput + secondInput * thirdInput = " $result1
result2=`echo $firstInput $secondInput $thirdInput |awk '{printf($1 * $2 + $3)}'`
echo "Result2: firstInput * secondInput + thirdInput = " $result2
result3=`echo $firstInput $secondInput $thirdInput |awk '{printf($1 / $2 + $3)}'`
echo "Result3: firstInput / secondInput + thirdInput = " $result3
result4=`echo $firstInput $secondInput $thirdInput |awk '{printf($1 % $2 + $3)}'`
echo "Result4: firstInput % secondInput + thirdInput = " $result4

#TO STORE THE DICTIONARY
arithmeticOperation[((result1))]=$result1
arithmeticOperation[((result2))]=$result2
arithmeticOperation[((result3))]=$result3
arithmeticOperation[((result4))]=$result4

#TO READ RESULTS FROM DICTIONARY AND STORE THEM IN ARRAY
for ((index=0; index<=${#arithmeticOperation[@]}; index++))
do
  array[((index))]=${arithmeticOperation[((result$((index+1))))]}
done
echo "${array[@]}"

#TO STORE AND PRINT RESULTS IN DECENDING ORDER
resultsDescendingOrder=( $( printf "%s\n" "${array[@]}" | sort -nr ) )
echo ${resultsDescendingOrder[@]}
```

OUTPUT

Enter first input :2
Enter second input:3
Enter third input :4
Result1: firstInput + secondInput * thirdInput = 14
Result2: firstInput * secondInput + thirdInput = 10
Result3: firstInput / secondInput + thirdInput = 4.66667
Result4: firstInput % secondInput + thirdInput = 6
14 10 4.66667 6
14 10 6 4.66667

Sort the results to show the Computation Value in Ascending Order

CODE

```bash
#!/bin/bash

#TO DECLEAR THE DICTIONARY
declare -A arithmeticOperation

#TO DECLEAR THE ARRAY
declare -a array

echo "                  Arithmetic Compution And Sorting"
echo "------------------------------------------------------------------"

#TO TAKING INPUT FROM USER
read -p "Enter first input :" firstInput
read -p "Enter second input:" secondInput
read -p "Enter third input :" thirdInput

#TOCOMPUTE ARITHMETIC OPERATION
result1=`echo $firstInput $secondInput $thirdInput |awk '{printf($1 + $2 * $3)}'`
echo "Result1: firstInput + secondInput * thirdInput = " $result1
result2=`echo $firstInput $secondInput $thirdInput |awk '{printf($1 * $2 + $3)}'`
echo "Result2: firstInput * secondInput + thirdInput = " $result2
result3=`echo $firstInput $secondInput $thirdInput |awk '{printf($1 / $2 + $3)}'`
echo "Result3: firstInput / secondInput + thirdInput = " $result3
result4=`echo $firstInput $secondInput $thirdInput |awk '{printf($1 % $2 + $3)}'`
echo "Result4: firstInput % secondInput + thirdInput = " $result4

#TO STORE THE DICTIONARY
arithmeticOperation[((result1))]=$result1
arithmeticOperation[((result2))]=$result2
arithmeticOperation[((result3))]=$result3
arithmeticOperation[((result4))]=$result4

#TO READ RESULTS FROM DICTIONARY AND STORE THEM IN ARRAY
for ((index=0; index<=${#arithmeticOperation[@]}; index++))
do
  array[((index))]=${arithmeticOperation[((result$((index+1))))]}
done
echo "computed results are              :" ${array[@]}

#TO STORE AND PRINT RESULTS IN DECENDING ORDER
resultsDescendingOrder=( $( printf "%s\n" "${array[@]}" | sort -nr ) )
echo "computed result in Descending order  :"  ${resultsDescendingOrder[@]}


#TO STORE AND PRINT RESULTS IN ASCENDING ORDER
resultsAscendingOrder=( $( printf "%s\n" "${array[@]}" | sort -n ) )
echo "computed result in Ascending order   :"  ${resultsAscendingOrder[@]}
```

OUTPUT

<div align="center">Arithmetic Compution And Sorting</div>

Enter first input :2
Enter second input:3
Enter third input :4
Result1: firstInput + secondInput * thirdInput = 14
Result2: firstInput * secondInput + thirdInput = 10
Result3: firstInput / secondInput + thirdInput = 4.66667
Result4: firstInput % secondInput + thirdInput = 6
computed results are   : 14 10 4.66667 6
computed result in Descending order   : 14 10 6 4.66667
computed result in Ascending order   : 4.66667 6 10 14