ELEC IT-E1

IT ELECTIVE 1

Name: Eustaquio, Maria Luisa O.	**Year & Section:** BSIT 3-5	**Date:** October 19, 2024

ACTIVITY #2 - OPERATORS

Instructions: Create an R programming that can use a different operation using concatonate.

- **A. Arithmetic Operation** (let num1 = 24, num2 = 30)

```
> num1 <- 24
> num2 <- 30
```

Values	
a1_addition	54
a2_subtraction	-6
a3_multiplication	720
a4_division	0.8
a5_modulus	24
a6_integer_division	0
a7_exponent	2.54880876153761e+41
arithmetic_results	num [1:7] 54 -6 720 0.8 24 ...
num1	24
num2	30

1. Addition

```
> a1_addition <- num1 + num2
> cat("Addition: ", a1_addition)
Addition:  54
```

2. Subtraction

```
> a2_subtraction <- num1 - num2
> cat("Subtraction: ", a2_subtract
Subtraction:  -6
```

3. Multiplication

```
> a3_multiplication <- num1 * num2
> cat("Multiplication: ", a3_multiplication)
Multiplication:  720
```

4. Division

```
> a4_division <- num1 / num2
> cat("Division: ", a4_division)
Division:  0.8
```

5. Modulus

```
> a5_modulus <- num1 %% num2
> cat("Modulus: ", a5_modulus)
Modulus:  24
```

6. Integer Division

```
> a6_integer_division <- num1 %/% num2
> cat("Integer Division: ", a6_integer_division)
Integer Division:  0
```

7. Exponent

```
> a7_exponent <- num1 ^ num2
> cat("Exponent: ", a7_exponent)
Exponent:  2.548809e+41
```

```
> arithmetic_results <- c(a1_addition, a2_subtraction, a3_multiplicat
ion, a4_division, a5_modulus, a6_integer_division, a7_exponent)
> cat("Arithmetic Results: ", arithmetic_results)
Arithmetic Results:  54 -6 720 0.8 24 0 2.548809e+41
```

- **B. Relational Operation** (let num1 = 56, num2 = 45)

```
> num1 <- 56
> num2 <- 45
```

Values	
b1_less_than	FALSE
b2_less_than_equal	FALSE
b3_greater_than	TRUE
b4_greater_than_equ…	TRUE
b5_equal_to	FALSE
b6_not_equal_to	TRUE
num1	56
num2	45
relational_results	logi [1:6] FALSE FALSE TRUE TRUE FALSE TRUE

1. Less than

```
> b1_less_than <- num1 < num2
> cat("Less Than: ", b1_less_than)
Less Than:  FALSE
```

2. Less than or equal to

```
> b2_less_than_equal <- num1 <= num2
> cat("Less Than or Equal To: ", b2_less_th
Less Than or Equal To:  FALSE
```

3. Greater than

```
> b3_greater_than <- num1 > num2
> cat("Greater Than: ", b3_greater_than)
Greater Than:  TRUE
```

4. Greater or equal to

```
> b4_greater_than_equal <- num1 >= num2
> cat("Greater Than or Equal To: ", b4_grea
Greater Than or Equal To:  TRUE
```

5. Equal to

```
> b5_equal_to <- num1 == num2
> cat("Equal To: ", b5_equal_to)
Equal To:  FALSE>
```

6. Not equal to

```
> b6_not_equal_to <- num1 != num2
> cat("Not Equal To: ", b6_not_equal_to)
Not Equal To:  TRUE
```

```
> relational_results <- c(b1_less_than, b2_less_than_equal, b3_greate
r_than, b4_greater_than_equal, b5_equal_to, b6_not_equal_to)
> cat("Relational Results: ", relational_results)
Relational Results:  FALSE FALSE TRUE TRUE FALSE TRUE
```

- **C. Logical Operation**

Values	
c1_logical_not	FALSE
c2_elementwise_and	logi [1:3] FALSE FALSE TRUE
c3_logical_and	FALSE
c4_elementwise_or	logi [1:3] TRUE TRUE TRUE
c5_logical_or	TRUE
logical_results	logi [1:9] FALSE FALSE FALSE TRUE FALSE TRUE ...

1. Logical not

```
> c1_logical_not <- !TRUE
> cat("Logical NOT: ", c1_logical_not)
Logical NOT:  FALSE
```

2. Element-wise logical AND

```
> c2_elementwise_and <- c(TRUE, FALSE, TRUE) & c(FALSE, TRUE, TRUE)
> cat("Element-wise AND: ", c2_elementwise_and)
Element-wise AND:  FALSE FALSE TRUE
```

3. Logical AND

```
> c3_logical_and <- TRUE && FALSE
> cat("Logical AND: ", c3_logical_and)
Logical AND:  FALSE
```

4. Element-wise logical OR

```
> c4_elementwise_or <- c(TRUE, FALSE, TRUE) | c(FALSE, TRUE, TRUE)
> cat("Element-wise OR: ", c4_elementwise_or)
Element-wise OR:  TRUE TRUE TRUE
```

5. Logical OR

```
> c5_logical_or <- TRUE || FALSE
> cat("Logical OR: ", c5_logical_or)
Logical OR:  TRUE
```

```
> logical_results <- c(c1_logical_not, c2_elementwise_and, c3_logical
_and, c4_elementwise_or, c5_logical_or)
> cat("Logical Results: ", logical_results)
Logical Results:  FALSE FALSE FALSE TRUE FALSE TRUE TRUE TRUE TRUE
```

- **D. Combination** (let num1 = 76, num2 = 56, num3 = 74, num4 = 43, num5 = False, num6 = True, num7 = True)

```
> num1 <- 76
> num2 <- 56
> num3 <- 74
> num4 <- 43
> num5 <- FALSE
> num6 <- TRUE
> num7 <- TRUE
```

1. (num1 > num2) || (!num6) || (!num5) || (num2 != num3)

```
> d1_combination1 <- (num1 > num2) || (!num6) || (!num5)
|| (num2 != num3)
> cat("Combination 1: ", d1_combination1)
Combination 1:  TRUE
```

2. (num1 > num4) || (!num7) || (!num4) || (num2 <= num3)

```
> d2_combination2 <- (num1 > num4) || (!num7) || (!num4)
|| (num2 <= num3)
> cat("Combination 2: ", d2_combination2)
Combination 2:  TRUE
```

3. (num5 > num4) || (!num1) || (!num6) || (num1 >= num5)

```
> d3_combination3 <- (num5 > num4) || (!num1) || (!num6)
|| (num1 >= num5)
> cat("Combination 3: ", d3_combination3)
Combination 3:  TRUE
```

Values	
combination_results	logi [1:3] TRUE TRUE TRUE
d1_combination1	TRUE
d2_combination2	TRUE
d3_combination3	TRUE
num1	76
num2	56
num3	74
num4	43
num5	FALSE
num6	TRUE
num7	TRUE

```
> combination_results <- c(d1_combination1, d2_combination2, d3
_combination3)
> cat("Combination Results: ", combination_results)
Combination Results:  TRUE TRUE TRUE
```
