Kotlin Basics – Exercise Worksheet

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Instructions: Answer each question and complete the coding exercises in Kotlin. Write your code and answers in the space provided.

# 1. Functions

a) Write a Kotlin function named printHello() that prints the message "Hello, Kotlin!" to the console.

b) Call the printHello() function from your main function.

Code:

# 2. Strings and String Templates

a) Given the variables val numberOfDogs = 3 and val numberOfCats = 2, write a single line of code that prints: I have 3 dogs and 2 cats using string concatenation.

b) Rewrite the above using a string template.

c) Given val s = "abc", write a line of code that prints: The length of abc is 3 using a string template with an expression.

Code:

# 3. Variables and Types

a) Declare a mutable variable called score and assign it the value 10.

b) Declare an immutable variable called playerName and assign it your name.

c) Explicitly declare a variable width of type Int and assign it the value 12.

d) Try to reassign a new value to playerName and write down the error message you get.

Code/Answer:

# 4. Conditionals and Control Flow

a) Write an if/else statement that compares val numberOfCups = 30 and val numberOfPlates = 50. If there are more cups than plates, print "Too many cups!" Otherwise, print "Not enough cups!"

b) Write an if/else-if/else statement for val guests = 30 that prints: "No guests" if guests is 0, "Small group of people" if guests is less than 20, and "Large group of people!" otherwise.

c) Write an if statement that checks if val numberOfStudents = 50 is in the range 1 to 100 (inclusive), and prints the number if true.

Code:

# 5. When Statement

a) Write a when statement for val results = 45 that prints: "No results" if results is 0, "Got results!" if results is between 1 and 39 (inclusive), and "That's a lot of results!" otherwise.

Code:

# 6. Loops

a) Given val pets = arrayOf("dog", "cat", "canary"), write a for loop that prints each pet on a separate line.

b) Write a for loop that prints both the index and the value of each element in pets.

c) Write a for loop that prints numbers from 1 to 5, all on the same line.

d) Write a while loop that increases a variable bicycles from 0 to 49, then prints the final value.

e) Use a repeat loop to print "Hello!" three times.

Code:

# 7. Lists and Arrays

a) Create an immutable list of three musical instruments and print the list.

b) Create a mutable list of three fruits, remove one fruit, and print the updated list.

c) Create an array of three colors and print the array.

d) Combine two arrays of integers and print the combined array.

Code:

# 8. Null Safety

a) Try to assign null to a variable declared as var numberOfBooks: Int = 5. What error do you get?

b) Declare a nullable variable var nickname: String? = null and use the safe call operator to print its length (should not throw an error).

c) Use the Elvis operator to print "No nickname" if nickname is null.

Code/Answer: