A **black box** is memory device used to record data in car and aircrafts which helps in restoration of the events before the accidents.



You are required to design a processor that will store data in the **black box** using Harvard architecture.

**Question # 1**

Clearly show the MMU (Memory Management Unit), Where will you attach the **Black box**. (diagram required).

**Question # 2**

In your opinion, how many pipeline stages are appropriate and why? ((diagram required))

**Question # 3**

You are required to introduce an assembly language instruction that will search a particular register value in the memory. What modifications are required on hardware (ALU) and software (virtual) sides.

**Question # 4**

What do think about the structural and Data Hazards. If they occur, then create a scenario?