



GALGOTIAS
UNIVERSITY

**School of Computing
Science and Engineering**

Program: B.Tech.

Course Code: CSCN 4024

Course Name: Wireless and Mobile
Security

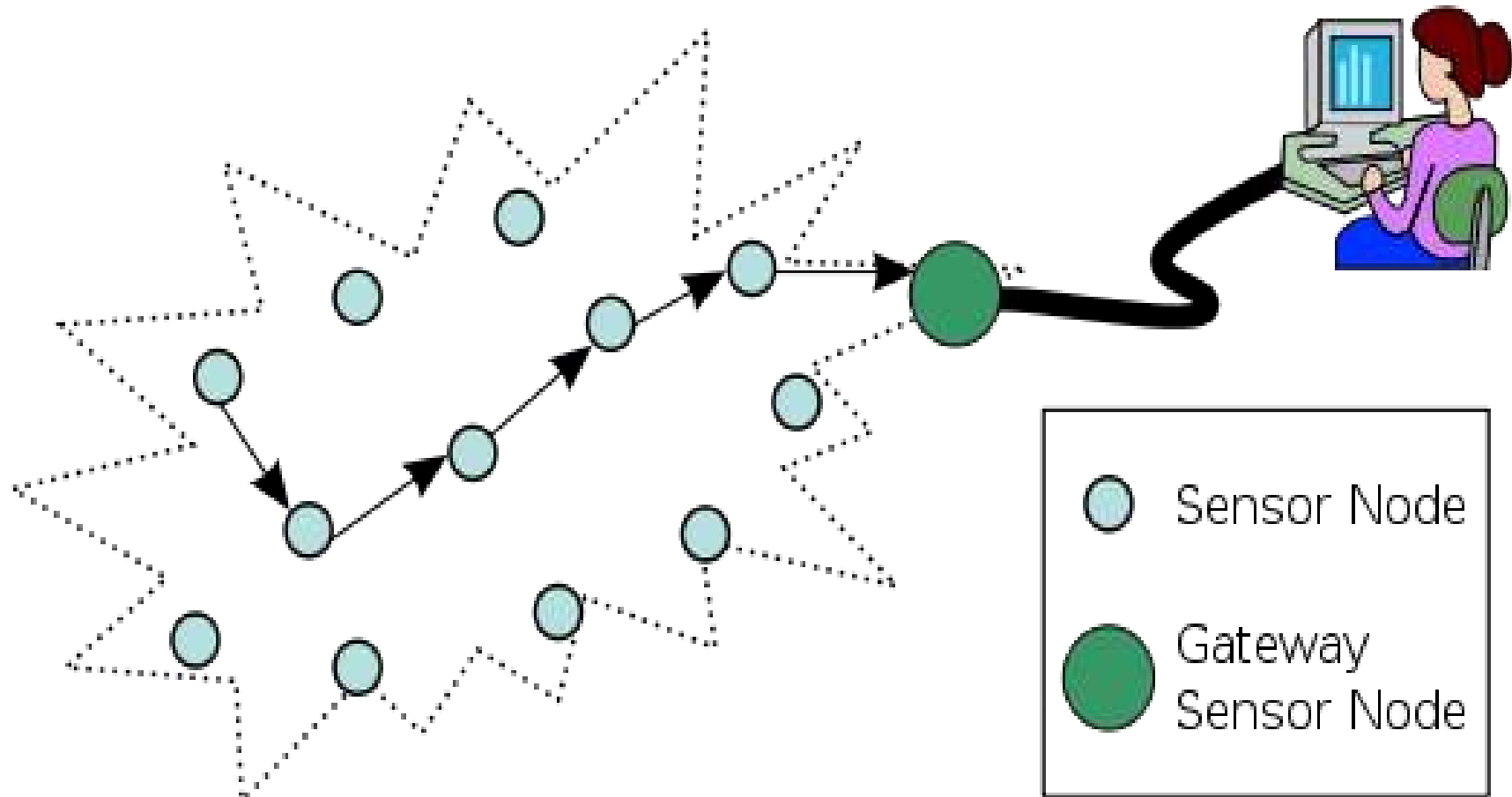
wireless sensor network

- A wireless sensor network (WSN) is a collection of large number of sensor nodes to cooperatively monitor physical or environmental conditions, such as temperature, sound, vibration, pressure, motion or pollutants etc. at different locations.

Challenges of wireless sensor network

- Limited Energy
- Limited computation capabilities
- Limited Bandwidth
- Security

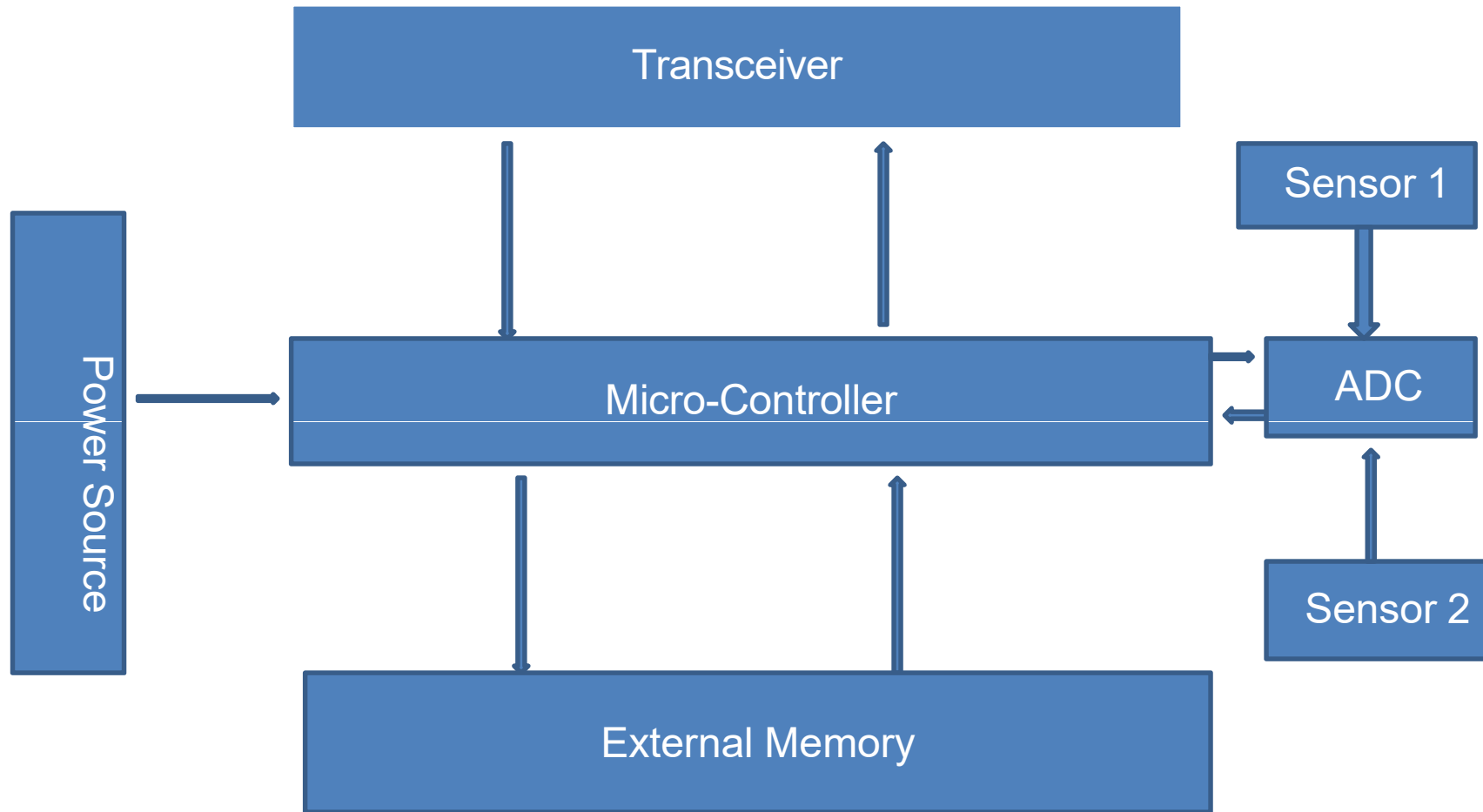
Wireless Sensor Network Architecture



Application of wireless sensor network

1. Military Application
2. Environmental monitoring
3. Medical application
4. Traffic control
5. Agriculture

Architecture of Sensor Node



Data Aggregation in WSNs

Data aggregation is the process of combining the data coming from various sources (sensor nodes) and enrouting them after removing redundancies to improve the overall network lifetime.

The in-network processing is done at the aggregator node.

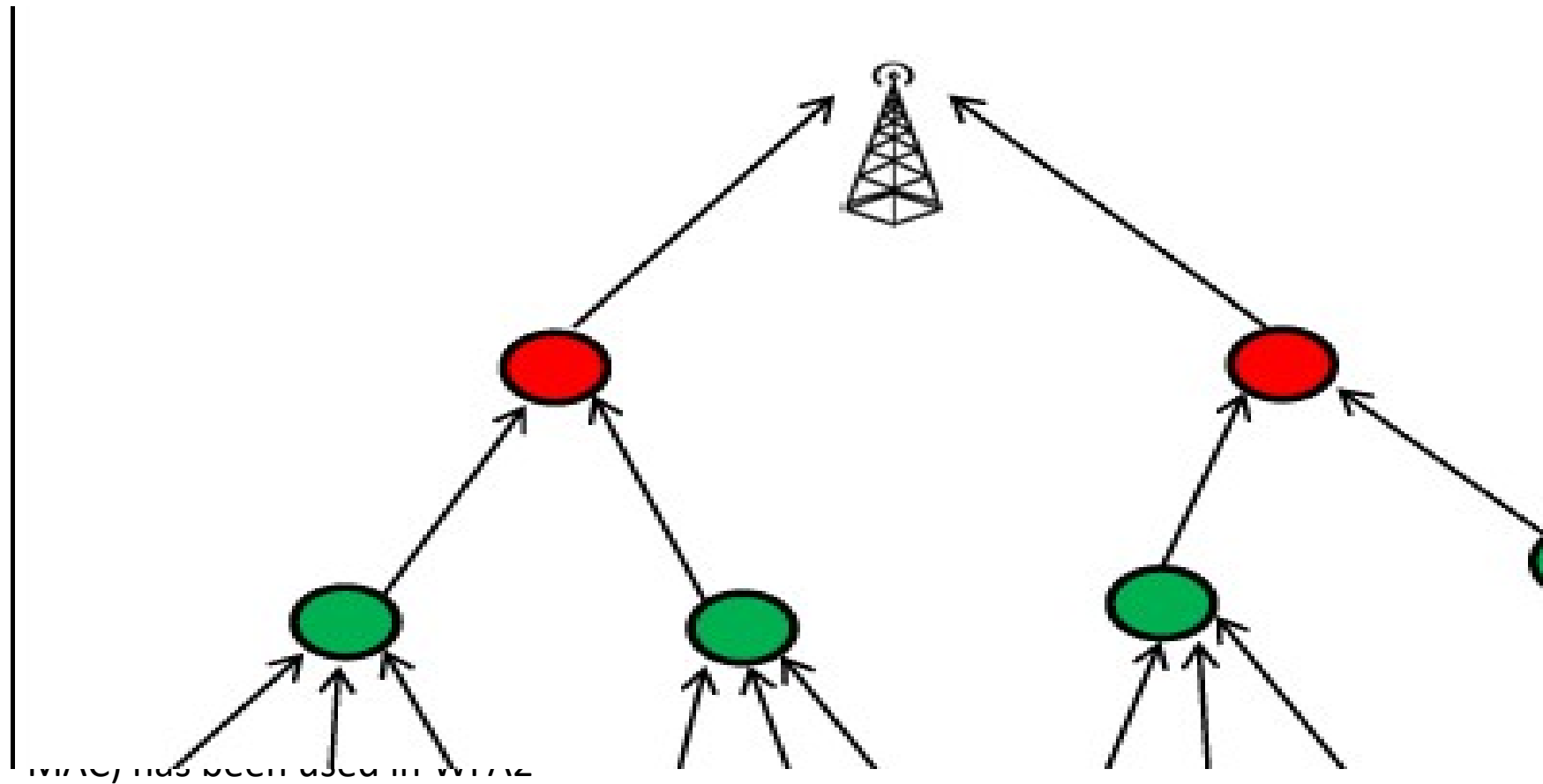
The aggregator node aggregates the data received from its child nodes as per the required aggregation function (like min, max, average, sum etc.) and sends the aggregated result to the other high level aggregated node or sink.

Data Aggregation in WSNs

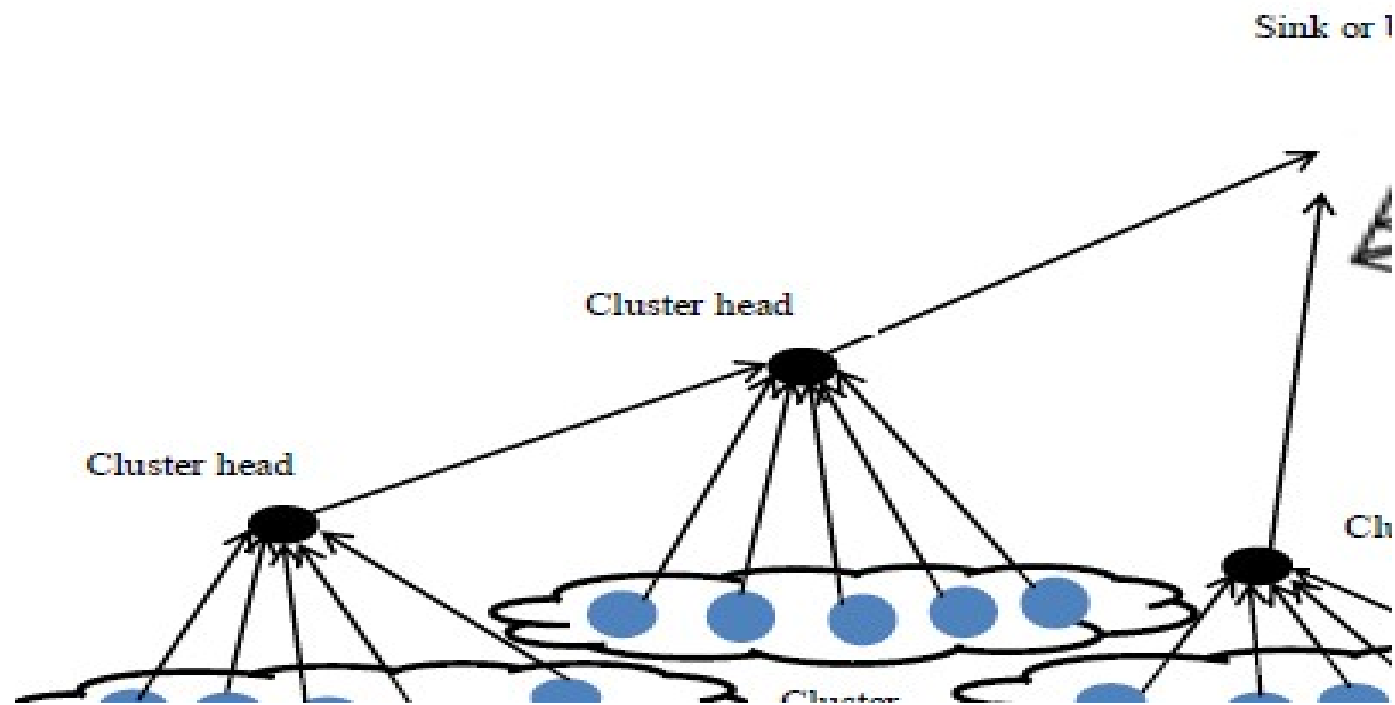
Based on the architecture of wireless sensor network data aggregation protocols can be classified into

- tree based data aggregation protocol
- cluster based data aggregation protocol

Tree based data aggregation protocol



Cluster based data aggregation protocol





Thank You