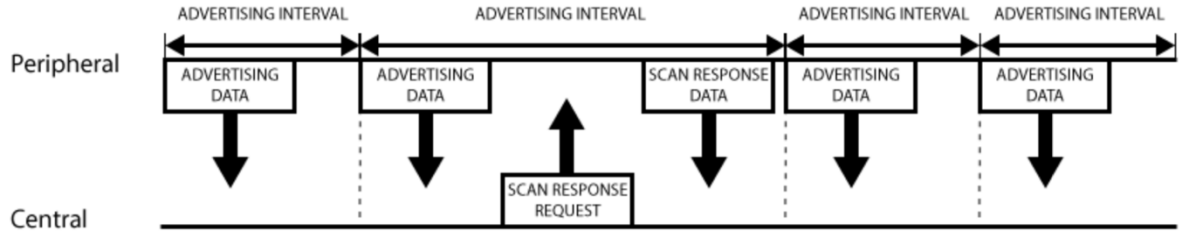
Exercise E2: Bluetooth, SSDP & MQTT

Task 1. GAP, SOA & SSDP

Task 1.1:



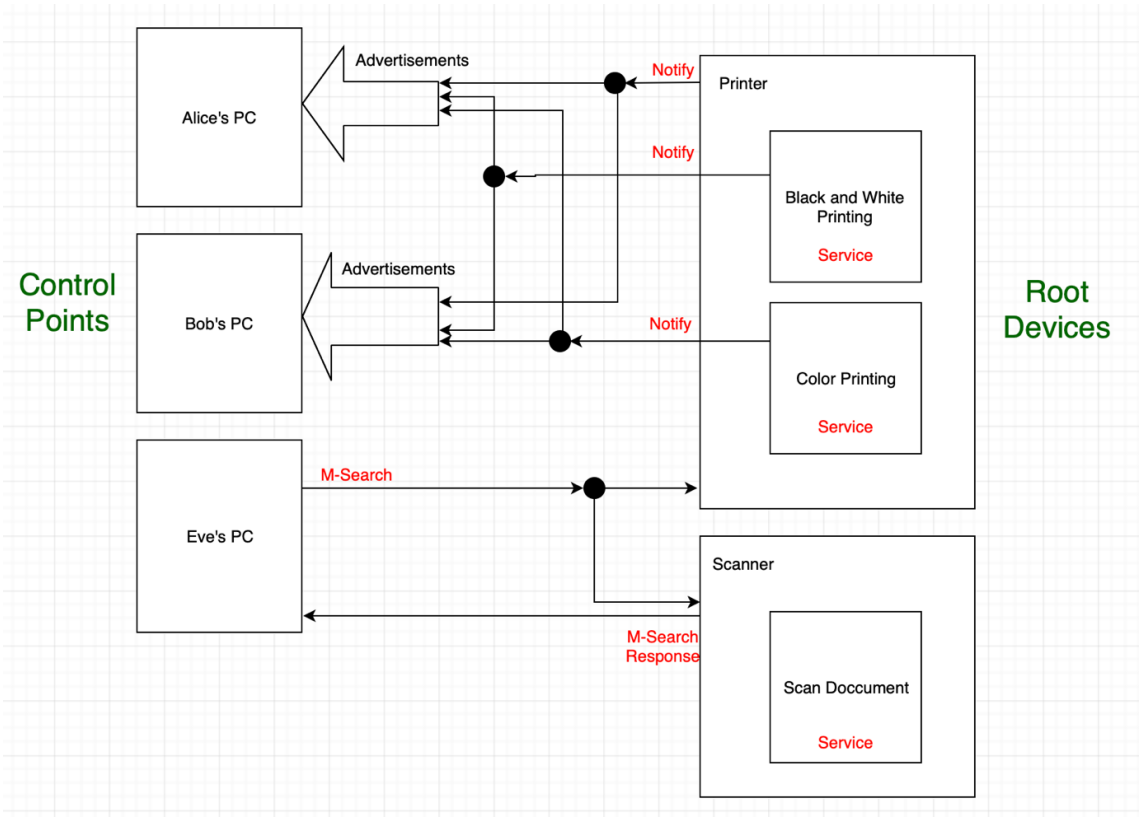
The **peripheral devices** (sensor nodes) would have the following parameters in the **'Advertising Data'** packets: the 'Service UUIDs', the 'Local Name', the 'Manufacturer Specific Data' and the flag 'General Discoverable Mode'.
When a **'Scan Response Request'** packet is sent by the **central** device (smartphone) it would have the parameters: the 'Service UUIDs', the 'Local Name', the 'Manufacturer Specific Data' and the 'Service Solicitation'.
When the **peripheral** answers back with the **'Scan Response Data'** it would have: 'Service UUIDs', the 'Local Name', the 'Manufacturer Specific Data' and finally the 'Service Data'.

Task 1.2:

a) ***Service Lookup:*** *In 'Service Lookup' the 'Service Client' goes through a 'Service Registry' as a lookup server in order to find the service.*
Service Discovery: *In 'Service Discovery' the 'Service Client' can find a service but there is no clear manifestation of a 'Service Registry' to look up to, the service registration may be distributed throughout the network or in the service provider itself*

b) ***Types of 'Service Registry':***
- ***Central Registry:*** *One place for all information, may be one server or replicated on several.*
- ***Distributed Registry:*** *Different parts of the register are hosted on different nodes.*
- ***No Registry:*** *'Service Discovery', the services announce their presence periodically.*

Task 1.3:


Control Points
Alice's PC
Bob's PC
Eve's PC
Advertisements
Advertisements
M-Search
Notify
Notify
Notify
M-Search Response
Printer
Black and White Printing
Service
Color Printing
Service
Scanner
Scan Doccument
Service
Root Devices