# 03-LiveData

Exploring how LiveData works with ViewModel

## Adding a button to fetch data

On ajoute un Button dans le activity_main.xml :

```xml
<Button
    android:id="@+id/bRandom"
    android:layout_height="wrap_content"
    android:layout_width="wrap_content"
    android:text="@string/fetch"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintLeft_toLeftOf="parent"
    app:layout_constraintRight_toRightOf="parent"
    app:layout_constraintVertical_bias="0.622"
/>
```

On modifie notre var myRandomNumber en MutableLiveData (DataGenerator.kt):

```kotlin
class DataGenerator : ViewModel() {
    private lateinit var myRandomNumber : MutableLiveData<String>

    fun getNumber () : MutableLiveData<String> {
        Log.i(TAG, "Get Number")
        if (!::myRandomNumber.isInitialized) {
            myRandomNumber = MutableLiveData()
            this.createNumber()
        }
        return  myRandomNumber
    }

    private fun createNumber() {
        Log.i(TAG, "Create new number")
        val random = Random()
        myRandomNumber.value = "Number : " + (random.nextInt(10-1) + 1)
    }

    ...
}
```

# 3 - How to observe data from LiveData into Activity

Dans le MainActivity :

```kotlin
class MainActivity : AppCompatActivity() {

    lateinit var model : DataGenerator

    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        setContentView(R.layout.activity_main)

        //data = DataGenerator()
        model = ViewModelProviders.of(this).get(DataGenerator::class.java)
        val myRandomNumber = model.getNumber()


        myRandomNumber.observe(this, { number ->
            tvNumber.text = number
            Log.i(TAG, "Random Number Set")
        } )
    }

    companion object {
        private val TAG = "Demo : " + DataGenerator::class.simpleName
    }
}
```

Et on rajoute un listener de notre bouton dans le onCreate de la MainActivity :

```kotlin
bRandom.setOnClickListener {
    model.createNumber()
}
```

On lance l'appli et la valeur change bien quand on clique sur le bouton