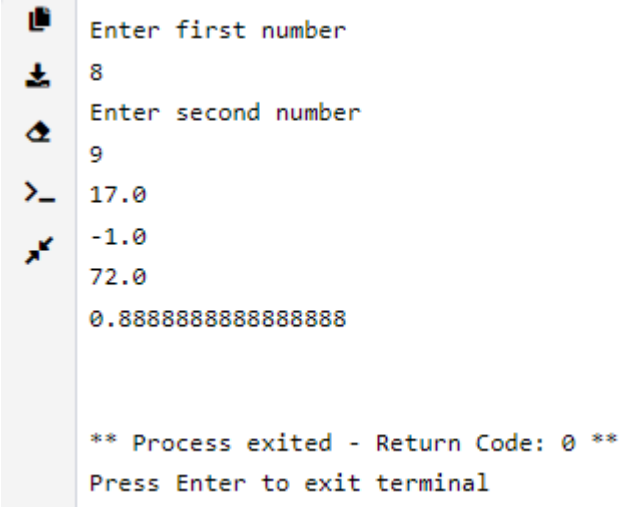
Task 1 : Calculator
Create a basic calculator that can perform basic arithmetic operations such as addition, subtraction, multiplication, and division using functions.

Code:

```
def addition(n1, n2):
    print(n1 + n2)

def subtraction(n1, n2):
    print(n1 - n2)

def multiplication(n1, n2):
    print(n1 * n2)

def division(n1, n2):
    print(n1 / n2 )

n1 = float(input("Enter first number"))
n2 = float(input("Enter second number"))

addition(n1, n2)
subtraction(n1, n2)
multiplication(n1, n2)
division(n1, n2)
```

Output:

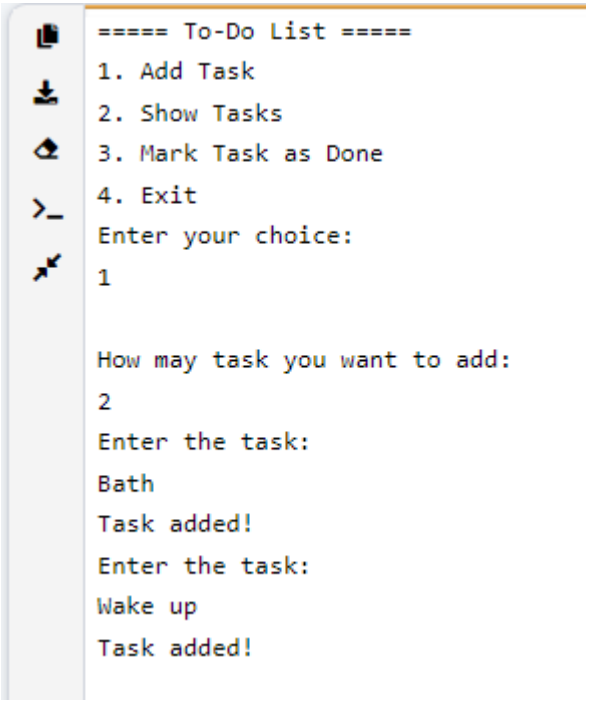


Task 2 : To-do list
Create a program that allows the user to create and manage a to-do list.

```
def main():
    tasks = []

    while True:
        print("\n===== To-Do List =====")
        print("1. Add Task")
        print("2. Show Tasks")
        print("3. Mark Task as Done")
        print("4. Exit")

        choice = input("Enter your choice: ")

        if choice == '1':
            print()
            n_tasks = int(input("How may task you want to add: "))

            for i in range(n_tasks):
                task = input("Enter the task: ")
                tasks.append({"task": task, "done": False})
                print("Task added!")

        elif choice == '2':
            print("\nTasks:")
            for index, task in enumerate(tasks):
                status = "Done" if task["done"] else "Not Done"
                print(f"{index + 1}. {task['task']} - {status}")

        elif choice == '3':
            task_index = int(input("Enter the task number to mark as done: ")) - 1
            if 0 <= task_index < len(tasks):
                tasks[task_index]["done"] = True
                print("Task marked as done!")
            else:
                print("Invalid task number.")

        elif choice == '4':
            print("Exiting the To-Do List.")
```

```
            break

        else:
            print("Invalid choice. Please try again.")

if __name__ == "__main__":
    main()
```

Output:

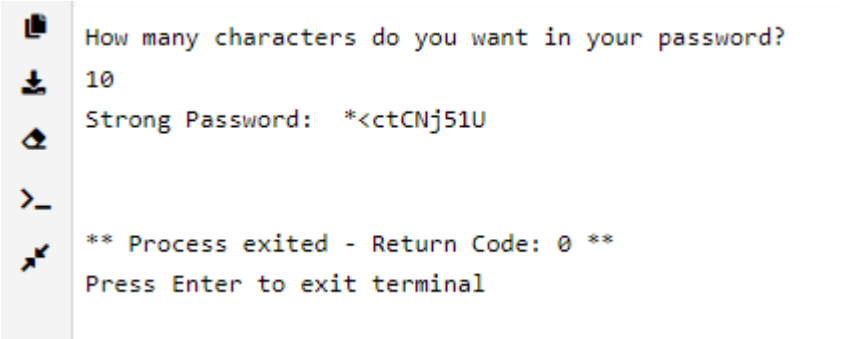


Task 9 : Random Password Generator
Create a program that generates a random password of a user-defined length.

```
# import modules
import string
import random


# store all characters in lists
s1 = list(string.ascii_lowercase)
s2 = list(string.ascii_uppercase)
s3 = list(string.digits)
```

```
s4 = list(string.punctuation)


# Ask user about the number of characters
user_input = input("How many characters do you want in your password? ")


# check this input is it number? is it more than 8?
while True:

    try:

        characters_number = int(user_input)

        if characters_number < 8:

            print("Your number should be at least 8.")

            user_input = input("Please, Enter your number again: ")

        else:

            break

    except:

        print("Please, Enter numbers only.")

        user_input = input("How many characters do you want in your
password? ")


# shuffle all lists
random.shuffle(s1)
random.shuffle(s2)
random.shuffle(s3)
random.shuffle(s4)


# calculate 30% & 20% of number of characters
```

```
part1 = round(characters_number * (30/100))
part2 = round(characters_number * (20/100))


# generation of the password (60% letters and 40% digits & punctuations)
result = []

for x in range(part1):

        result.append(s1[x])
        result.append(s2[x])

for x in range(part2):

        result.append(s3[x])
        result.append(s4[x])


# shuffle result
random.shuffle(result)


# join result
password = "".join(result)
print("Strong Password: ", password)
```



```
===== To-Do List =====
1. Add Task
2. Show Tasks
3. Mark Task as Done
4. Exit
Enter your choice:
3
Enter the task number to mark as done:
2
Task marked as done!

===== To-Do List =====
1. Add Task
2. Show Tasks
3. Mark Task as Done
4. Exit
Enter your choice:

Session Killed due to Timeout.
Press Enter to exit terminal
```