```python
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# Lab 8
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# This program will let you calculate any 2 numbers with any math you choose.

# user greeting
print("This program will let you calculate any 2 numbers with any math you
choose.")
print()

# loop starts
run = "Y"
while run == "Y":

    # user input for math problem
    choice = input("What type of math would you like to do? Please enter the first
letter of the calculation: ").upper()
    if choice not in ("A", "S", "M", "D", "T", "E"):
        choice = input("ERROR!!! Please type A to add, S for sub, M to multiply, D
to divide, T to truncate, E for exponent: ")

    # user input
    print()
    firstNumber = float(input("Enter first number: "))
    secondNumber = float(input("Enter seond number: "))
    print()

    # do calculation
    if choice == "A":
        typevari = "plus"
        variAnswer = firstNumber + secondNumber

    elif choice == "S":
        typevari = "subtracted by"
        variAnswer = firstNumber - secondNumber

    elif choice == "M":
        typevari = "multiplied by"
        variAnswer = firstNumber * secondNumber

    elif choice == "D":
        typevari = "divided by"
        variAnswer = firstNumber / secondNumber

    elif choice == "T":
        typevari = "truncated by"
        variAnswer = firstNumber // secondNumber

    else:
        typevari = "raised to the power of"
        variAnswer = firstNumber ** secondNumber

    # user outputs
    print(firstNumber, typevari, secondNumber,  "equals", format(variAnswer, ','))
    print()

# restart or exit
```

```python
    run = input("Would you like to try another problem? (Y/N): ").upper()

# error loop
    while run not in ("Y", "N"):
        run = input("ERROR!!! Please type a Y or N!!: ").upper()

# exit message
print("Have a nice day!!")
print()
```