exp 1

exp 1

## Basic Cellular System

## Analog Circuit-Switched System

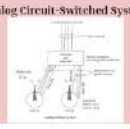
A basic analog cellular system consists of three subsystems:
1. A Mobile Unit
2. A Cell Site
3. A Mobile Telephone Switching Office (MTSO) with CONNECTIONS to link the three subsystems

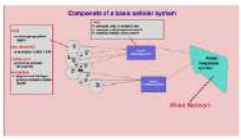
## Digital Circuit-Switched System

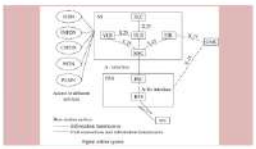
A Basic Digital System consists of four elements:

1. Mobile Station
2. Base Transceiver Station (BTS)
3. Base Station Controller (BSC)
4. Switching Subsystem

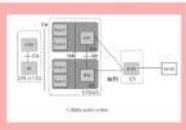
## Analog Circuit-Switched System





## Packet Switched System





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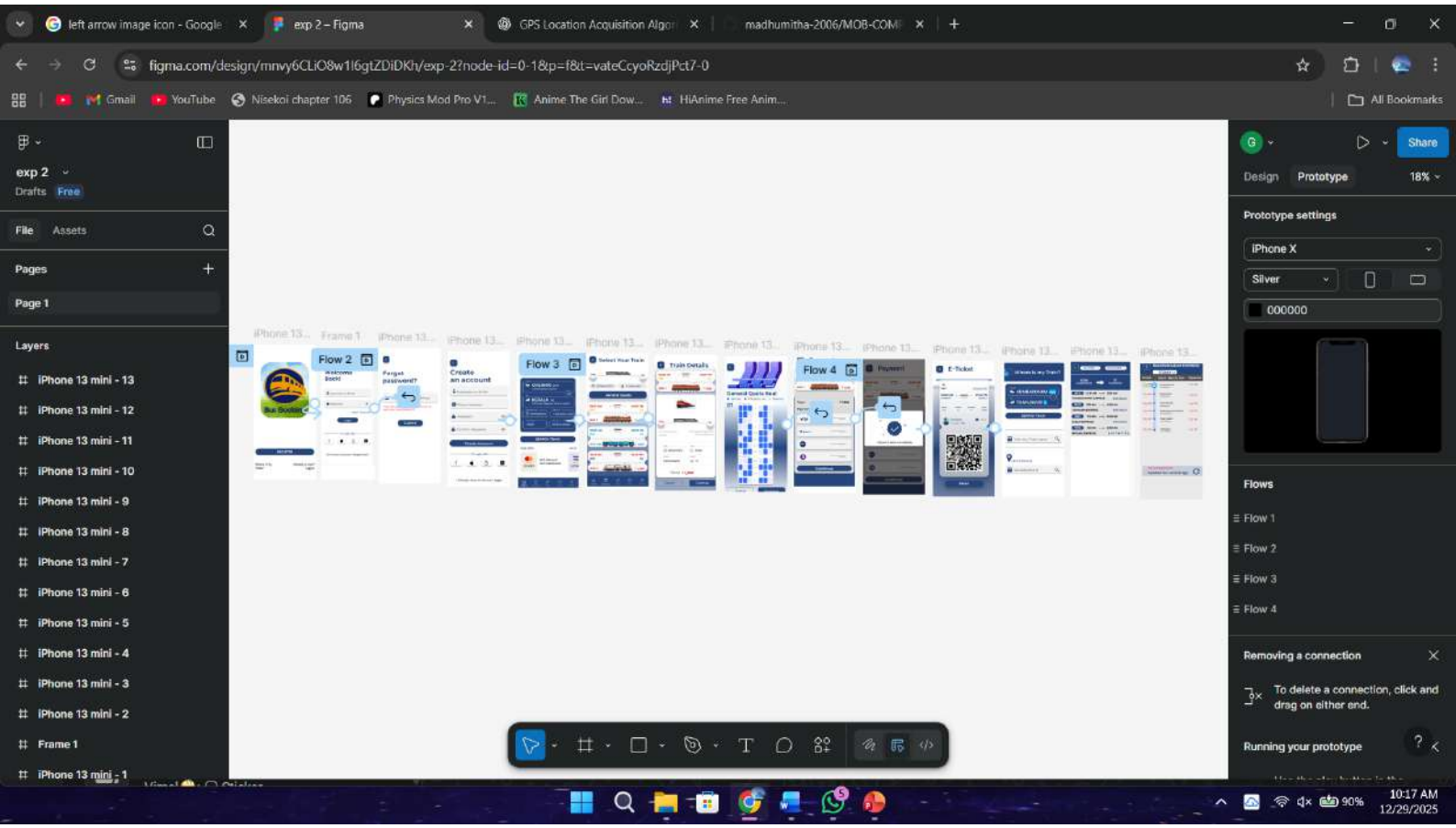
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iPhone 13 mini - 12
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iPhone 13 mini - 10
iPhone 13 mini - 9
iPhone 13 mini - 8
iPhone 13 mini - 7
iPhone 13 mini - 6
iPhone 13 mini - 5
iPhone 13 mini - 4
iPhone 13 mini - 3
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Frame 1
iPhone 13 mini - 1
Flow 2
Flow 3
Flow 4
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Prototype
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Prototype settings
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Flows
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Flow 2
Flow 3
Flow 4
Removing a connection
To delete a connection, click and drag on either end.
Running your prototype
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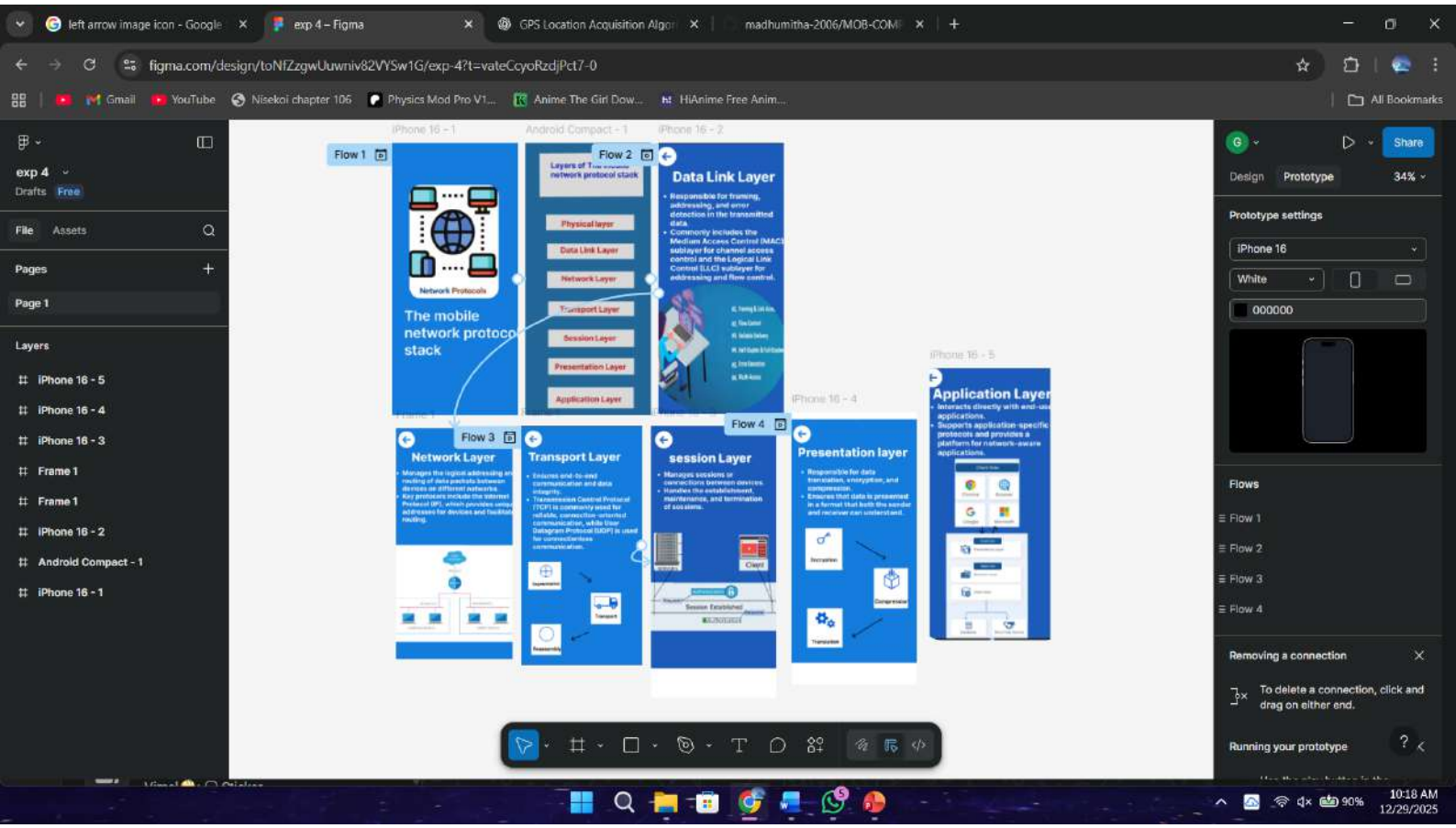
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Page 1
Layers
iPhone 16 - 5
iPhone 16 - 4
iPhone 16 - 3
Frame 1
Frame 1
iPhone 16 - 2
Android Compact - 1
iPhone 16 - 1
Flow 1
Network Protocols
The mobile network protocol stack
Flow 2
Layers of TCP/IP network protocol stack
Physical layer
Data Link Layer
Network Layer
Transport Layer
Session Layer
Presentation Layer
Application Layer
Data Link Layer
Responsible for framing, addressing, and error detection in the transmitted data.
Commonly includes the Medium Access Control (MAC) sublayer for channel access control and the Logical Link Control (LLC) sublayer for addressing and flow control.
Flow 3
Network Layer
Transport Layer
Ensures end-to-end communication and data integrity.
Flow 4
session Layer
Manages sessions or connections between devices.
Handles the establishment, maintenance, and termination of sessions.
Client
Server
Session Established
Presentation layer
Responsible for data translation, encryption, and compression.
Ensures that data is presented in a format that both the sender and receiver can understand.
Encryption
Compression
Translation
Application Layer
Interacts directly with end-user applications.
Supports application-specific protocols and provides a platform for network-aware applications.
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iPhone 16
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Flows
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Flow 3
Flow 4
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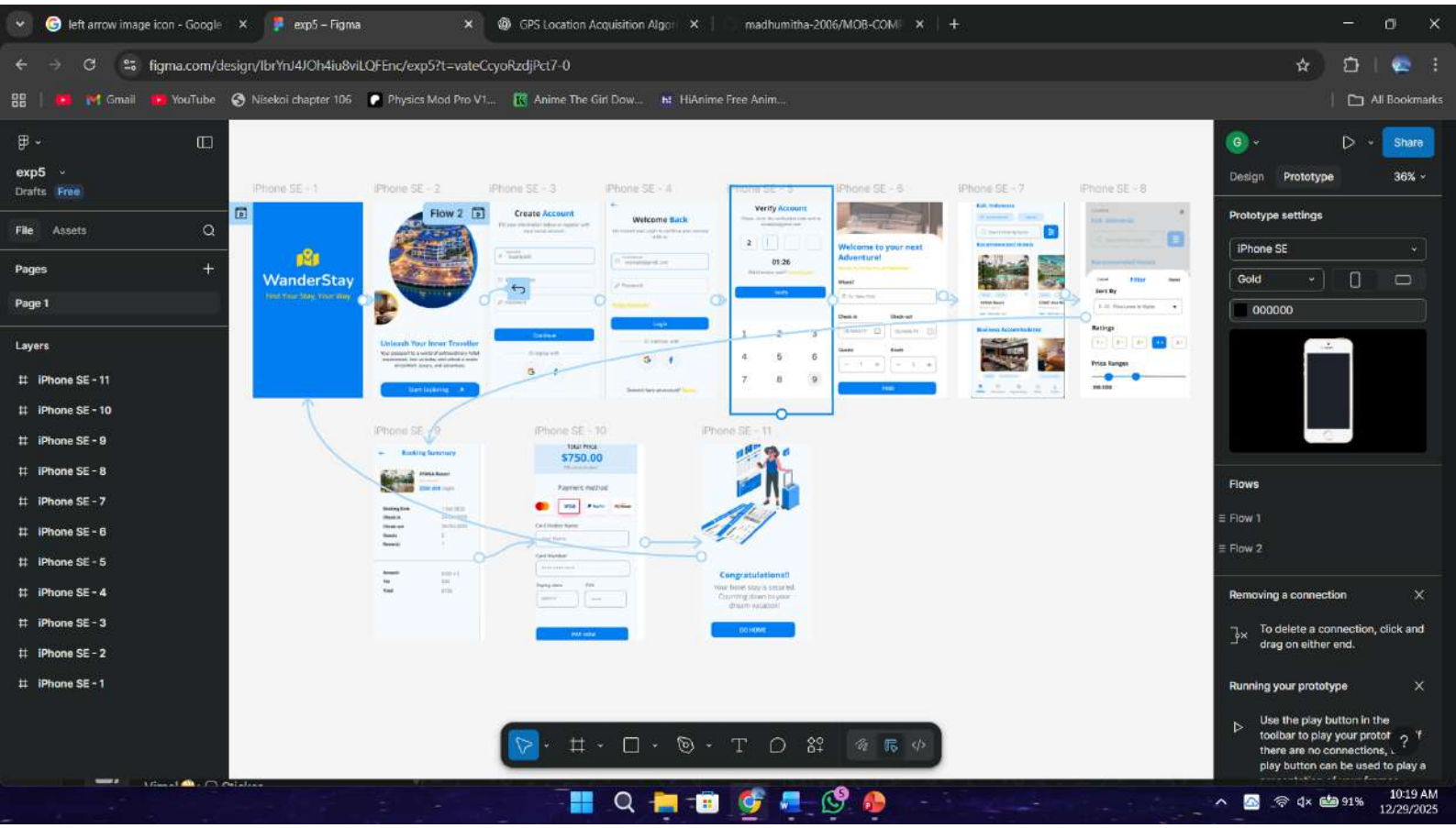
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Flows
Flow 1
Flow 2
Removing a connection
To delete a connection, click and drag on either end.
Running your prototype
Use the play button in the toolbar to play your prototype. If there are no connections, the play button can be used to play a
WanderStay
Flow 2
Create Account
Welcome Back
Verify Account
Welcome to your next Adventure!
Congratulations!!
$750.00
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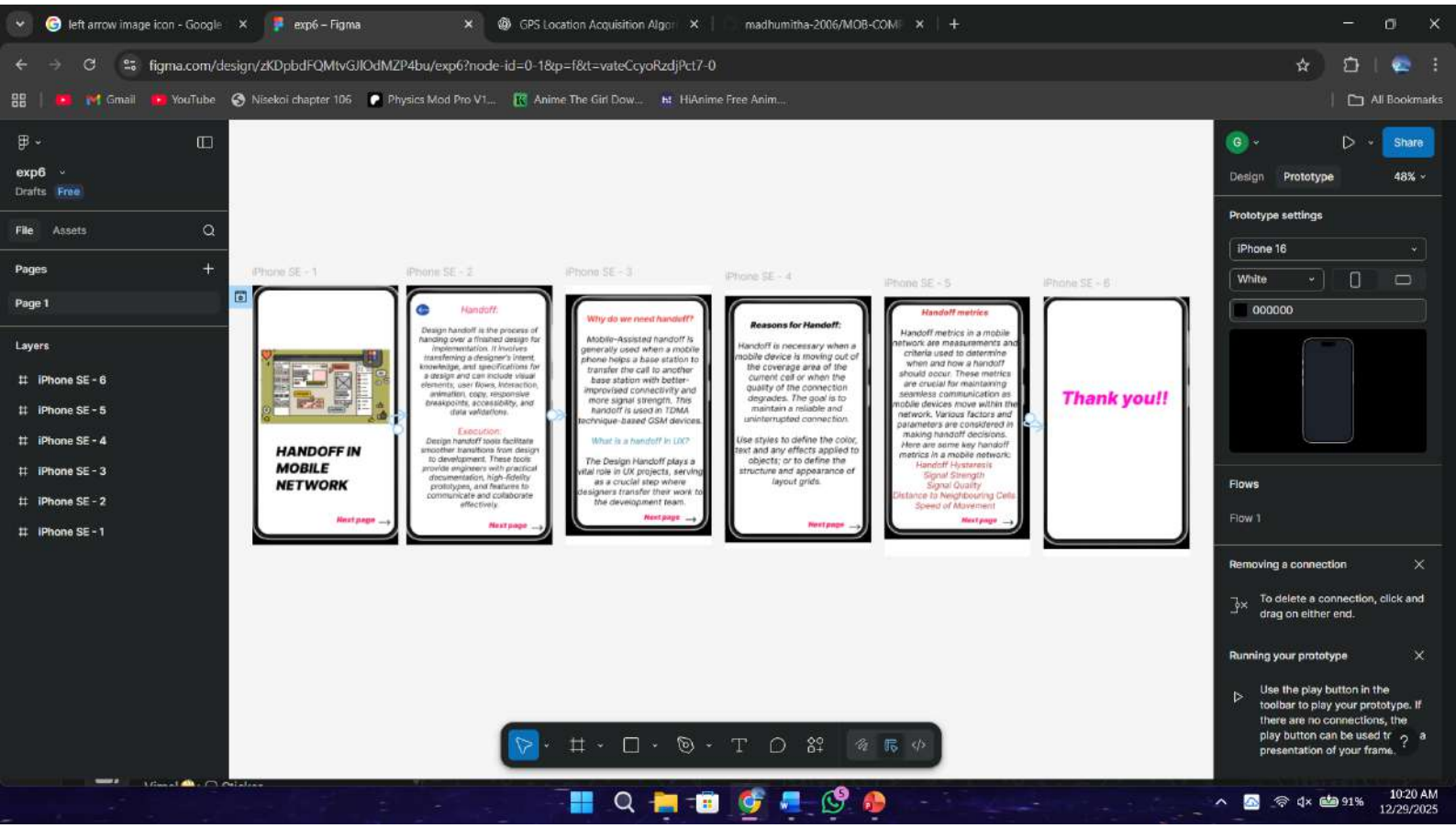
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Share
Design
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Prototype settings
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Flows
Flow 1
Removing a connection
To delete a connection, click and drag on either end.
Running your prototype
Use the play button in the toolbar to play your prototype. If there are no connections, the play button can be used to present a presentation of your frame.
iPhone SE - 1
HANDOFF IN MOBILE NETWORK
Next page
iPhone SE - 2
Handoff:
Design handoff is the process of handing over a finished design for implementation. It involves transferring a designer's intent, knowledge, and specifications for a design and can include visual elements, user flows, interaction, animation, copy, responsive breakpoints, accessibility, and data validations.
Execution:
Design handoff tools facilitate smoother transitions from design to development. These tools provide engineers with practical documentation, high-fidelity prototypes, and features to communicate and collaborate effectively.
Next page
iPhone SE - 3
Why do we need handoff?
Mobile-Assisted handoff is generally used when a mobile phone helps a base station to transfer the call to another base station with better-improvised connectivity and more signal strength. This handoff is used in TDMA technique-based GSM devices.
What is a handoff in UX?
The Design Handoff plays a vital role in UX projects, serving as a crucial step where designers transfer their work to the development team.
Next page
iPhone SE - 4
Reasons for Handoff:
Handoff is necessary when a mobile device is moving out of the coverage area of the current cell or when the quality of the connection degrades. The goal is to maintain a reliable and uninterrupted connection.
Use styles to define the color, text and any effects applied to objects; or to define the structure and appearance of layout grids.
Next page
iPhone SE - 5
Handoff metrics
Handoff metrics in a mobile network are measurements and criteria used to determine when and how a handoff should occur. These metrics are crucial for maintaining seamless communication as mobile devices move within the network. Various factors and parameters are considered in making handoff decisions. Here are some key handoff metrics in a mobile network:
Handoff Hysteresis
Signal Strength
Signal Quality
Distance to Neighbouring Cells
Speed of Movement
Next page
iPhone SE - 6
Thank you!!
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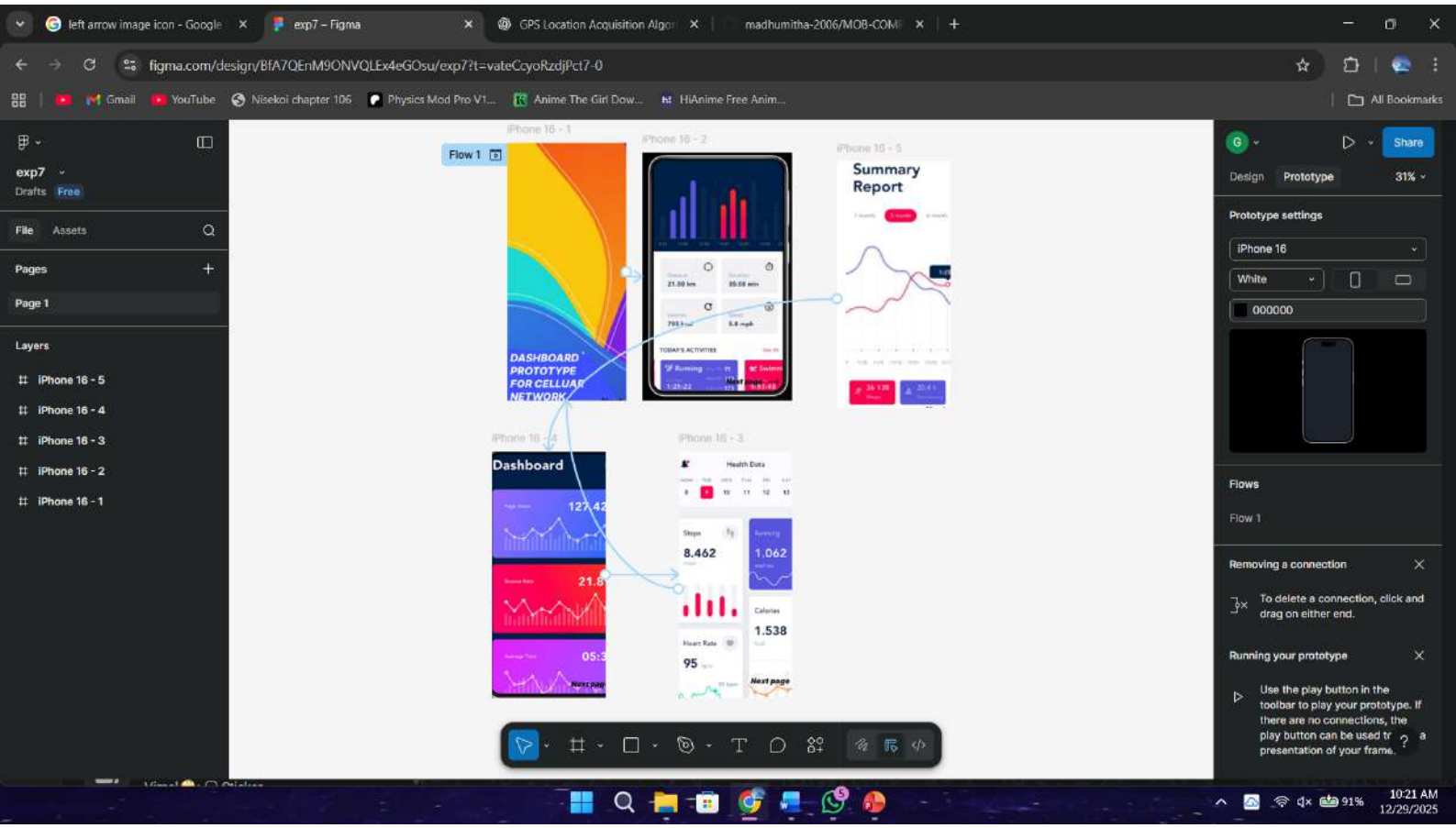
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iPhone 16 - 3
iPhone 16 - 2
iPhone 16 - 1
Flow 1
DASHBOARD PROTOTYPE FOR CELLULAR NETWORK
Summary Report
Dashboard
Health Data
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1.538
95
Next page
Share
Design
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Prototype settings
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Flows
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Running your prototype
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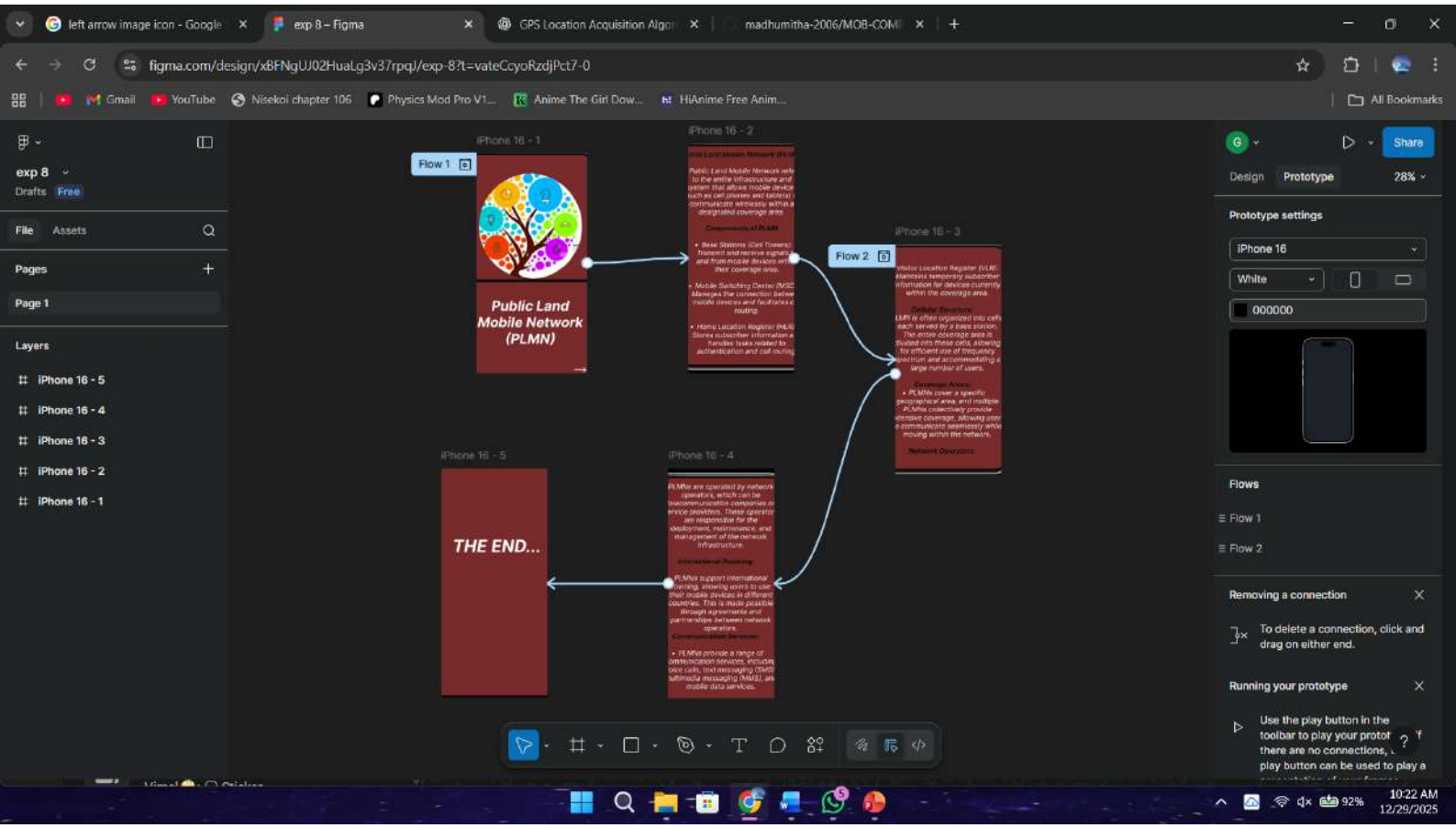
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iPhone 16 - 4
iPhone 16 - 3
iPhone 16 - 2
iPhone 16 - 1
iPhone 16 - 1
Flow 1
Public Land Mobile Network (PLMN)
iPhone 16 - 2
iPhone 16 - 3
Flow 2
iPhone 16 - 5
THE END...
iPhone 16 - 4
Share
Design
Prototype
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Prototype settings
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Flows
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Flow 2
Removing a connection
To delete a connection, click and drag on either end.
Running your prototype
Use the play button in the toolbar to play your prototype. If there are no connections, the play button can be used to play a
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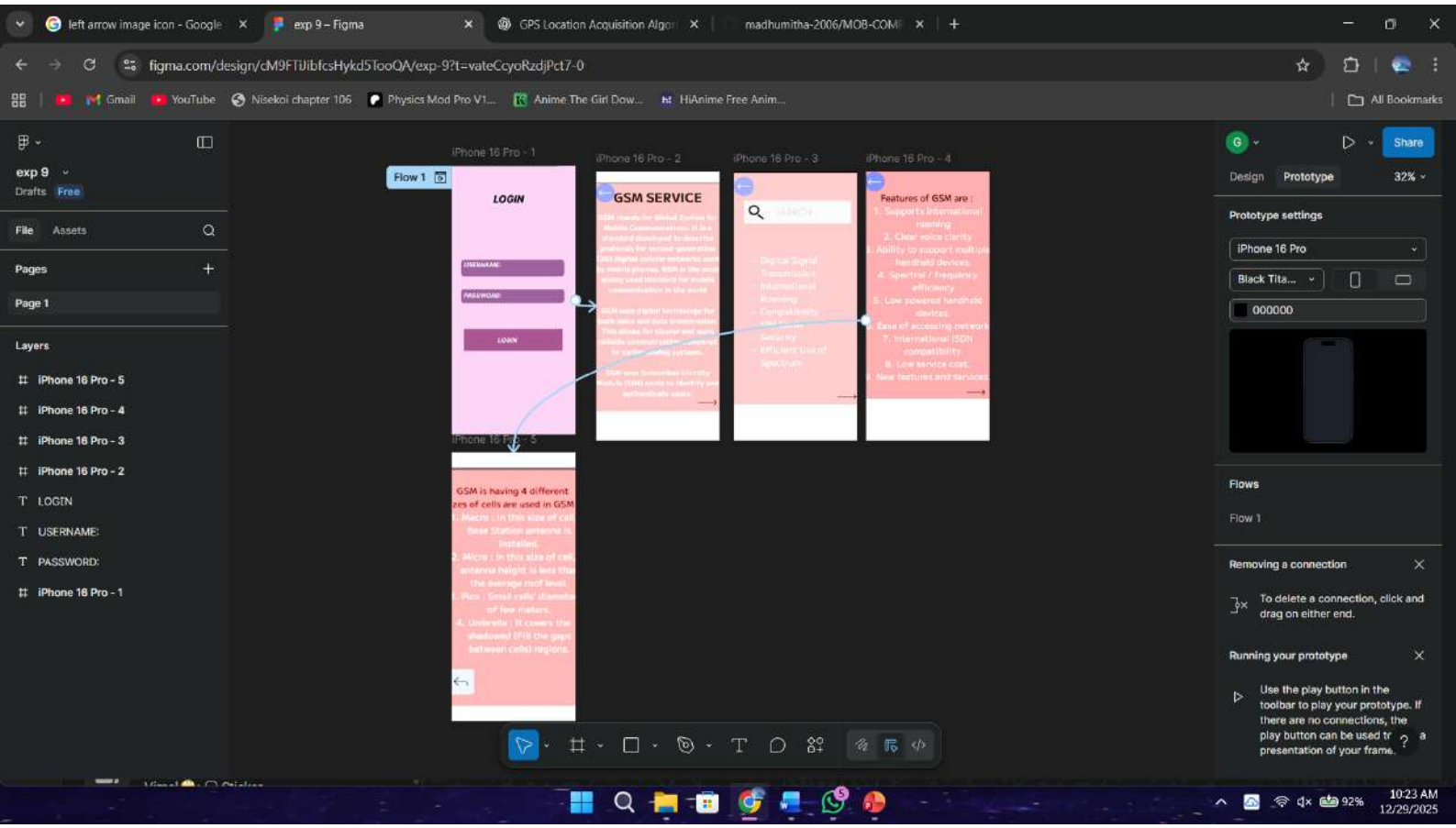
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HiAnime Free Anim...
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Layers
iPhone 16 Pro - 5
iPhone 16 Pro - 4
iPhone 16 Pro - 3
iPhone 16 Pro - 2
LOGIN
USERNAME:
PASSWORD:
iPhone 16 Pro - 1
Flow 1
iPhone 16 Pro - 1
iPhone 16 Pro - 2
iPhone 16 Pro - 3
iPhone 16 Pro - 4
LOGIN
USERNAME
PASSWORD
LOGIN
GSM SERVICE
Features of GSM are :
1. Supports International roaming
2. Clear voice clarity
3. Ability to support multiple handheld devices.
4. Spectral / frequency efficiency
5. Low powered handheld devices.
6. Ease of accessing network
7. International ISDN compatibility
8. Low service cost.
9. New features and services
GSM is having 4 different zes of cells are used in GSM
1. Macro : In this size of cell Base Station antenna is installed.
2. Micro : In this size of cell antenna height is less than the average roof level.
3. Pico : Small cells' diameter of few meters.
4. Umbrella : It covers the shadowed (Fill the gaps between cells) regions.
Share
Design
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Flows
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Removing a connection
To delete a connection, click and drag on either end.
Running your prototype
Use the play button in the toolbar to play your prototype. If there are no connections, the play button can be used tr a presentation of your frame.
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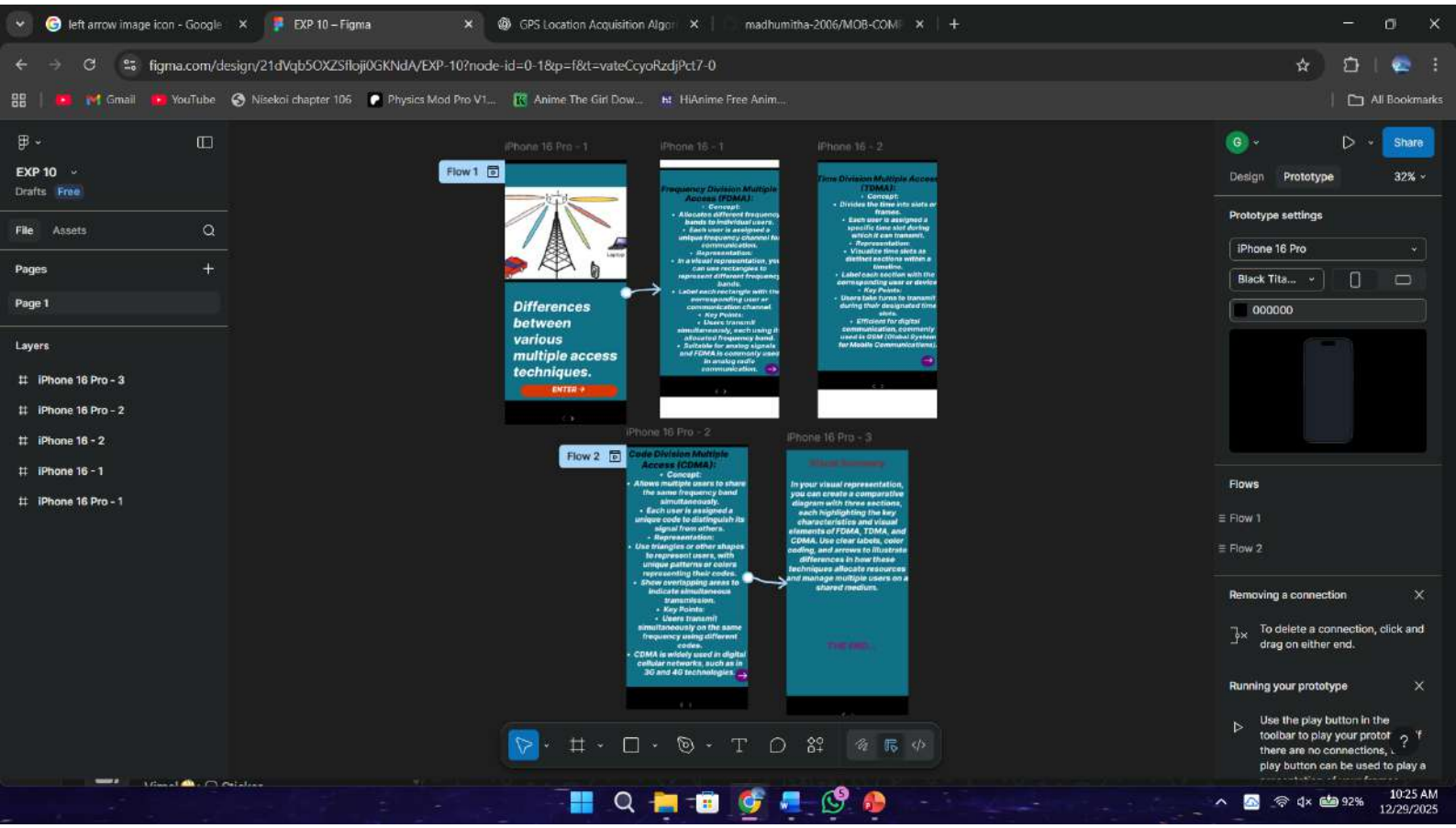
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iPhone 16 Pro - 2
iPhone 16 - 2
iPhone 16 - 1
iPhone 16 Pro - 1
Flow 1
Differences between various multiple access techniques.
ENTER
Flow 2
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Flow 2
Removing a connection
To delete a connection, click and drag on either end.
Running your prototype
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