

EECE.2160: ECE Application Programming

Programming Assignment #2: Basic I/O and Operations

Test Cases

The results of three full program runs are shown below, with user inputs underlined. Remember, when running the program in zyBooks, user inputs are not shown.

TEST CASE 1

Enter voltage source value (V): 10
Enter three resistance values (ohms): 5 10 10

SERIES CIRCUIT

Current through circuit: 0.400000 A
Voltage across R1: 2.000000 V
Voltage across R2: 4.000000 V
Voltage across R3: 4.000000 V

PARALLEL CIRCUIT

Voltage across each resistor: 10.000000 V
Current through R1: 2.000000 A
Current through R2: 1.000000 A
Current through R3: 1.000000 A

R2 & R3 IN PARALLEL

Voltage across R1: 5.000000 V
Current through R1: 1.000000 A
Voltage across R2: 5.000000 V
Current through R2: 0.500000 A
Voltage across R3: 5.000000 V
Current through R3: 0.500000 A

TEST CASE 2

Enter voltage source value (V): 1.23

Enter three resistance values (ohms): 4.5 6.7 8.9

SERIES CIRCUIT

Current through circuit: 0.061194 A

Voltage across R1: 0.275373 V

Voltage across R2: 0.410000 V

Voltage across R3: 0.544627 V

PARALLEL CIRCUIT

Voltage across each resistor: 1.230000 V

Current through R1: 0.273333 A

Current through R2: 0.183582 A

Current through R3: 0.138202 A

R2 & R3 IN PARALLEL

Voltage across R1: 0.665070 V

Current through R1: 0.147793 A

Voltage across R2: 0.564930 V

Current through R2: 0.084318 A

Voltage across R3: 0.564930 V

Current through R3: 0.063475 A

TEST CASE 3

Enter voltage source value (V): 20

Enter three resistance values (ohms): 10 3 8

SERIES CIRCUIT

Current through circuit: 0.952381 A

Voltage across R1: 9.523810 V

Voltage across R2: 2.857143 V

Voltage across R3: 7.619048 V

PARALLEL CIRCUIT

Voltage across each resistor: 20.000000 V

Current through R1: 2.000000 A

Current through R2: 6.666667 A

Current through R3: 2.500000 A

R2 & R3 IN PARALLEL

Voltage across R1: 16.417910 V

Current through R1: 1.641791 A

Voltage across R2: 3.582090 V

Current through R2: 1.194030 A

Voltage across R3: 3.582090 V

Current through R3: 0.447761 A