Android Application Development – Practical

Practical 1

Aim: Write programs in Kotlin to implement Control structure, loops and object oriented concepts.

Theory:

If -else: In Kotlin, if is an expression is which returns a value. It is used for control the flow of program structure. There is various type of if expression in Kotlin.

Kotlin if-else Expression Syntax:

```
val returnValue = if (condation) {
      //code statement
   } else {
    // code statement
   }
   println(returnValue)
```

Kotlin when Expression: Kotlin, when expression is a conditional expression which returns the value. Kotlin, when expression is replacement of switch statement.

Syntax:

```
Val returnValue = when(variable){
Expression1  -> statement
Expression2  -> statement
Expression n  -> statement
else -> statement}
print(returnValue)
```

Kotlin For Loop:

Syntax: Iterate through range to print the values:

```
for( variable in start..end[step value])
{
    code to run
}
```

Kotlin supports both functional and object-oriented programming. By default, Kotlin classes are public and we can control the visibility of the class members using different modifiers.

Syntax of the class declaration:

```
class ClassName {
  // Variables or data members
  // Member functions or Methods
}
```

The syntax to declare an object of a class is:

```
var varName = ClassName()
```

A constructor can be defined as a type of member function or a special function that is used to initialize the properties of the class. There are two types of Constructors in Kotlin.

- Primary Constructor
- Secondary Constructor

Method overriding means to redefine or modify the method of the base class in its derived class. Thus, it can be only achieved in Inheritance.

Syntax:

```
open class base {
   open fun functionName() {
      // body
   }
}
class derived : base() {
   override fun functionName() {
      // body
   }
}
```

Exception is a runtime problem which occurs in the program and leads to program termination. To handle this type of problem during program execution the technique of exception handling is used.There are four different keywords used in exception handling. These are: try, catch, finally, throw

Program 1. Write a program to print largest of three numbers.

Program 2: Write a program to read a number and print its multiplication table using for loop.

Program 3: Write a program to read a number and print sum od digits of the number using while loop.

Program 4: Write a program to read a lowercase alphabet from keyboard and print if it its vowel or consonant using when expression.

Program 5: Write a program to demonstrate constructor overloading.

Program 6: Write a program to print demonstrate exception handling.