**Kotlin Tasks Solutions:**

1. Basic if-else Statements

1-A) Write a program that checks if a given number is positive, negative, or zero.

fun checkNumber(num: Int): String {

return if (num > 0) {

"Positive"

} else if (num < 0) {

"Negative"

} else {

"Zero"

}

}

fun main() {

val number = -5

println("The number is ${checkNumber(number)}")

}

1-B) Create a function that returns the largest of three numbers using if-else statements.

fun largestOfThree(a: Int, b: Int, c: Int): Int {

return if (a >= b && a >= c) {

a

} else if (b >= a && b >= c) {

b

} else {

c

}

}

fun main() {

val num1 = 10

val num2 = 15

val num3 = 5

println("The largest number is ${largestOfThree(num1, num2, num3)}")

}

**2. Using else if**

2-A) Write a program that assigns grades (A, B, C, D, F) based on a given score.

fun assignGrade(score: Int): String {

return if (score >= 90) {

"A"

} else if (score >= 80) {

"B"

} else if (score >= 70) {

"C"

} else if (score >= 60) {

"D"

} else {

"F"

}

}

fun main() {

val score = 85

println("The grade is ${assignGrade(score)}")

}

2-B) Implement a function that categorizes an age into different life stages (child, teenager, adult, senior) using else if.

fun lifeStage(age: Int): String {

return if (age < 13) {

"Child"

} else if (age < 20) {

"Teenager"

} else if (age < 65) {

"Adult"

} else {

"Senior"

}

}

fun main() {

val age = 45

println("The life stage is ${lifeStage(age)}")

}

3. Combining Logical Operators with Conditions

**a) Check if a number is within a specific range (e.g., 10 to 20):**

fun isWithinRange(num: Int, start: Int, end: Int): Boolean {

return num in start..end

}

fun main() {

val number = 15

println("Is the number within range? ${isWithinRange(number, 10, 20)}")

}

**b) Verify if a given username and password match predefined values:**

fun verifyCredentials(username: String, password: String): Boolean {

val correctUsername = "user123"

val correctPassword = "pass123"

return username == correctUsername && password == correctPassword

}

fun main() {

val username = "user123"

val password = "pass123"

println("Are the credentials correct? ${verifyCredentials(username, password)}")

}

4. Using the when Expression:

**a) Categorize a given day of the week:**

fun dayType(day: String): String {

return when (day.lowercase()) {

"monday", "tuesday", "wednesday", "thursday", "friday" -> "Weekday"

"saturday", "sunday" -> "Weekend"

else -> "Invalid day"

}

}

fun main() {

val day = "Saturday"

println("The day type is ${dayType(day)}")

}

**b) Return the corresponding season for a given month:**

fun monthToSeason(month: String): String {

return when (month.lowercase()) {

"december", "january", "february" -> "Winter"

"march", "april", "may" -> "Spring"

"june", "july", "august" -> "Summer"

"september", "october", "november" -> "Fall"

else -> "Invalid month"

}

}

fun main() {

val month = "April"

println("The season is ${monthToSeason(month)}")

}

**5. Practicing with Boolean Conditions**

**a) Check if a person is eligible to vote:**

fun canVote(age: Int, isCitizen: Boolean): Boolean {

return age >= 18 && isCitizen

}

fun main() {

val age = 20

val isCitizen = true

println("Is the person eligible to vote? ${canVote(age, isCitizen)}")

}

**b) Check if a person is both a student and an employee:**

fun isStudentAndEmployee(isStudent: Boolean, isEmployee: Boolean): Boolean {

return isStudent && isEmployee

}

fun main() {

val isStudent = true

val isEmployee = false

println("Is the person both a student and an employee? ${isStudentAndEmployee(isStudent, isEmployee)}")

}