### **Tutorial-3**

### **Step 1 – Understand and Define the Problem (Analyse)**

The car safety system should activate an alarm when:

1. The ignition is ON (IGN = 1)
2. Either seat is occupied and the corresponding seatbelt is unfastened

**Key input signals:**

* DRIV – Driver present (1 = yes, 0 = no)
* PASS – Passenger present (1 = yes, 0 = no)
* IGN – Ignition ON (1 = yes, 0 = no)
* BELT\_D̅ – Driver seatbelt unfastened (1 = unfastened, 0 = fastened)
* BELT\_P̅ – Passenger seatbelt unfastened (1 = unfastened, 0 = fastened)

**Output signal:**

* ALARM – Active-LOW (0 = alarm ON, 1 = alarm OFF)