17) Create a visual representation in Figma illustrating the operation of proactive and reactive routing protocols in mobile IP.
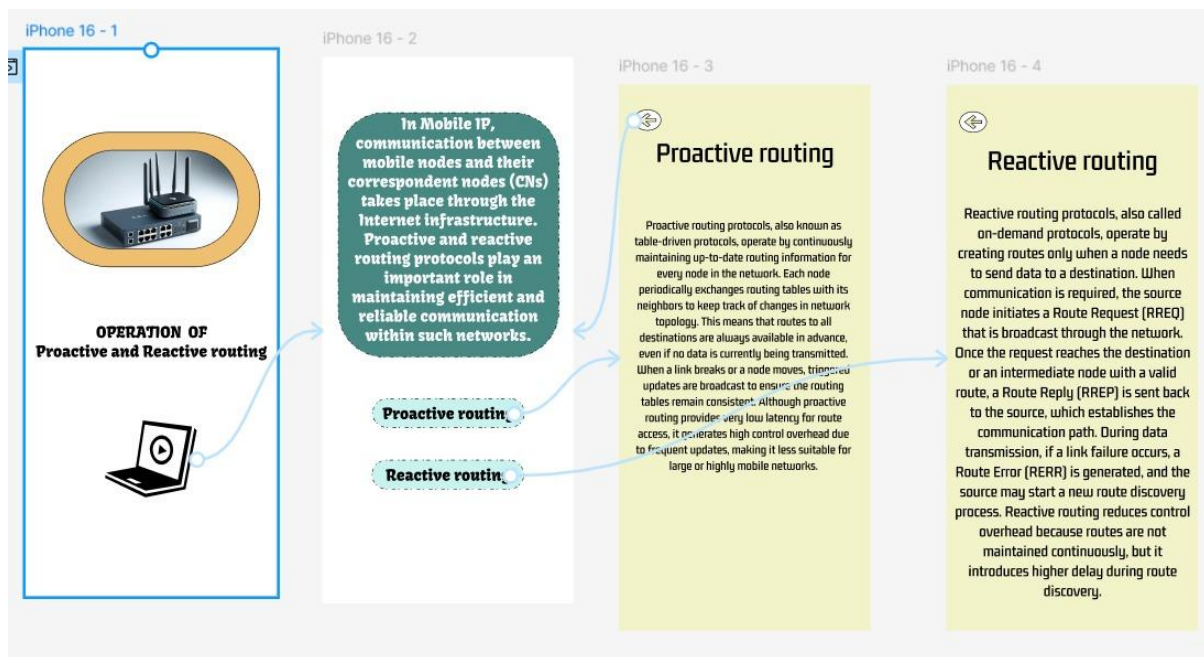
Aim:

Create a visual representation in Figma illustrating the operation of proactive and reactive routing protocols in mobile IP.

Procedure:

1. Define Presentation Structure

2. Create a Figma Project

3. Design Visual Elements

4. Make it Interactive

5. Add Annotations and Explanations

6. Incorporate Multimedia

7. Storyboard Animation

8. Test the Prototype

9. Collaborate and Gather Feedback

10. Finalize and Share

Design:

OPERATION OF
Proactive and Reactive routing

In Mobile IP, communication between mobile nodes and their correspondent nodes (CNs) takes place through the Internet infrastructure. Proactive and reactive routing protocols play an important role in maintaining efficient and reliable communication within such networks.

Proactive routing

Reactive routing

Proactive routing

Proactive routing protocols, also known as table-driven protocols, operate by continuously maintaining up-to-date routing information for every node in the network. Each node periodically exchanges routing tables with its neighbors to keep track of changes in network topology. This means that routes to all destinations are always available in advance, even if no data is currently being transmitted. When a link breaks or a node moves, triggered updates are broadcast to ensure the routing tables remain consistent. Although proactive routing provides very low latency for route access, it generates high control overhead due to frequent updates, making it less suitable for large or highly mobile networks.

Reactive routing

Reactive routing protocols, also called on-demand protocols, operate by creating routes only when a node needs to send data to a destination. When communication is required, the source node initiates a Route Request (RREQ) that is broadcast through the network. Once the request reaches the destination or an intermediate node with a valid route, a Route Reply (RREP) is sent back to the source, which establishes the communication path. During data transmission, if a link failure occurs, a Route Error (RERR) is generated, and the source may start a new route discovery process. Reactive routing reduces control overhead because routes are not maintained continuously, but it introduces higher delay during route discovery.

Result:

Hence the illustrating the operation of proactive and reactive routing protocols in mobile IP is created and executed successfully