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IT0011 – TW23

Activity 5: Function

Source Code:

```
CortanAct5.py U ✕
ACT5 > CortanAct5.py > ...
  1  def divide(a, b):
  2      if b == 0:
  3          print("Error: Division by zero is not allowed.")
  4          return None
  5      return a / b
  6
  7  def exponentiate(a, b):
  8      return a ** b
  9
 10  def remainder(a, b):
 11      if b == 0:
 12          print("Error: Division by zero is not allowed.")
 13          return None
 14      return a % b
 15
 16  def summation(a, b):
 17      if a > b:
 18          print("Error: The second number must be greater than the first number.")
 19          return None
 20      return sum(range(a, b + 1))
 21
 22  def menu():
 23      while True:
 24          print("\nMathematical Operations:")
 25          print("[D] - Divide")
 26          print("[E] - Exponentiation")
 27          print("[R] - Remainder")
 28          print("[F] - Summation")
 29          print("[Q] - Quit")
 30
 31          choice = input("Enter your choice: ").strip().upper()
 32
 33          if choice == 'Q':
 34              print("Exiting program.")
 35              break
 36
 37          if choice in ['D', 'E', 'R', 'F']:
 38              try:
 39                  num1 = float(input("Enter first number: "))
 40                  num2 = float(input("Enter second number: "))
 41              except ValueError:
 42                  print("Invalid input. Please enter numerical values.")
 43                  continue
 44
 45              if choice == 'D':
 46                  result = divide(num1, num2)
 47              elif choice == 'E':
 48                  result = exponentiate(num1, num2)
 49              elif choice == 'R':
```

```python
                    result = remainder(num1, num2)
                elif choice == 'F':
                    result = summation(int(num1), int(num2))

                if result is not None:
                    print("Result:", result)
            else:
                print("Invalid choice. Please select a valid option.")

menu()
```

Result:

```
PROBLEMS   OUTPUT   DEBUG CONSOLE   TERMINAL   PORTS   COMMENTS

PS C:\Users\John John\OneDrive\Documents\GitHub\it0011_Cortan> python -u "c:\Users\John John\OneDrive\Documents\GitHub\it0011_Cortan\ACT5\CortanAct5.py"

Mathematical Operations:
[D] - Divide
[E] - Exponentiation
[R] - Remainder
[F] - Summation
[Q] - Quit
Enter your choice: D
Enter first number: 24
Enter second number: 4
Result: 6.0

Mathematical Operations:
[D] - Divide
[E] - Exponentiation
[R] - Remainder
[F] - Summation
[Q] - Quit
Enter your choice: E
Enter first number: 88
Enter second number: 18
Result: 1.0015856616501753e+35

Mathematical Operations:
[D] - Divide
[E] - Exponentiation
[R] - Remainder
[F] - Summation
[Q] - Quit
Enter your choice: R
Enter first number: 29
Enter second number: 4
Result: 1.0
```

```
Mathematical Operations:
[D] - Divide
[E] - Exponentiation
[R] - Remainder
[F] - Summation
[Q] - Quit
Enter your choice: F
Enter first number: 4
Enter second number: 8
Result: 30

Mathematical Operations:
[D] - Divide
[E] - Exponentiation
[R] - Remainder
[F] - Summation
[Q] - Quit
Enter your choice: Q
Exiting program.
PS C:\Users\John John\OneDrive\Documents\GitHub\it0011_Cortan> []
```