

# **แบบฝึกหัด Python Programming**

## **Data Structure (50 ข้อ)**

1. Create a string variable with your name.
2. Create a numeric variable with your age.
3. Create a list variable with your favorite colors.
4. Create a tuple variable with your favorite foods.
5. Create a dictionary variable with your contact information.
6. Create a set variable with your favorite books.
7. Create a string variable and use the method upper() to convert it to uppercase.
8. Create a numeric variable and use the method abs() to get its absolute value.
9. Create a list variable and use the method append() to add an element to the end of the list.
10. Create a tuple variable and use the method count() to count the number of occurrences of a specific element.
11. Create a dictionary variable and use the method keys() to get a list of all keys in the dictionary.
12. Create a set variable and use the method add() to add an element to the set.
13. Create a string variable and use the method lower() to convert it to lowercase.
14. Create a numeric variable and use the method round() to round it to the nearest integer.
15. Create a list variable and use the method insert() to add an element at a specific index.
16. Create a tuple variable and use the method index() to find the index of a specific element.

17. Create a dictionary variable and use the method `values()` to get a list of all values in the dictionary.
18. Create a set variable and use the method `clear()` to remove all elements from the set.
19. Create a string variable and use the method `capitalize()` to capitalize the first letter of the string.
20. Create a numeric variable and use the method `pow()` to raise it to a specific power.
21. Create a list variable and use the method `remove()` to remove a specific element from the list.
22. Create a tuple variable and use the method `len()` to get the length of the tuple.
23. Create a set variable and use the method `difference()` to get the difference between two sets.
24. Create a string variable and use the method `replace()` to replace a specific substring with another substring.
25. Create a numeric variable and use the method `floor()` to round it down to the nearest integer.
26. Create a list variable and use the method `pop()` to remove and return the last element of the list.
27. Create a tuple variable and use the method `max()` to get the maximum value in the tuple.
28. Create a dictionary variable and use the method `items()` to get a list of all key-value pairs in the dictionary.
29. Create a set variable and use the method `intersection()` to get the intersection between two sets.
30. Create a string variable and use the method `split()` to split the string into a list of substrings.
31. Create a numeric variable and use the method `ceil()` to round it up to the nearest integer.
32. Create a list variable and use the method `extend()` to add elements from another list to the end of the list.

33. Create a tuple variable and use the method `min()` to get the minimum value in the tuple.
34. Create a dictionary variable and use the method `clear()` to remove all key-value pairs from the dictionary.
35. Create a set variable and use the method `union()` to get the union between two sets.
36. Create a string variable and use the method `join()` to join a list of substrings into a single string.
37. Create a numeric variable and use the method `sqrt()` to get the square root of the number.
38. Create a list variable and use the method `reverse()` to reverse the order of the elements in the list.
39. Create a tuple variable and use the method `sorted()` to sort the elements in the tuple.
40. Create a dictionary variable and use the method `pop()` to remove and return the value of a specific key.
41. Create a set variable and use the method `difference_update()` to remove the elements of another set from the set.
42. Create a string variable and use the method `strip()` to remove leading and trailing whitespace from the string.
43. Create a numeric variable and use the method `isnumeric()` to check if the number is numeric.
44. Create a list variable and use the method `count()` to count the number of occurrences of a specific element in the list.
45. Create a tuple variable and use the method `index()` to find the index of a specific element with a starting index.
46. Create a dictionary variable and use the method `update()` to update the dictionary with key-value pairs from another dictionary.
47. Create a set variable and use the method `add()` to add multiple elements to the set.
48. Create a string variable and use the method `title()` to capitalize the first letter of every word in the string.

49. Create a numeric variable and use the method `is_integer()` to check if the number is an integer.
50. Create a list variable and use the method `sort()` to sort the elements in the list.

## **If-Else (20 שׁוּב)**

1. Write a program that asks the user to enter a number and then prints whether it is positive or negative.
2. Write a program that asks the user to enter a number and then prints whether it is even or odd.
3. Write a program that asks the user to enter a number and then prints whether it is a multiple of 3 or not.
4. Write a program that asks the user to enter two numbers and then prints whether the first number is greater than the second number.
5. Write a program that asks the user to enter a letter and then prints whether it is a vowel or a consonant.
6. Write a program that asks the user to enter a year and then prints whether it is a leap year or not.
7. Write a program that asks the user to enter a temperature in Celsius and then prints whether it is freezing, normal, or hot.
8. Write a program that asks the user to enter a number and then prints whether it is a prime number or not.
9. Write a program that asks the user to enter a grade and then prints whether it is an A, B, C, D, or F.
10. Write a program that asks the user to enter a day of the week and then prints whether it is a weekday or a weekend.
11. Write a program that asks the user to enter a number and then prints whether it is between 1 and 10 or not.
12. Write a program that asks the user to enter a string and then prints whether it contains the letter 'a' or not.
13. Write a program that asks the user to enter a string and then prints whether it contains the word 'hello' or not.
14. Write a program that asks the user to enter a string and then prints whether it contains a number or not.
15. Write a program that asks the user to enter their age and then prints whether they are a child, teenager, or adult.

16. Write a program that asks the user to enter a number between 1 and 7 and then prints the corresponding day of the week.
17. Write a program that asks the user to enter their name and then prints whether their name starts with a vowel or a consonant.
18. Write a program that asks the user to enter a number and then prints whether it is divisible by 2, 3, or both.
19. Write a program that asks the user to enter a number and then prints whether it is a perfect square or not.
20. Write a program that asks the user to enter their height and weight, and then calculates their Body Mass Index (BMI) and prints whether they are underweight, normal weight, overweight, or obese.

## **For & While Loop (30 ပုံ)**

1. Write a program to print the numbers from 1 to 10 using a for loop.
2. Write a program to print the even numbers from 1 to 20 using a for loop.
3. Write a program to print the odd numbers from 1 to 15 using a for loop.
4. Write a program to print the sum of numbers from 1 to 100 using a for loop.
5. Write a program to print the multiplication table of 5 using a for loop.
6. Write a program to print the Fibonacci series up to 10 terms using a for loop.
7. Write a program to print the reverse of a string using a for loop.
8. Write a program to find the factorial of a number using a for loop.
9. Write a program to find the sum of digits in a number using a for loop.
10. Write a program to find the largest number in a list using a for loop.
11. Write a program to find the smallest number in a list using a for loop.
12. Write a program to remove duplicates from a list using a for loop.
13. Write a program to check if a given number is prime or not using a for loop.
14. Write a program to print the first 10 even numbers using a while loop.
15. Write a program to print the first 5 odd numbers using a while loop.
16. Write a program to print the numbers from 10 to 1 in reverse order using a while loop.
17. Write a program to print the sum of numbers from 1 to 50 using a while loop.
18. Write a program to print the multiplication table of 7 using a while loop.
19. Write a program to print the first 10 numbers of the Fibonacci series using a while loop.
20. Write a program to print the reverse of a number using a while loop.
21. Write a program to find the factorial of a number using a while loop.
22. Write a program to find the sum of digits in a number using a while loop.
23. Write a program to find the largest number in a list using a while loop.
24. Write a program to find the smallest number in a list using a while loop.

25. Write a program to remove duplicates from a list using a while loop.
26. Write a program to check if a given number is a palindrome or not using a while loop.
27. Write a program to find the GCD of two numbers using a while loop.
28. Write a program to print the first 20 numbers in the sequence 2, 4, 6, 8... using a while loop.
29. Write a program to print the first 15 numbers in the sequence 1, 4, 7, 10... using a while loop.
30. Write a program to check if a given string is a palindrome or not using a while loop.



## **Function (25 ပုံ)**

1. Write a function to calculate the area of a rectangle.
2. Write a function to calculate the perimeter of a rectangle.
3. Write a function to check if a number is even or odd.
4. Write a function to check if a number is prime or not.
5. Write a function to check if a given string is palindrome or not.
6. Write a function to find the factorial of a given number.
7. Write a function to find the greatest common divisor (GCD) of two numbers.
8. Write a function to find the least common multiple (LCM) of two numbers.
9. Write a function to convert Celsius to Fahrenheit.
10. Write a function to convert Fahrenheit to Celsius.
11. Write a function to find the sum of all elements in a list.
12. Write a function to find the product of all elements in a list.
13. Write a function to find the maximum element in a list.
14. Write a function to find the minimum element in a list.
15. Write a function to sort a list in ascending order.
16. Write a function to sort a list in descending order.
17. Write a function to count the number of occurrences of a given element in a list.
18. Write a function to check if all elements in a list are unique.
19. Write a function to calculate the sum of two numbers.
20. Write a function to calculate the difference of two numbers.
21. Write a function to calculate the product of two numbers.
22. Write a function to calculate the quotient of two numbers.
23. Write a function to find the square root of a given number.
24. Write a function to calculate the area of a circle.
25. Write a function to calculate the circumference of a circle.

## **OOP (20 שׁוּעוֹת)**

1. Create a class called "Car" that has properties such as "make", "model", "year", "color", and "price". Add methods to set and get these properties.
2. Create a class called "Person" that has properties such as "name", "age", and "address". Add methods to set and get these properties.
3. Create a class called "Rectangle" that has properties such as "length" and "width". Add methods to calculate the area and perimeter of the rectangle.
4. Create a class called "BankAccount" that has properties such as "accountNumber", "balance", and "accountType". Add methods to deposit and withdraw money from the account.
5. Create a class called "Employee" that has properties such as "name", "id", "position", and "salary". Add methods to set and get these properties.
6. Create a class called "Animal" that has properties such as "name", "species", "age", and "color". Add methods to set and get these properties.
7. Create a class called "Student" that has properties such as "name", "id", "major", and "GPA". Add methods to set and get these properties.
8. Create a class called "Shape" that has methods to calculate the area and perimeter of various shapes such as circle, rectangle, and triangle.
9. Create a class called "Book" that has properties such as "title", "author", "publisher", and "ISBN". Add methods to set and get these properties.
10. Create a class called "Movie" that has properties such as "title", "director", "genre", and "rating". Add methods to set and get these properties.
11. Create a class called "Bank" that has properties such as "name", "location", and "accounts". Add methods to add and remove accounts from the bank.
12. Create a class called "Hospital" that has properties such as "name", "location", and "patients". Add methods to add and remove patients from the hospital.
13. Create a class called "Restaurant" that has properties such as "name", "location", and "menu". Add methods to add and remove items from the menu.

14. Create a class called "Game" that has properties such as "name", "genre", "platform", and "rating". Add methods to set and get these properties.
15. Create a class called "SportsTeam" that has properties such as "name ", "sport", "captain", and "players". Add methods to add and remove players from the team.
16. Create a class called "BankingSystem" that has properties such as "customers", "accounts", and "transactions". Add methods to add and remove customers and accounts, and to record transactions.
17. Create a class called "OnlineStore" that has properties such as "name", "location", and "inventory". Add methods to add and remove items from the inventory, and to process orders.
18. Create a class called "MusicPlayer" that has properties such as "playlist", "volume", and "song". Add methods to add and remove songs from the playlist, and to change the volume and play songs.
19. Create a class called "WeatherApp" that has properties such as "location", "temperature", and "forecast". Add methods to get the current temperature and forecast for a given location.
20. Create a class called "SocialMedia" that has properties such as "username", "followers", "posts", and "likes". Add methods to add and remove posts, and to like and comment on posts.