



Course Name:

Mobile Computing for Modern App Development

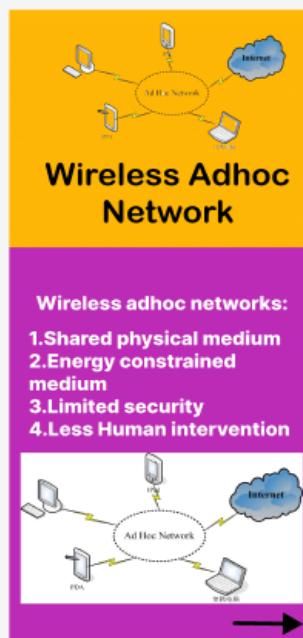
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Course Code: CSA0302

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iPhone 13 mini - 2



iPhone 13 mini - 3

- Challenges in Wireless Ad Hoc Networks**
1. Limited Bandwidth
 - Wireless links have lower data rates.
 - Traffic overload can easily cause congestion.
 2. Dynamic Topology
 - Nodes move frequently → links break often.
 - Routing becomes unstable and needs constant updates.
 3. Energy Constraints
 - Devices run on battery.
 - Continuous communication drains power quickly.
 - Nodes may die unexpectedly → network breaks.

Frame 1

4. Security Vulnerabilities
 - No fixed infrastructure = easier to attack.
 - Risks include:
 - Node impersonation
 - Eavesdropping
 - Denial of Service (DoS)
 - Data tampering
5. Routing Challenges
 - Many routing protocols may fail when:
 - Nodes move fast
 - Network grows large
 - Links drop suddenly
6. Limited Range
 - Each node has a small transmission range.
 - Network becomes fragmented when nodes are too far.

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8. Scalability Issues
 - Difficult to manage when number of nodes increases.
 - Routing tables become large.
 - More collisions and delays.
9. Quality of Service (QoS) Problems
 - Hard to guarantee:
 - Low latency
 - Bandwidth
 - Reliable delivery
 - Especially during mobility or congestion.
10. Lack of Centralized Control
 - No access point or base station.
 - Hard to coordinate:
 - Security
 - Resource allocation
 - Network management