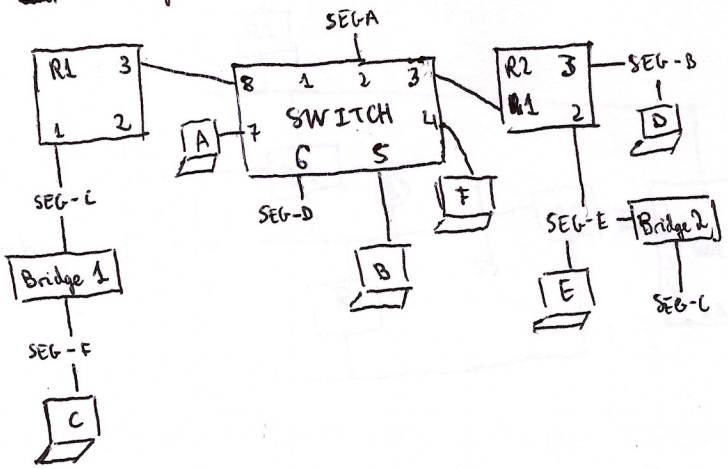
6.3. VLAN [1 2 3]

6.3.1.

Given the following network where

- Eth speed 100Mbps (SEG-x)
- ~~Both~~ Routers have 4 interfaces (Rx) (may be ~~not~~ unconfigured)
- Bridges are BridgeX
- Servers are marked with letters
- The center ~~switch~~ switch has 8 ports



a) With no VLANs, compute
   i) The number of collision domains
   ii) The number of broadcast domains

b) We define the port-based VLANs:
   - VLAN 1: 2, 3, 4, 5
   - VLAN 2: 6, 7, 8, 1

   Compute
   i) The number of collision domains
   ii) The number of broadcast domains
   iii) If all broadcast domains shall be connected via switch, what connection is needed?

a)
   i) 13 collision domains
   ii) 4 broadcast domains

b)
   i) 13 collision domains
   ii) 5 broadcast domains

   iii) Free ports: ~~R1~~ $R1_2$, $R1_4$, $R2_4$, Sw_1

   $Sw_1 \in$ VLAN 2
   $R1 \in$ VLAN 2 → Connect $Sw_1 - R2_4$
   $R2 \in$ VLAN 1