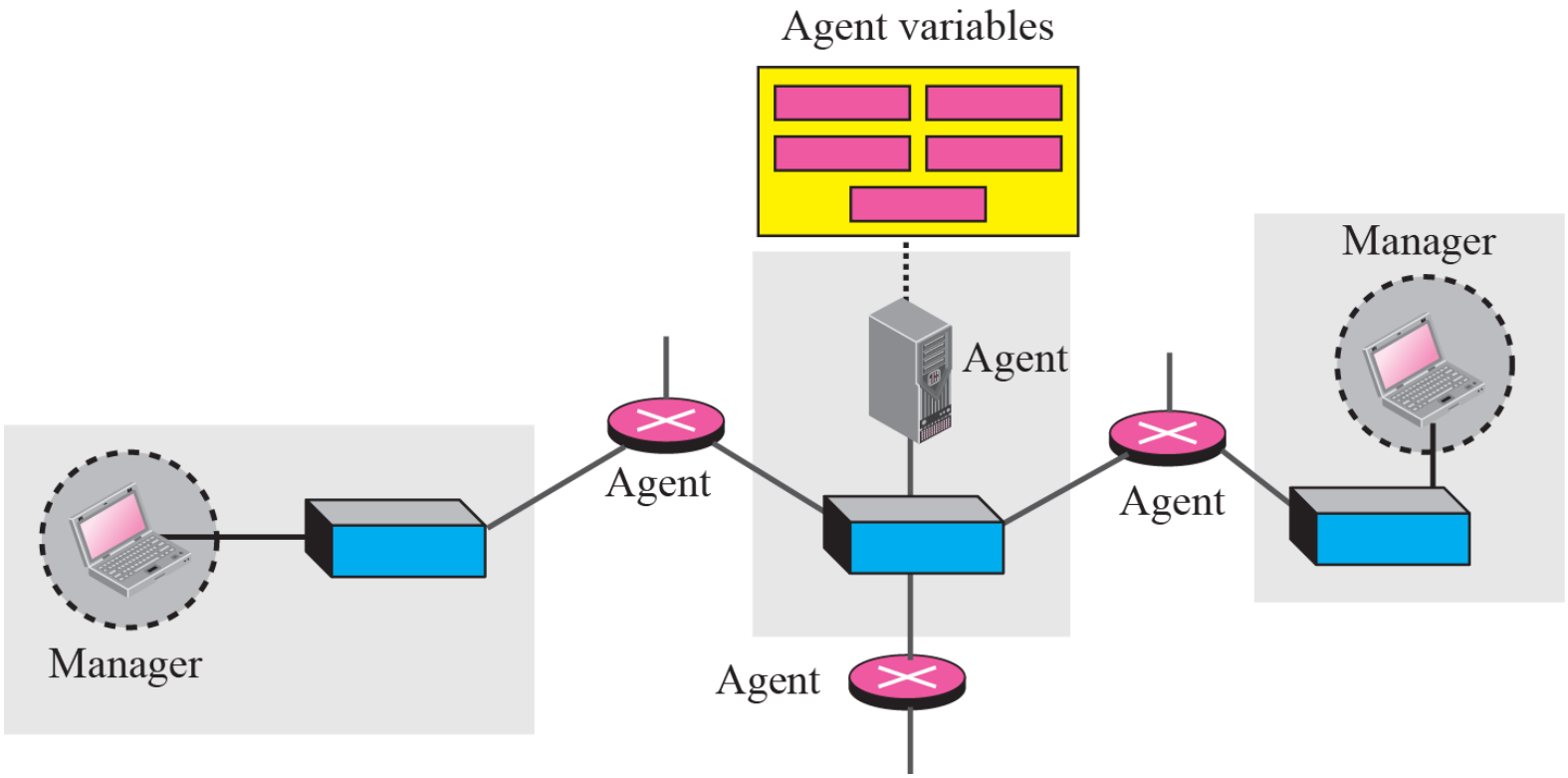
Simple network management protocol

SNMP-Simple Network Management Protocol

- SNMP uses the concept of manager and agent. That is, a manager, usually a host, controls and monitors a set of agents, usually routers or servers

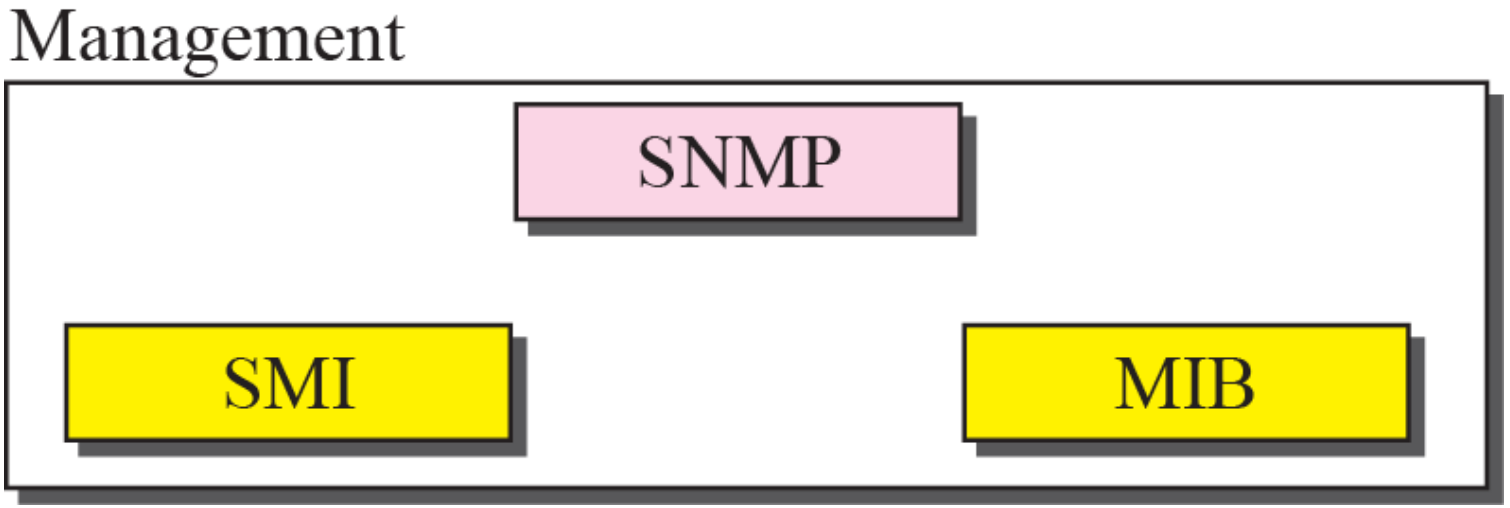
SNMP CONCEPT



MANAGEMENT COMPONENTS

- To do management tasks, SNMP uses two other protocols: Structure of Management Information (SMI) and Management Information Base (MIB). In other words, management on the Internet is done through the cooperation of three protocols: SNMP, SMI, and MIB

Companion of network management on the Internet

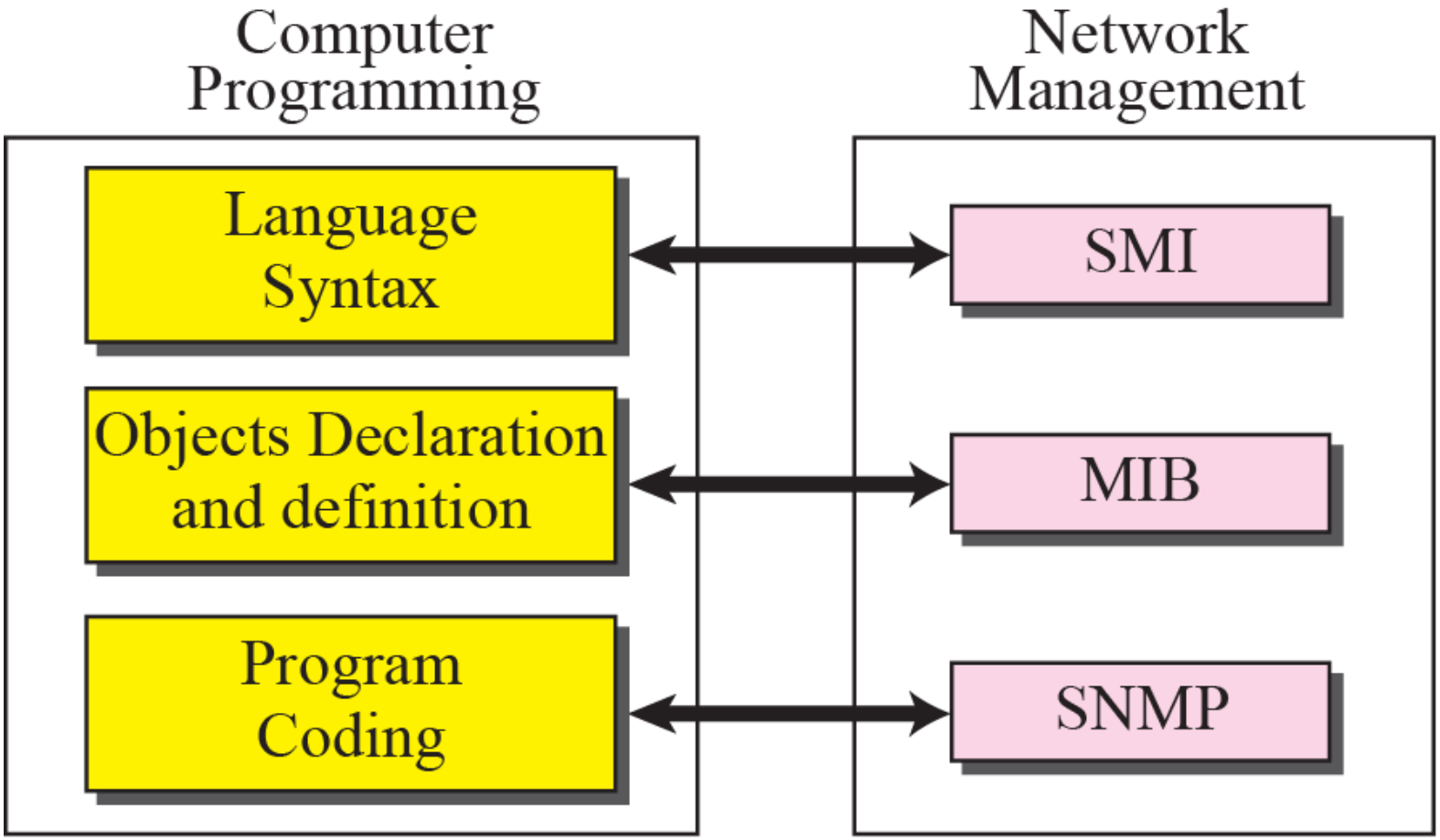


- *SNMP defines the format of packets exchanged between a manager and an agent. It reads and changes the status of objects (values of variables) in SNMP packets.*

- *SMI defines the general rules for naming objects, defining object types (including, range and length), and showing how to encode objects and values.*

- *MIB creates a collection of named objects, their types, and their relationships to each other in an entity to be managed.*

Comparing computer programming and network management



SMI

- The Structure of Management Information is a component for network management. Its functions are:
- 1. To name objects.
- 2. To define the type of data that can be stored in an object.
- 3. To show how to encode data for transmission over the network.
- SMI is a guideline for SNMP. It emphasizes three attributes to handle an object: name, data type, and encoding method.

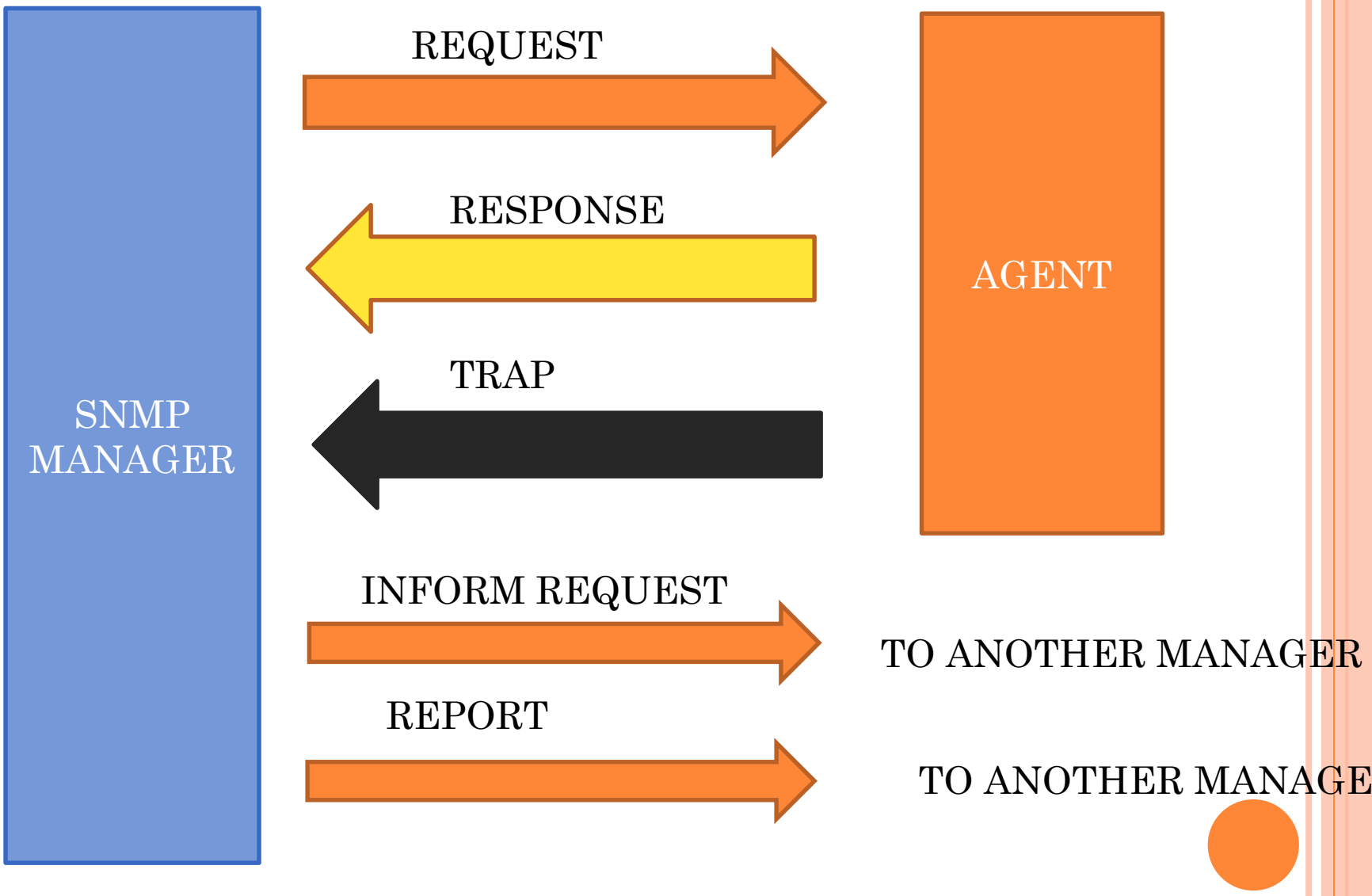
MIB

- The Management Information Base, version 2 (MIB2) is the second component used in network management. Each agent has its own MIB2, which is a collection of all the objects that the manager can manage. The objects in MIB2 are categorized under different groups: system, interface, address translation, ip, tcp, udp, transmission, and snmp.

SNMP

- SNMP uses both SMI and MIB in Internet network management. It is an application program that allows:
- 1. A manager to retrieve the value of an object defined in an agent.
- 2. A manager to store a value in an object defined in an agent.
- 3. An agent to send an alarm message about an abnormal situation to the manager.

UDP CONNECTIONS



UDP PORTS

- SNMP uses the services of UDP on two well-known ports, 161 and 162. The well-known port 161 is used by the server (agent), and the well-known port 162 is used by the client (manager).

THANK YOU