CODE / COURSE	**DFN40323 PROGRAMMING ESSENTIALS IN PYTHON**	**PRACTICAL TASK**	**2**
PROGRAM / CLASS	**DDT4**	**DURATION**	**3 HOURS**
STUDENT'S NAME	**1) TIVIYAEN ELANGO 2) MUHAMMAD AFIQ MUHAIMIN BIN MOHD ZAINI**	**CLO 1**	**P3**
REG. NO.	**1) 32DDT20F2015 2) 32DDT20F2029**	**TOTAL MARKS**	**/75**
LECTURER'S NAME	**SHARIZAN BINTI ABDUL JAMIL**		

Learning Outcome:

By the end of this practical, student will able to:

Construct a software application using the Python programming language (CLO1, P3, PLO3).

Instructions:

Answer ALL the questions given. Students need to discuss in groups of two (2) and upload the findings of the discussion in report and .py file through CIDOS. Students will be accessed according to the Rubric given.

Question 1

Write a program to perform basic calculator (addition, subtraction, multiplication and division) by using condition statements. You need to select the math operation and get an input from the user.

Example Output 1 (Addition):

```
Please select the math operation you would like to complete:
"1" for addition
"2" for subtraction
"3" for multiplication
"4" for division

The math operation you choose is:
1

Enter your first number: 2
Enter your second number: 2

2 + 2 =  4

***Repl Closed***
```

Example Output 2 (Subtraction):

```
Please select the math operation you would like to complete:
"1" for addition
"2" for subtraction
"3" for multiplication
"4" for division

The math operation you choose is:
2

Enter your first number: 2
Enter your second number: 2
2 - 2 =  0

***Repl Closed***
```

Example Output 3 (Multiplication):

```
Please select the math operation you would like to complete:
"1" for addition
"2" for subtraction
"3" for multiplication
"4" for division

The math operation you choose is:
3

Enter your first number: 2
Enter your second number: 2
2 * 2 =  4

***Repl Closed***
```

Example Output 4 (Division):

```
Please select the math operation you would like to complete:
"1" for addition
"2" for subtraction
"3" for multiplication
"4" for division

The math operation you choose is:
4

Enter your first number: 2
Enter your second number: 2
2 / 2 =  1.0

***Repl Closed***
```

(25 marks)

SOURCE CODE & OUTPUT:

```
print("Please select the math operation you would like to complete: ")
print(' "1" for addition')
print(' "2" for subraction')
print(' "3" for multiplication')
print(' "4" for division')

operation = int(input("the math operation you choose is: "))

if (operation == 1):
    a = int(input("Enter your first number: "))
    b = int(input("Enter your second number: "))
    total = a + b
    print(a, " + ", b, " = ", total)

elif (operation == 2):
    a = int(input("Enter your first number: "))
    b = int(input("Enter your second number: "))
    total = a - b
    print(a, "-", b, "=", total)

elif (operation == 3):
    a = int(input("Enter your first number: "))
    b = int(input("Enter your second number: "))
    total = a * b
    print(a, "*", b, "=", total)

elif (operation == 4):
    a = int(input("Enter your first number: "))
    b = int(input("Enter your second number: "))
    total = a / b
    print(a, "/", b, "=", total)

else:
    print("Wrong Calculation")
```

Addition

```
Please select the math operation you would like to complete:
 "1" for addition
 "2" for subraction
 "3" for multiplication
 "4" for division
the math operation you choose is: 1
Enter your first number: 5
Enter your second number: 5
5  +  5  =  10
```

Substraction

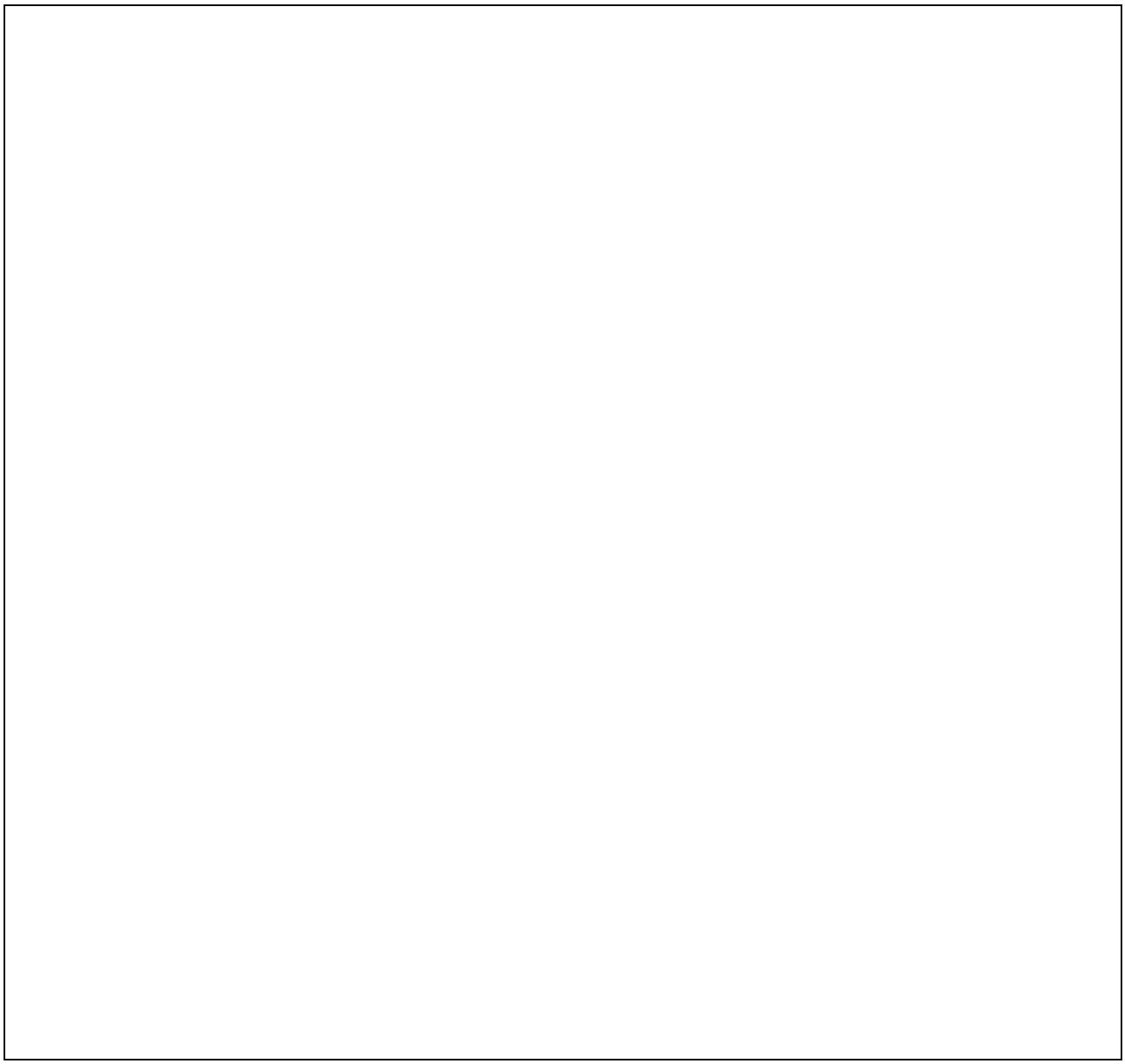
```
Please select the math operation you would like to complete:
 "1" for addition
 "2" for subraction
 "3" for multiplication
 "4" for division
the math operation you choose is: 2
Enter your first number: 5
Enter your second number: 5
5 - 5 = 0
```

Multiplication

```
Please select the math operation you would like to complete:
 "1" for addition
 "2" for subraction
 "3" for multiplication
 "4" for division
the math operation you choose is: 3
Enter your first number: 5
Enter your second number: 5
5 * 5 = 25
```

Division

```
Please select the math operation you would like to complete:
 "1" for addition
 "2" for subraction
 "3" for multiplication
 "4" for division
the math operation you choose is: 4
Enter your first number: 5
Enter your second number: 5
5 / 5 = 1.0
```



Question 2

Construct a Python program to create the multiplication table pattern by using looping statement. You need to get an input from the user. (Choose other number from sample output given).

Example Output:

```
Enter the number of rows 12
1
2  4
3  6  9
4  8  12  16
5  10  15  20  25
6  12  18  24  30  36
7  14  21  28  35  42  49
8  16  24  32  40  48  56  64
9  18  27  36  45  54  63  72  81
10  20  30  40  50  60  70  80  90  100
11  22  33  44  55  66  77  88  99  110  121
12  24  36  48  60  72  84  96  108  120  132  144

***Repl Closed***
```

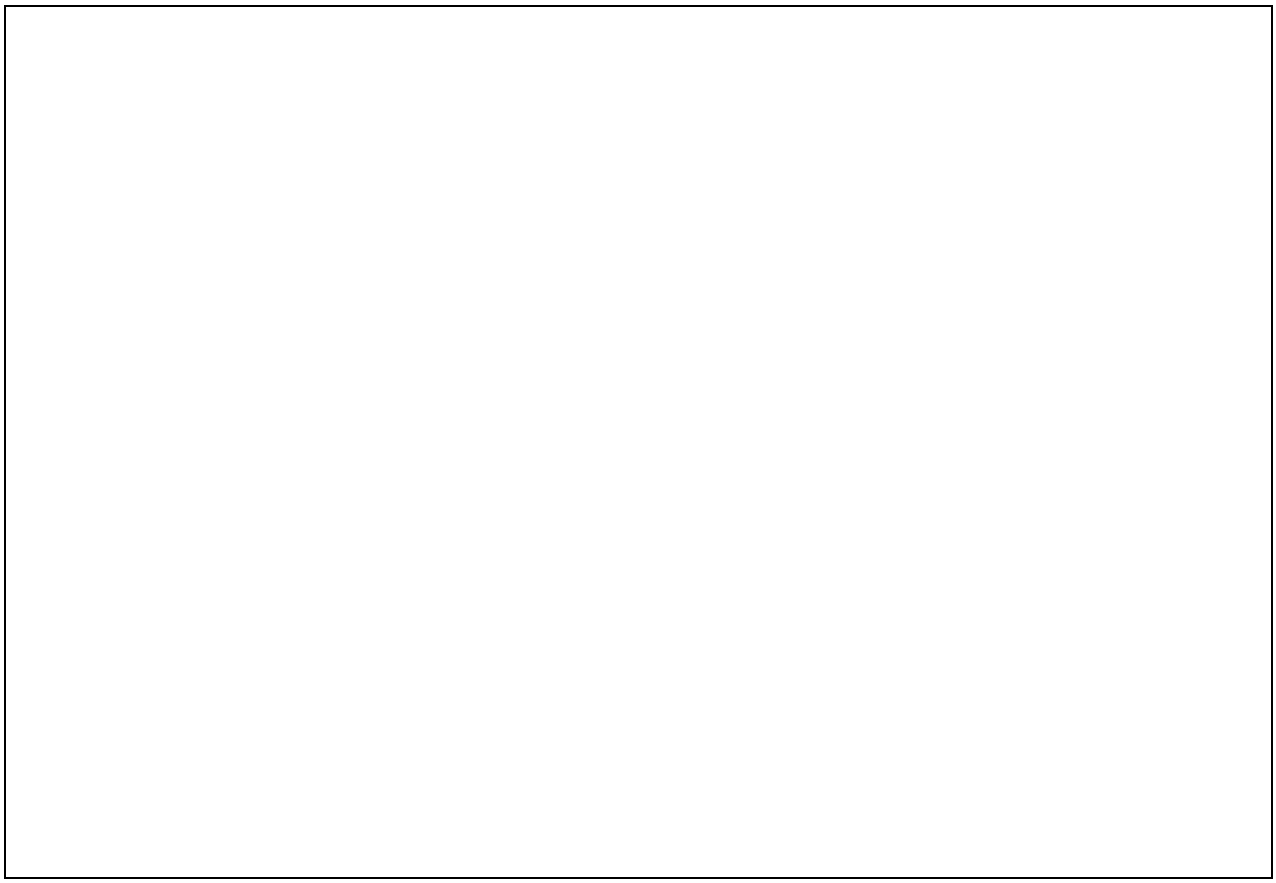
(25 marks)

SOURCE CODE & OUTPUT:

```
numofRows = int(input("Enter the number of rows: "))
for i in range(1, numofRows + 1):
    for j in range(1, i + 1):
        # It prints multiplication or row and column
        print(i * j, end='  ')
    print()
```

Output

```
Enter the number of rows: 10
1
2  4
3  6  9
4  8  12  16
5  10  15  20  25
6  12  18  24  30  36
7  14  21  28  35  42  49
8  16  24  32  40  48  56  64
9  18  27  36  45  54  63  72  81
10  20  30  40  50  60  70  80  90  100
```



Question 3

```
car = ["Ativa", "Harrier", "HR-V", "Jazz", "X70"]
brand = ["Perodua", "Volkswagen", "Honda", "Hyundai", "BMW", "Lexus", "Toyota"]
```

Figure 1

Given car and brand in Figure 1. Using a suitable python list method, write a coding to:

a. **Add a new element "Pesona" after "Jazz" in car.**
b. **Change "Hyundai" to "Proton" in brand.**
c. **Remove "Honda" in brand.**
d. **Sort brand in descending order.**
e. **Combine car and brand.**

(25 marks)

SOURCE CODE & OUTPUT:

Question a.

```
# a. Add a new element "Pesona" after "Jazz" in car
car = ["Ativa", "Harrier", "HR-V", "Jazz", "X70"]
print("Original List = ", car)
car.insert(4, "Pesona")
print("Add Pesona after Jazz = ", car)
print("\n")
```

Question b.

```
# b. Change "Hyundai" to "Proton" in brand.
brand = ["Perodua", "Volkswagen", "Honda", "Hyundai", "BMW", "Lexus", "Toyota"]
print("Original List=", brand)
brand[3] = "Proton"
print("After changing Hyundai to Proton = ", brand)
print("\n")
```

Question b and c not using suitable method.

Question c.

```
# c. Remove "Honda" in brand.
print("Original List = ", brand)
brand.remove("Honda")
print("After removing Honda = ", brand)
print("\n")
```

Question d.

```
# d. Sort brand in descending order.
print("Original List = ", brand)
brand.sort(reverse=True)
print("Descending List = ", brand)
print("\n")
```

Question e.

```
# e. Combine car and brand
car.extend(brand)
print("Join List", car)
print("\n")
```

Output Question a

```
Original List =  ['Ativa', 'Harrier', 'HR-V', 'Jazz', 'X70']
Add Pesona after Jazz =  ['Ativa', 'Harrier', 'HR-V', 'Jazz', 'Pesona', 'X70']
```

Output Question b

```
Original List= ['Perodua', 'Volkswagen', 'Honda', 'Hyundai', 'BMW', 'Lexus', 'Toyota']
After changing Hyundai to Proton =  ['Perodua', 'Volkswagen', 'Honda', 'Proton', 'BMW', 'Lexus', 'Toyota']
```

Output Question c

```
Original List =  ['Perodua', 'Volkswagen', 'Honda', 'Proton', 'BMW', 'Lexus', 'Toyota']
After removing Honda =  ['Perodua', 'Volkswagen', 'Proton', 'BMW', 'Lexus', 'Toyota']
```

Output Question d

```
Original List =  ['Perodua', 'Volkswagen', 'Proton', 'BMW', 'Lexus', 'Toyota']
Descending List =  ['Volkswagen', 'Toyota', 'Proton', 'Perodua', 'Lexus', 'BMW']
```

Output Question e

```
Join List ['Ativa', 'Harrier', 'HR-V', 'Jazz', 'Pesona', 'X70', 'Volkswagen', 'Toyota', 'Proton', 'Perodua', 'Lexus', 'BMW']
```

CONCLUSION:

So, from this exercise we learn on how to use if else if statement to make multiple selection for calculator app, we also learn on using nested loop to make a pyramid of number, Lastly, we also learn on using multiple list method to organize our list better