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DEPARTMENT : INFORMATION TECHNOLOGY

SUBJECT : ARTIFICIAL TECHNOLOGY

LAB : 08

TASK: 01

Make a calculator using the function the code should use only 2 operands(+ and -) for division and multiplication as well

```
def add(a, b):  
    return a + b  
  
def subtract(a, b):  
    return a - b  
  
def multiply(a, b):  
    result = 0  
    positive = True  
    if b < 0:  
        b = -b  
        positive = False  
    for _ in range(b):  
        result = add(result, a)  
    return result if positive else -result  
  
def divide(a, b):  
    if b == 0:  
        return "Error: Division by zero"  
    count = 0  
    negative = False  
    if a < 0:  
        a = -a  
        negative = not negative  
    if b < 0:
```

```
        b = -b
        negative = not negative
    while a >= b:
        a = subtract(a, b)
        count = add(count, 1)
    return -count if negative else count

# Main calculator function
def calculator():
    a = int(input("Enter first number: "))
    op = input("Enter operator (+, -, *, /): ")
    b = int(input("Enter second number: "))
```

```
        if op == '+':
            print("Result:", add(a, b))
        elif op == '-':
            print("Result:", subtract(a, b))
        elif op == '*':
            print("Result:", multiply(a, b))
        elif op == '/':
            print("Result:", divide(a, b))
        else:
            print("Invalid operator")
calculator()
```

OUTPUT:

```
Enter first number:
34
Enter operator (+, -, *, /):
*
Enter second number:
46
Result: 1564
```

TASK:02

Write a functions that ask the user the shape and make the star shaped. (Like it asks the shape (triangle or Rectangle) and make that shape.

```
def draw_triangle(height):
    for i in range(1, height + 1):
        print('*' * i)

def draw_rectangle(width, height):
    for _ in range(height):
        print('*' * width)

def shape_drawer():
    shape = input("Choose a shape (triangle or rectangle): ").strip().lower()

    if shape == 'triangle':
        height = int(input("Enter the height of the triangle: "))
        draw_triangle(height)
    elif shape == 'rectangle':
        width = int(input("Enter the width of the rectangle: "))
        height = int(input("Enter the height of the rectangle: "))
        draw_rectangle(width, height)
    else:
        print("Invalid shape")

# Run shape drawer
shape_drawer()
```

OUTPUT:

```
Choose a shape (triangle or rectangle):
```

```
rectangle
```

```
Enter the width of the rectangle:
```

```
4
```

```
Enter the height of the rectangle:
```

```
5
```

```
****
```

```
****
```

```
****
```

```
****
```

```
****
```

```
** Process exited - Return Code: 0 **
```

```
Press Enter to exit terminal
```