Assignment 1: Variables and Control Flow

- Create a Kotlin program that prints "Hello, World!" to the console.
- Declare a variable age and set it to your age. Write a control flow statement to check if you are over 18 years old and print "You are an adult" or "You are a minor" accordingly.

Assignment 2: Basic Functions and Parameters

- Write a Kotlin function called calculateSquare that takes an integer as a parameter and returns its square.
- Call the calculateSquare function with different values and print the results.
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Assignment 3: Working with Collections

- Create an array of integers with the values: [5, 10, 15, 20, 25, 30, 35, 40].
- Use a Kotlin array function to calculate and print the sum of all the elements in the array.
- Use a forEach loop to print each number in the list.
- Use a Kotlin array function to find and print the maximum value in the array.
- Use a Kotlin array function to find and print the minimum value in the array.
- Use a Kotlin array function to filter and create a new array that contains only the even numbers from the original array. Print the new array.
- Use a Kotlin array function to map each element in the original array to its square. Print the resulting array.
- Use a Kotlin array function to check if any element in the array is divisible by 5. Print "Yes" if there is such an element, or "No" if none are divisible by 5.
- Use a Kotlin array function to sort the array in ascending order. Print the sorted array.
- Use a Kotlin array function to reverse the order of elements in the array. Print the reversed array.
- Use a Kotlin array function to count the number of elements greater than 20 in the array. Print the count.

Assignment 4: Classes and Inheritance

- Define a class Person with properties for name and age.
- Create a subclass Student that inherits from Person and has an additional property for the school.
- Create instances of both Person and Student classes and print their details.

Assignment 5: Interfaces and Inheritance

- Define an interface Shape with a method area().
- Create classes Circle and Rectangle that implement the Shape interface and calculate their respective areas.

- Calculate and print the areas of different shapes.

Assignment 6: Object Expressions and Declarations

- Create an object expression that represents a book with properties for title and author.
- Create an object declaration for a math utility with a function to calculate the factorial of a number.
- Use the book object and calculate factorials in your program.

Assignment 7: Enum Classes and Sealed Classes

- Define an enum class Color with values for different colors.
- Create a sealed class Result with subclasses Success and Error, each holding a message.
- Create instances of Color and Result classes and print their values.

Assignment 8: Data Classes and Extension Functions

- Create a data class Person with properties for name and age.
- Write an extension function to calculate the birth year of a person.
- Create a list of Person objects and calculate their birth years using the extension function.

Assignment 9: Higher-Order Functions

- Define a higher-order function that takes two numbers and a lambda expression to perform an operation.
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- Use this function to add, subtract, multiply, and divide two numbers with different lambda expressions.

Assignment 10: Using Kotlin Scope Functions

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- Write a program that uses Kotlin scope functions (let, run, with, apply, and also) to manipulate a string. For example, you can capitalize the string, print its length, or modify it in different ways.