Exercise 2.2. Find a Petri net model of a meaningful system that contains symmetric confusion, the structure shown in Fig.2.5(a).

Answer: An example is shown below in Fig. 2.6. This represents a nuclear radiation monitoring system with the following specifications: There are two sensors attached to two independent computers to detect radiation in the environment. As each sensor detects radiation the corresponding computer goes into a warning mode. Only when both computers are in warning mode, a shutdown and evacuation take place. If only one of the sensors detects radiation, the only alternative is to test the performance of the sensor and computer not reporting radiation. If both computers are in warning mode, there is an option of performing up to two independent tests. At no time can a shutdown and evacuation be carried out while there are tests being performed. [Sanchez]

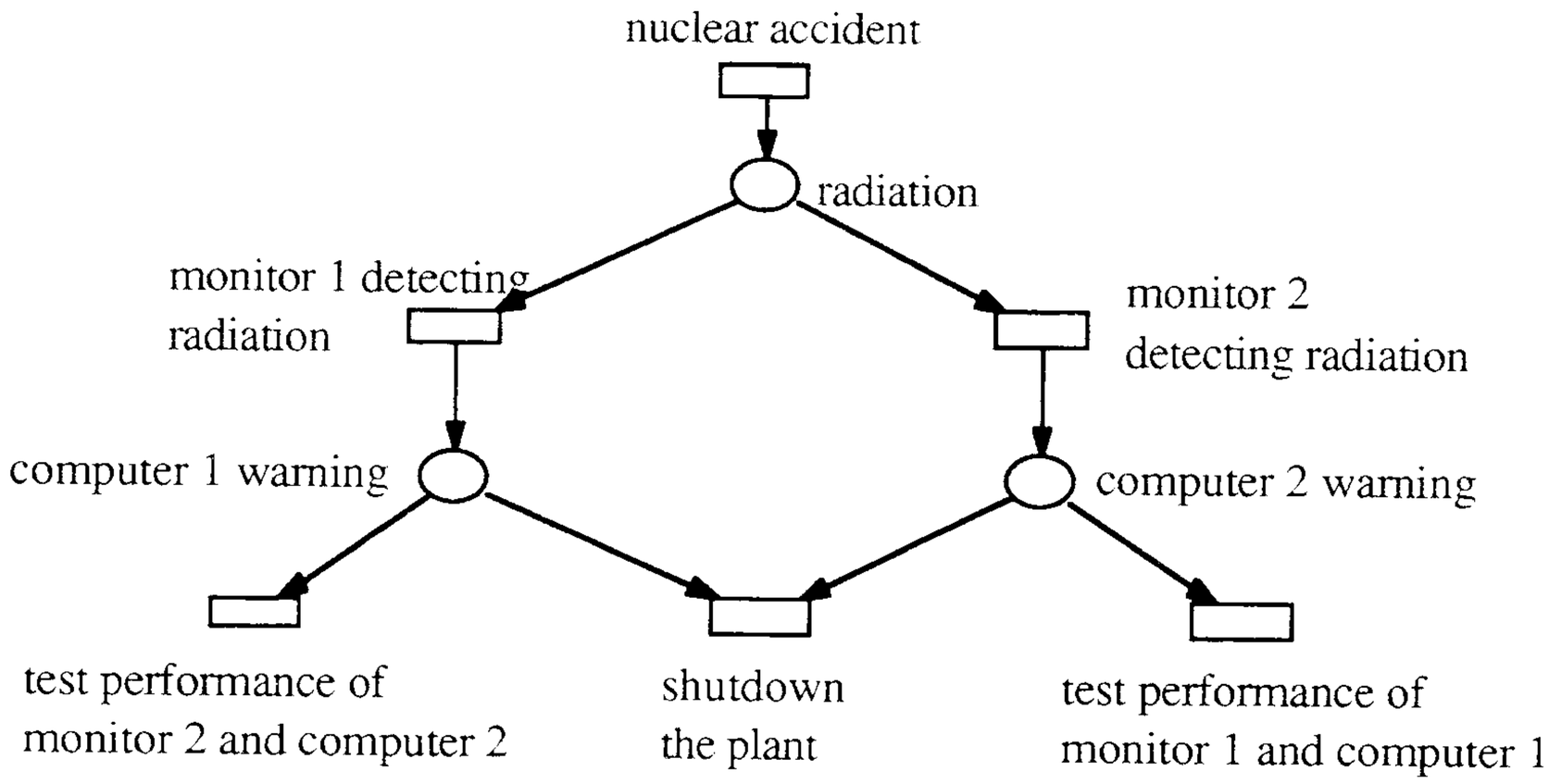

Fig. 2.6 Exercise 2.2

Exercise 2.3. Find two more examples of systems or situations that contain symmetric confusion. [Tow]

Answer: i) Two students who are deciding to do either a large joint project or do small individual projects ii) Two 100 watt power sources that can be used to support either one 200 watt device or two 100 watt devices.