

# Assignment - 2

## OPERATING SYSTEM

TOPIC: BASIC SHELL PROGRAMMING

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- Write a shell program to calculate the sum of two numbers. (Using 3rd variable)

Sol-

```
#!/bin/bash
```

```
# Input
```

```
echo "Enter the first number:"
```

```
read num1
```

```
echo "Enter the second number:"
```

```
read num2
```

```
# Calculate the sum using a third variable
```

```
sum=$((num1 + num2))
```

```
# Display the result
```

```
echo "Sum of $num1 and $num2 is: $sum"
```

```
MINGW64:/c/Users/DELL
DELL@DESKTOP-F4LO55G MINGW64 ~
$ '/d/mca/sam 3/operating system & system software/assignments/sum.sh'
Enter the first number:
5
Enter the second number:
6
Sum of 5 and 6 is: 11
DELL@DESKTOP-F4LO55G MINGW64 ~
$
```

## OUTPUT

- Write a shell program to calculate the sum of two numbers. (Without using 3rd variable)

Sol-

```
#!/bin/bash
```

```
# Input
```

```
echo "Enter the first number:"
```

```
read num1
```

```
echo "Enter the second number:"
```

```
read num2
```

```
# Calculate the sum without using a third variable
```

```
num1=$((num1 + num2))
```

```
# Display the result
```

```
echo "Sum of the two numbers is: $num1"
```

## OUTPUT

```
MINGW64:/c/Users/DELL
DELL@DESKTOP-F4L055G MINGW64 ~
$ '/d/mca/sam 3/operating system & system software/assignments/sum without variable.sh'
Enter the first number:
12
Enter the second number:
22
Sum of the two numbers is: 34
DELL@DESKTOP-F4L055G MINGW64 ~
$ |
```

- Write a shell program to calculate the difference between two numbers. (Using 3rd variable)

Sol-

```
#!/bin/bash
```

```
# Input
```

```
echo "Enter the first number:"
```

```
read num1
```

```
echo "Enter the second number:"
```

```
read num2
```

```
# Calculate the difference using a third variable
```

```
diff=$((num1 - num2))
```

```
# Display the result
```

```
echo "Difference between $num1 and $num2 is: $diff"
```

## OUTPUT

```
MINGW64:/c/Users/DELL
DELL@DESKTOP-F4L055G MINGW64 ~
$ '/d/mca/sam 3/operating system & system software/assignments/difference b
n two numbers.sh'
Enter the first number:
54
Enter the second number:
21
Difference between 54 and 21 is: 33

DELL@DESKTOP-F4L055G MINGW64 ~
$
```

- Write a shell program to calculate the difference between two numbers. (Without using 3rd variable)

Sol-

```
#!/bin/bash
```

```
# Input
```

```
echo "Enter the first number:"
```

```
read num1
```

```
echo "Enter the second number:"
```

```
read num2
```

```
# Calculate the difference without using a third variable
```

```
num1=$((num1 - num2))
```

```
# Display the result
```

```
echo "Difference between the two numbers is: $num1"
```

## OUTPUT

```
MINGW64:/c/Users/DELL
DELL@DESKTOP-F4L055G MINGW64 ~
$ '/d/mca/sam 3/operating system & system software/assignments/Difference w
t 3rd variable.sh'
Enter the first number:
45
Enter the second number:
8
Difference between the two numbers is: 37

DELL@DESKTOP-F4L055G MINGW64 ~
$ |
```

- Write a shell program to calculate the product of two numbers.

Sol-

```
#!/bin/bash
```

```
# Input
```

```
echo "Enter the first number:"
```

```
read num1
```

```
echo "Enter the second number:"
```

```
read num2
```

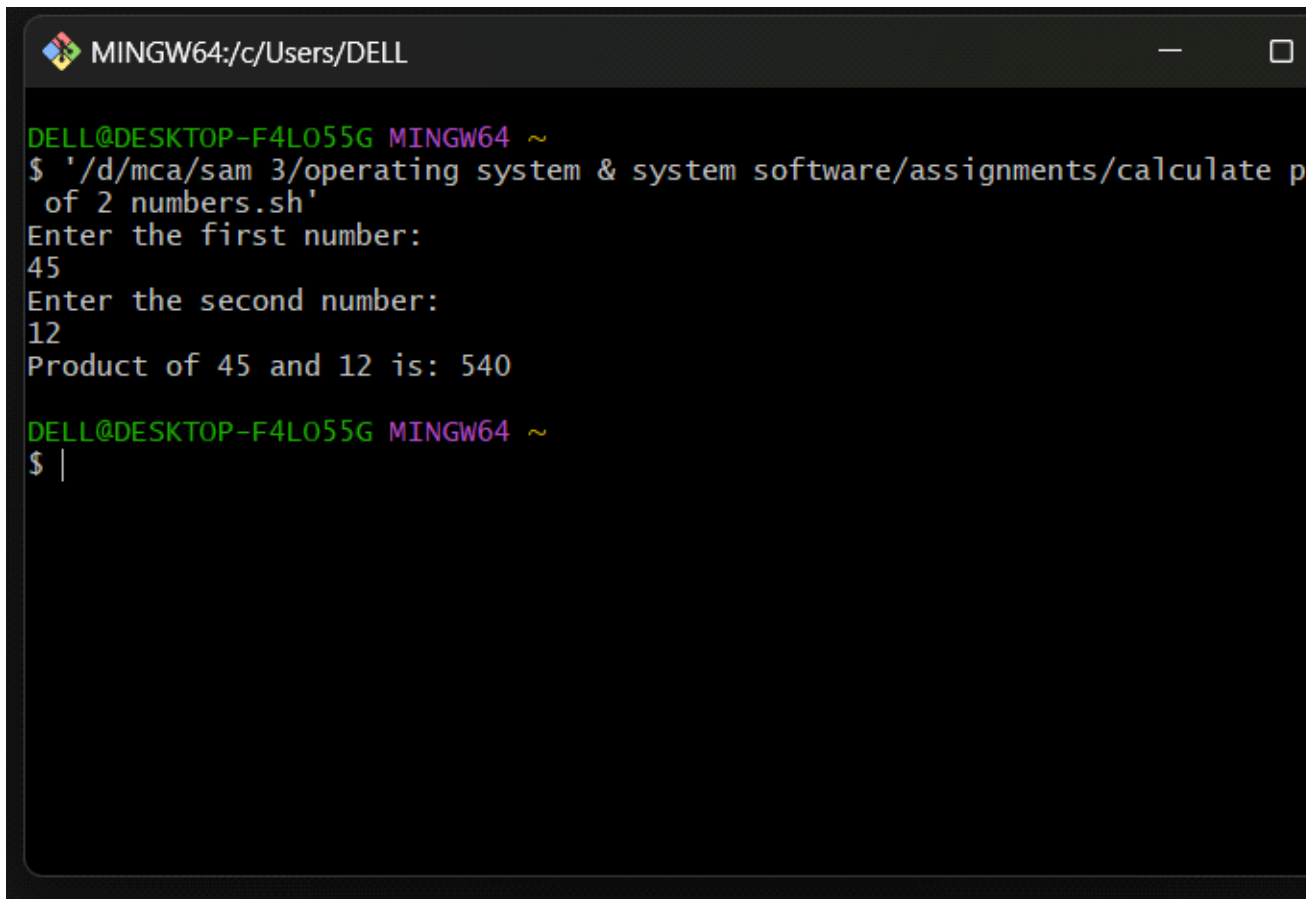
```
# Calculate the product
```

```
product=$((num1 * num2))
```

```
# Display the result
```

```
echo "Product of $num1 and $num2 is: $product"
```

## OUTPUT



```
MINGW64:/c/Users/DELL

DELL@DESKTOP-F4LO55G MINGW64 ~
$ '/d/mca/sam 3/operating system & system software/assignments/calculate p
of 2 numbers.sh'
Enter the first number:
45
Enter the second number:
12
Product of 45 and 12 is: 540

DELL@DESKTOP-F4LO55G MINGW64 ~
$ |
```

- Write a shell program to find the division of two numbers.

Sol-

```
#!/bin/bash
```

```
# Input
```

```
echo "Enter the dividend:"
```

```
read dividend
```

```
echo "Enter the divisor:"
```

```
read divisor
```

```
# Check if divisor is zero
```

```
if [ $divisor -eq 0 ]; then
```

```
    echo "Error: Division by zero is not allowed."
```

```
else
```

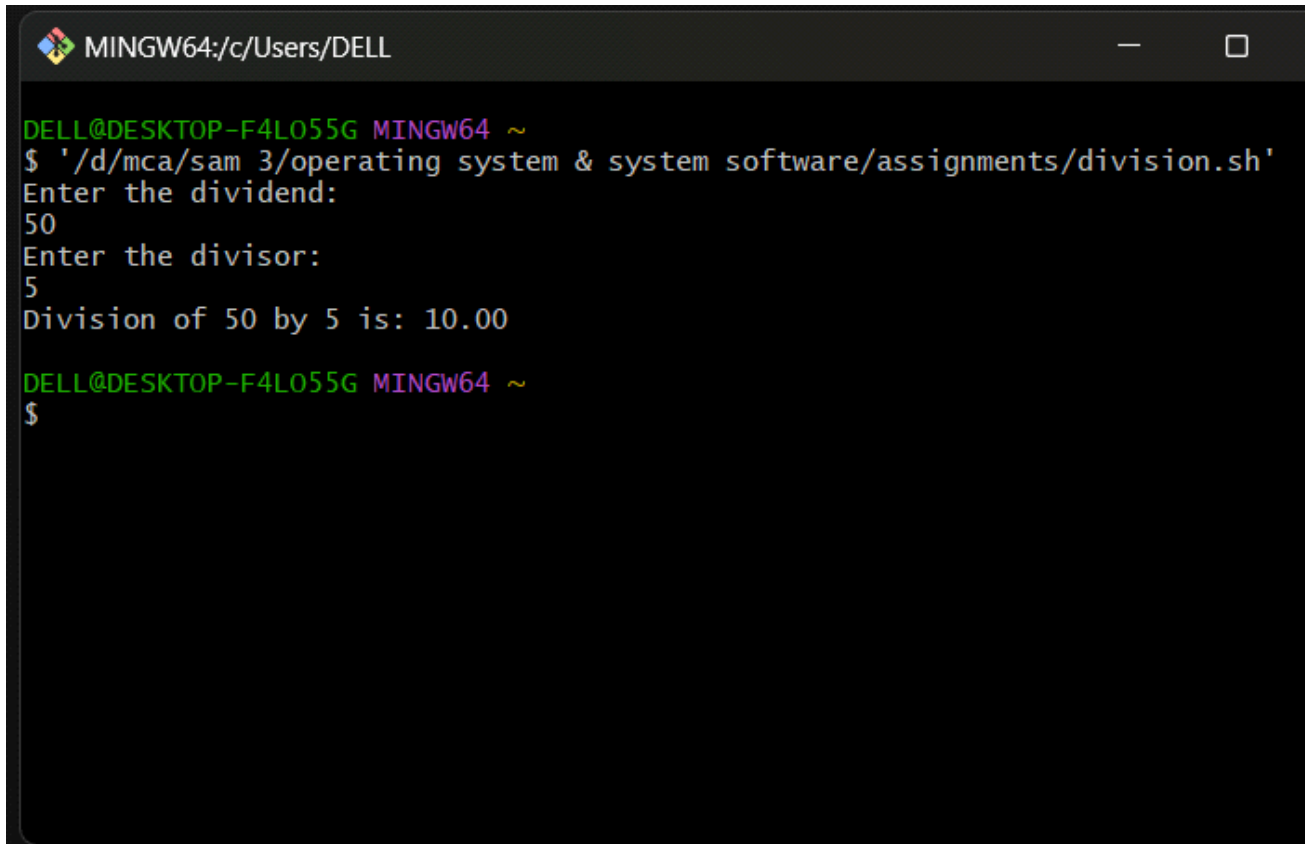
```
    # Calculate the division
```

```
    division=$(awk "BEGIN {printf \"%.2f\", $dividend / $divisor}")
```

```
    # Display the result
```

```
    echo "Division of $dividend by $divisor is: $division"
fi
```

## OUTPUT

A screenshot of a Windows command prompt window titled "MINGW64:/c/Users/DELL". The prompt shows the user running a script: `$ '/d/mca/sam 3/operating system & system software/assignments/division.sh'`. The script prompts for a dividend (50) and a divisor (5), then outputs "Division of 50 by 5 is: 10.00". The prompt then returns to the user's shell.

```
MINGW64:/c/Users/DELL
DELL@DESKTOP-F4L055G MINGW64 ~
$ '/d/mca/sam 3/operating system & system software/assignments/division.sh'
Enter the dividend:
50
Enter the divisor:
5
Division of 50 by 5 is: 10.00
DELL@DESKTOP-F4L055G MINGW64 ~
$
```

- Write a shell program to calculate the average of three numbers.

Sol-

```
#!/bin/bash
```

```
# Input
```

```
echo "Enter the first number:"
```

```
read num1
```

```
echo "Enter the second number:"
```

```
read num2
```

```
echo "Enter the third number:"
```

```
read num3
```

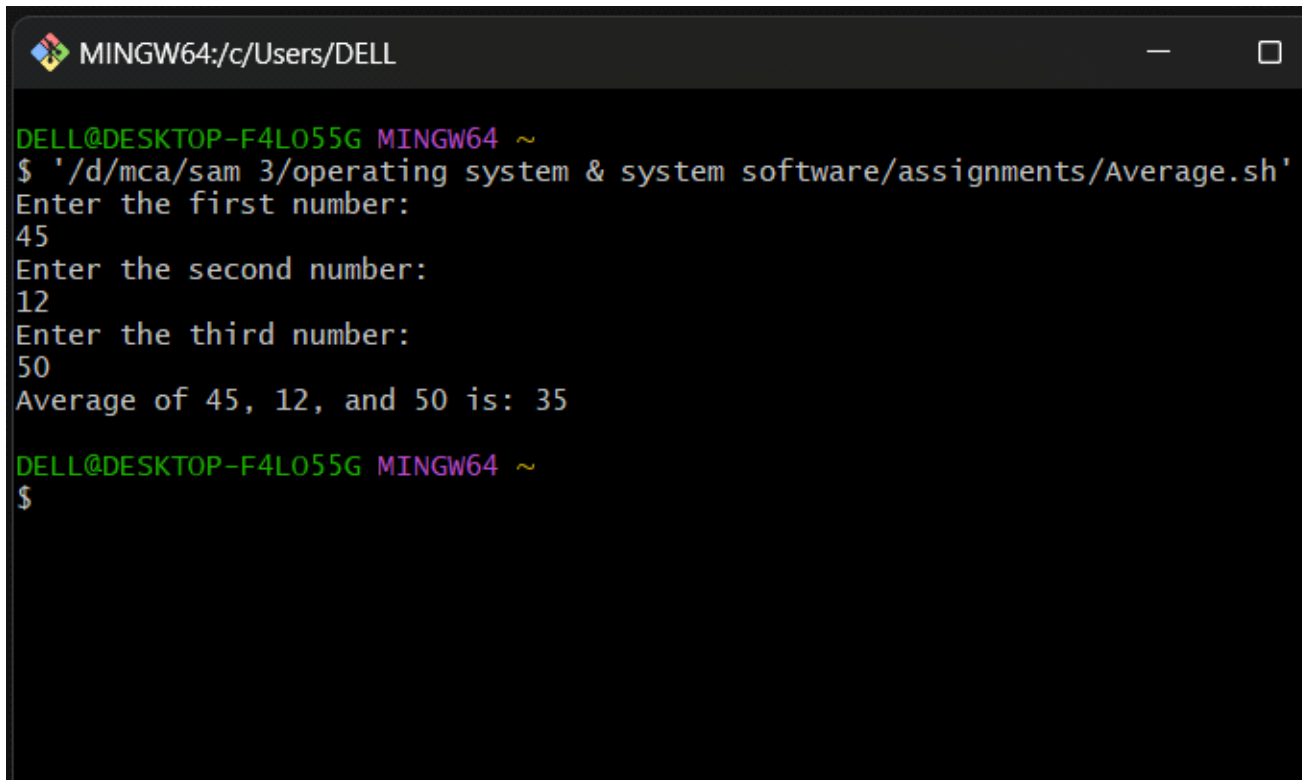
```
# Calculate the average
```

```
average=$(( (num1 + num2 + num3) / 3 ))
```

```
# Display the result
```

```
echo "Average of $num1, $num2, and $num3 is: $saverage"
```

## OUTPUT



```
MINGW64:/c/Users/DELL

DELL@DESKTOP-F4L055G MINGW64 ~
$ '/d/mca/sam 3/operating system & system software/assignments/Average.sh'
Enter the first number:
45
Enter the second number:
12
Enter the third number:
50
Average of 45, 12, and 50 is: 35

DELL@DESKTOP-F4L055G MINGW64 ~
$
```

- Write a shell program to find the area and perimeter of a rectangle.

Sol-

```
#!/bin/bash
```

```
# Input
```

```
echo "Enter the length of the rectangle:"
```

```
read length
```

```
echo "Enter the width of the rectangle:"
```

```
read width
```

```
# Calculate the area and perimeter
```

```
area=$((length * width))
```

```
perimeter=$((2 * (length + width)))
```

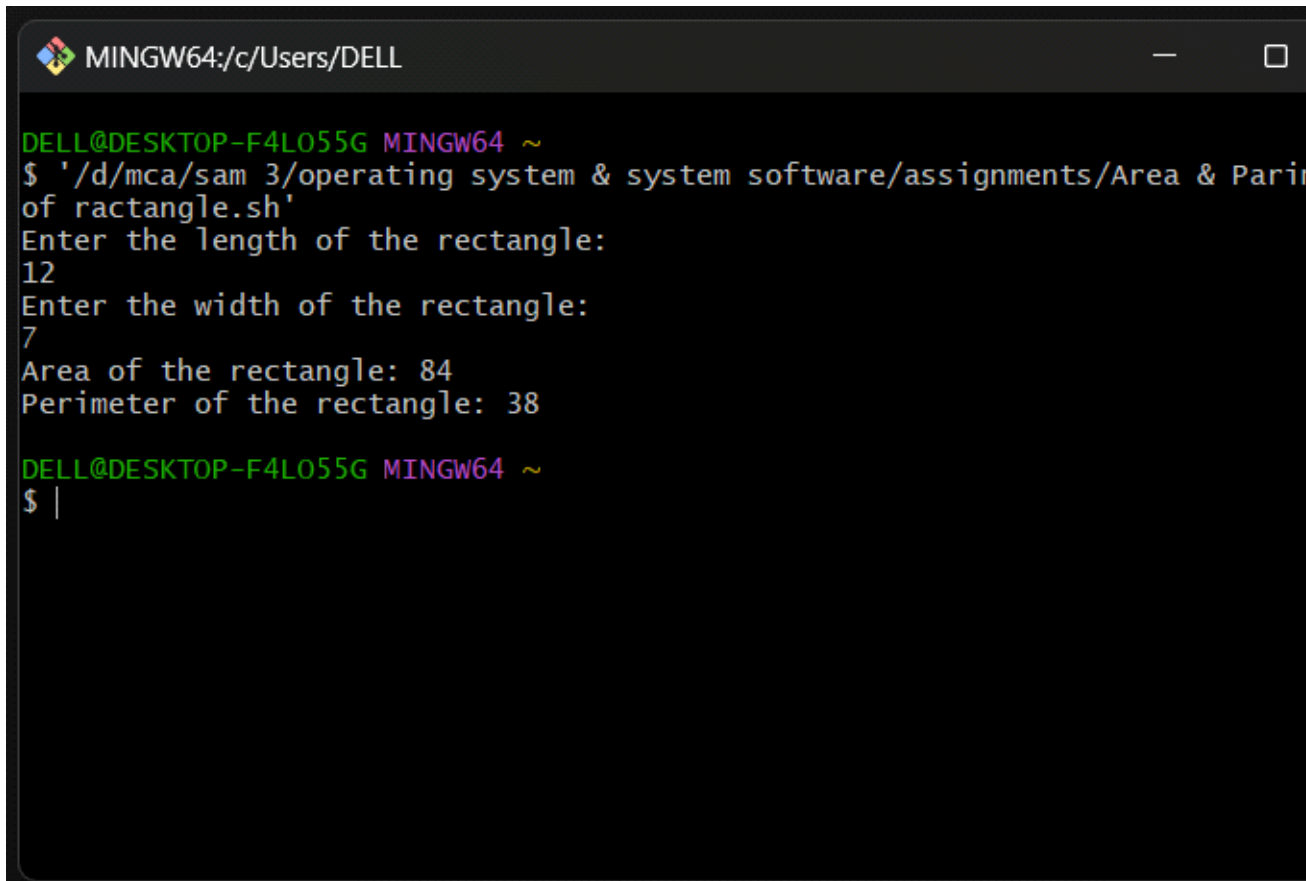
```
# Display the results
```

```
echo "Area of the rectangle: $area"
```



```
echo "Perimeter of the rectangle: $perimeter"
```

## OUTPUT



```
MINGW64:/c/Users/DELL
DELL@DESKTOP-F4LO55G MINGW64 ~
$ '/d/mca/sam 3/operating system & system software/assignments/Area & Perimeter of ractangle.sh'
Enter the length of the rectangle:
12
Enter the width of the rectangle:
7
Area of the rectangle: 84
Perimeter of the rectangle: 38
DELL@DESKTOP-F4LO55G MINGW64 ~
$ |
```

- Write a shell program to find the area and perimeter of a square.

Sol-

```
#!/bin/bash
```

```
# Input
```

```
echo "Enter the side length of the square:"
```

```
read side
```

```
# Calculate the area and perimeter
```

```
area=$((side * side))
```

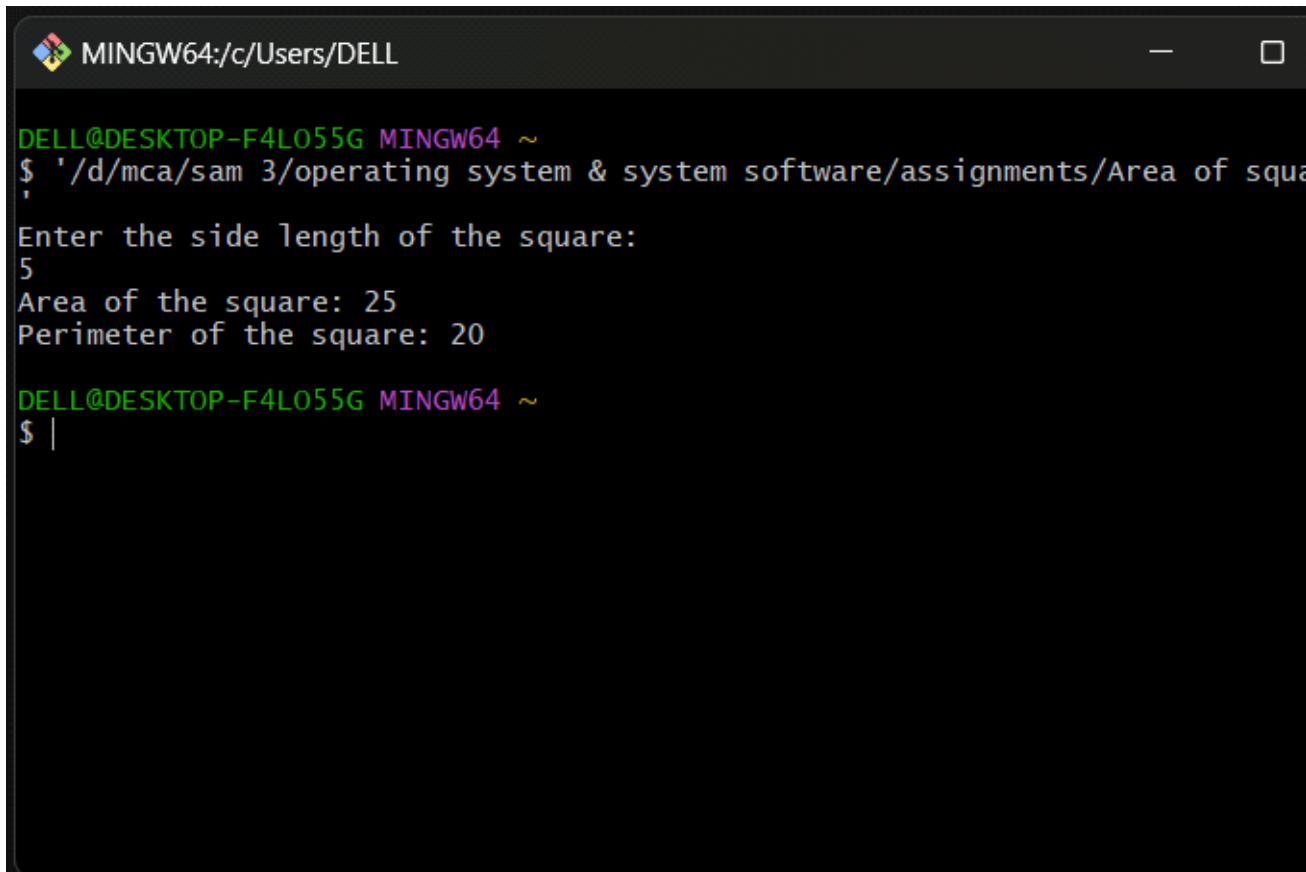
```
perimeter=$((4 * side))
```

```
# Display the results
```

```
echo "Area of the square: $area"
```

```
echo "Perimeter of the square: $perimeter"
```

## OUTPUT



```
MINGW64:/c/Users/DELL

DELL@DESKTOP-F4L055G MINGW64 ~
$ '/d/mca/sam 3/operating system & system software/assignments/Area of square.c'
Enter the side length of the square:
5
Area of the square: 25
Perimeter of the square: 20

DELL@DESKTOP-F4L055G MINGW64 ~
$ |
```

- Write a shell program to find the square root of a number.

Sol-

```
#!/bin/bash
```

```
# Input
```

```
echo "Enter a number:"
```

```
read number
```

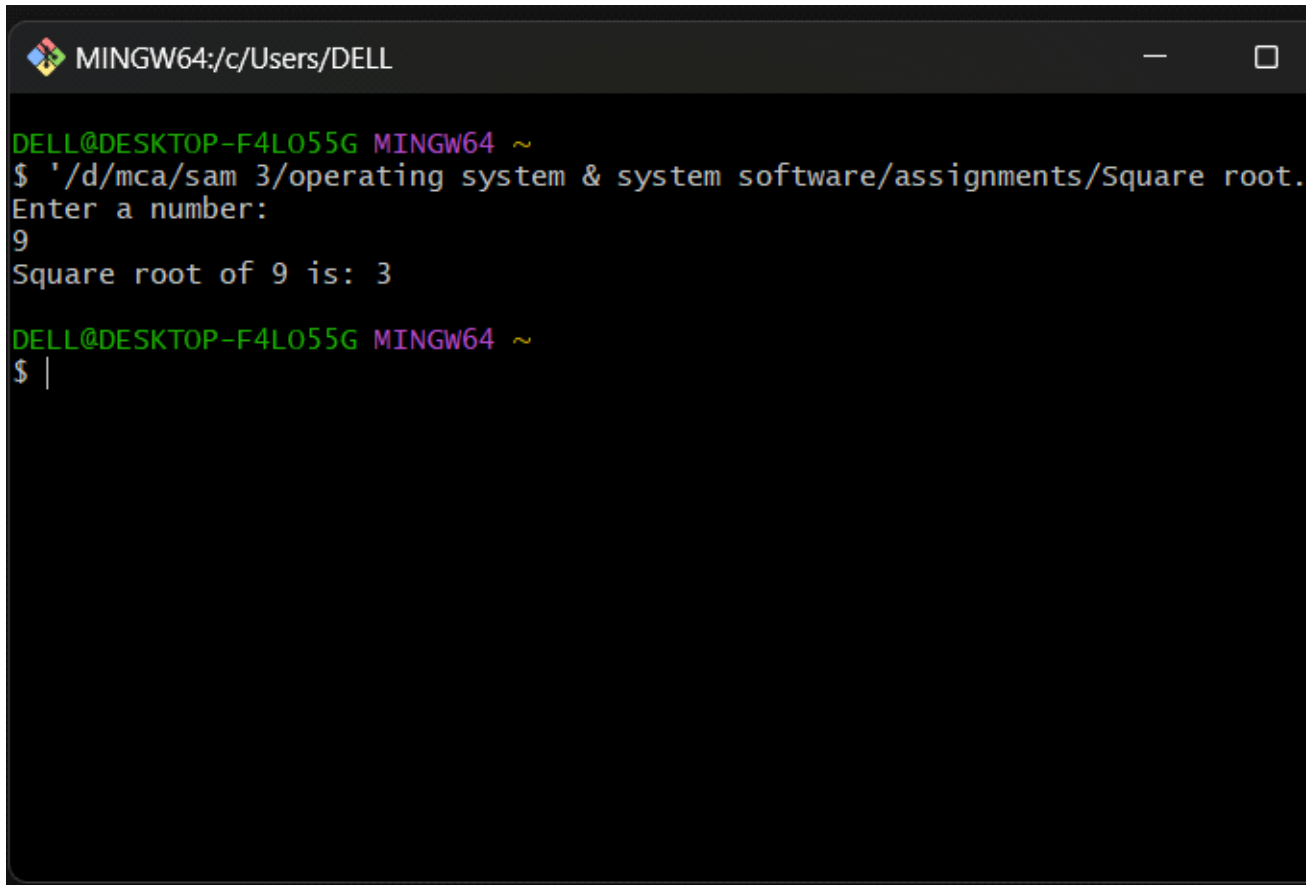
```
# Calculate the square root using awk
```

```
square_root=$(awk "BEGIN {print sqrt($number)}")
```

```
# Display the result
```

```
echo "Square root of $number is: $square_root"
```

## OUTPUT



```
MINGW64:/c/Users/DELL
DELL@DESKTOP-F4L055G MINGW64 ~
$ '/d/mca/sam 3/operating system & system software/assignments/Square root.
Enter a number:
9
Square root of 9 is: 3
DELL@DESKTOP-F4L055G MINGW64 ~
$ |
```