

## User Manual

### 1. Total and Average

- Input three numbers and calculate their sum and average.
- Example output:

```
Please input the first number: 50
Please input the second number: 60
Please input the third number: 70
The total of the three numbers is 180 and the average is 60.0
```

### 2. Tip and Bill

#### 2.1. Using Variables Only

- Enter the total bill and preferred tip percentage.
- Calculate the tip, convert it to decimal, and display the total bill to be paid.
- Example output:

```
How much did the meal cost? 3200
Please put how much percentage tip do you want to give? 5
Your tip amount is PHP 160.0 .
Your total bill to pay is PHP 3360.0 . Thank you.
```

#### 2.2. Using Def Function

- Same as 2.1 but implemented with a different script (def function).
- Example output:

```
How much did your meal cost? 5500
Kindly input your tip in percentage. Thank you. 10
Your tip amount is PHP 550.0 . Your total bill to pay is PHP 6050.0 . Thank you.
```

### 3. Slope of the Line

- Input four values:  $x_1$ ,  $x_2$ ,  $y_1$ , and  $y_2$ .
- Calculate the slope of the line based on these values.
- Example output:

```
Input your x_1: 10
Input your x_2: 17
Input your y_1: 24
Input your y_2: 25
The slope of the line is 0.14.
```

#### 4. Random Decimal

- Generate five random decimal numbers and calculate their average.
- Display the numbers and their average.
- Example output:

```
73.0,56.53,56.04,67.32,56.68
The average of the five random numbers is 61.91
```

#### 5. Digit Finder

- Input an exponent for  $2^n$  and the number of last digits to display.
- Display the last one and two digits, then the specified maximum last digits along with the actual value.
- Example output:

```
Kindly input your desired power in 2^n: 24
What is the maximum number of last digits do you want to find? 7
A.)The last digit when 2 is raised to 24 is 6
B.)The last two digits when 2 is raised to 24 is 16
C.)The last 7 digits when 2 is raised to 24 is 6777216
The value of 2^ 24 is 16777216
```

## 6. Name and Print

- Input a name and the number of times to display it.
- Use a for loop to print the name the specified number of times.
- Example output:

```
What is your name? Juan
How many times do you want it to be printed? 5
Juan
Juan
Juan
Juan
Juan
```

## 7. Fibonacci

### 7.1. Using For Loop

- Input the total number of Fibonacci sequence elements to display.
- Use a for loop to generate and display the sequence.
- Example output:

```
How many Fibonacci numbers do you want in the sequence? 10
1
1
2
3
5
8
13
21
34
55
```

## 7.2. Using While Loop

- Input a number and display the Fibonacci sequence until it's less than or equal to the input.
- Example output:

```
Until what number should the sequence be? 1000
1
1
2
3
5
8
13
21
34
55
89
144
233
377
610
987
```

## 8. Grade Conversion

- Simple if-else statements for grade conversion.
- Example output:

```
Kindly input your grades: 79
Your grade is C. Good performance!
```

## 9. Guessing Game

- Guess a number between 1-20 within three attempts.
- Prompt guides the user with hints if their guess is higher or lower.
- Example output:

```
This program is a guessing game! There are only 3 chances to play this game.  
Type your guess number between 1 and 20: 15  
Oops wrong! Too low! Please try again.  
Type your guess number between 1 and 20: 18  
Oops wrong! Too high! Please try again.  
Type your guess number between 1 and 20: 16  
  
Congratulations, You got it!  
The number is 16
```

## 10. **Multiplication Game**

- Answer 10 multiplication questions with integers between 1-10.
- Prompt displays if the answer is correct and provide a total score.
- Example output:

```
Question 1: 8 x 2 = 16  
Right!  
Question 2: 10 x 2 = 20  
Right!  
Question 3: 10 x 10 = 100  
Right!  
Question 4: 7 x 2 = 14  
Right!  
Question 5: 3 x 5 = 15  
Right!  
Question 6: 4 x 1 = 2  
Wrong! The answer is 4.  
Question 7: 4 x 10 = 2  
Wrong! The answer is 40.  
Question 8: 7 x 5 = 3  
Wrong! The answer is 35.  
Question 9: 10 x 2 = 5  
Wrong! The answer is 20.  
Question 10: 9 x 10 = 1  
Wrong! The answer is 90.  
  
You've got 5/10
```

### 11. Elapsed Time

- Input initial time, determine whether morning or evening, and the preferred elapsed time.
- Code calculates and displays the time after the elapsed time.
- Example output:

```
Enter hour: 10  
am (1) or pm (2)? 1  
How many hours ahead? 2  
New Hour: 12nn
```

### 12. Password Checker

- Simple login system with password input and five attempts.
- Default password is *password12345*.
- Example output:

```
Welcome, user  
Type your password: 123  
Incorrect password. You have 4 attempts left.  
Type your password: 5  
Incorrect password. You have 3 attempts left.  
Type your password: password12345  
Logged in succesfully.
```

### 13. Even Numbers

- Display even numbers up to 100 using a while loop.
- Example output:

```
0
2
4
6
8
10
12
14
16
18
```

#### 14. **Largest and Smallest**

- Input integers until desired and identify the largest and smallest numbers.
- Code displays the difference between them.
- Example output:

```
Type the integer [0 to stop input]: 45
Type the integer [0 to stop input]: 23
Type the integer [0 to stop input]: 56
Type the integer [0 to stop input]: 13
Type the integer [0 to stop input]: 567
Type the integer [0 to stop input]: 293
Type the integer [0 to stop input]: 43
Type the integer [0 to stop input]: 0
The difference of the largest integer, 567 , and the smallest integer, 43 , is 524
```

#### 15. **List & Calculate**

- Input integers into a list until desired.
- Display the count, sum, mean, and the list itself.
- Example output:

```
Type the integer [type 0 to stop]: 34
Type the integer [type 0 to stop]: 2
Type the integer [type 0 to stop]: 5
Type the integer [type 0 to stop]: 7
Type the integer [type 0 to stop]: 45
Type the integer [type 0 to stop]: 343
Type the integer [type 0 to stop]: 12
Type the integer [type 0 to stop]: 0
count: 7
sum: 448
mean: 64.0
list: [34, 2, 5, 7, 45, 343, 12]
```

## 16. Rock Paper Scissors

- Play a simple game of rock-paper-scissors with a score counter.
- Example output:

```
How many rounds do you want to play? 3
Type your choice between ROCK, PAPER, or SCISSORS: (use only capital letters) PAPER
Computer chose SCISSORS.
Computer wins.
Type your choice between ROCK, PAPER, or SCISSORS: (use only capital letters) ROCK
Computer chose PAPER.
Computer wins.
Type your choice between ROCK, PAPER, or SCISSORS: (use only capital letters) PAPER
Computer chose ROCK.
Player wins.
You won 1/3 matches.
```

## 17. Factorial

- Input a positive integer and calculate its factorial.
- Example output:

```
Enter a positive integer: 9
9 ! = 362880
```



## 18. **Practical 1**

- Calculate the total bill for multiple services with for loops and if-else statements.
- Example output:

```
SERVICES

Code      Description      Price
[A]        Hair Cut        P 100.00
[B]        Massage          P500.00
[C]        Nail Treatment  P200.00
How many services do you want to purchase?3
Type the Code of your Choice:a
Type the quantity of your service:4
4 Hair Cut P400.00
Type the Code of your Choice:c
Type the quantity of your service:8
8 Nail Treatment P1600.00
Type the Code of your Choice:b
Type the quantity of your service:17
17 Massage P8500.00
Total Purchase: 10500
Payment Amount: 11000
Your change is PHP 500.0.
```

## 19. **Practical 2**

- Calculate the total bill for multiple food items ordered.
- Example output:

```

Irrashaimase!! Welcome to Emiru's Noodle Shop!
Menu
Order Code      Noodle Dish      Price
[A1]            Classic Ramen     150.00
[B1]            Creamy Udon       120.00
[C1]            Soba Noodles      180.00
How many orders are you going to make? 2
Please choose the code of your noodle choice [A1, B1, C1]: a1
What is the quantity of your chosen order?8
8 Classic Ramen Order Price: PHP 1200.0
Please choose the code of your noodle choice [A1, B1, C1]: c1
What is the quantity of your chosen order?4
4 Soba Noodles Order Price: PHP 720.0
Your total bill is 1920
How much will you pay?2500
You have paid 2500.0
Your change is PHP 580.0.

```

## 20. Midterm - Perfect Number Checker

- Determine if the input is a perfect number using nested while, if-else, and for loops.
- Example output:

```

Enter a positive integer (or 0 to exit): 12
12 is not a perfect number.
Enter a positive integer (or 0 to exit): 56
56 is not a perfect number.
Enter a positive integer (or 0 to exit): 12
12 is not a perfect number.
Enter a positive integer (or 0 to exit): 1
1 is not a perfect number.
Enter a positive integer (or 0 to exit): 0
Goodbye!

```