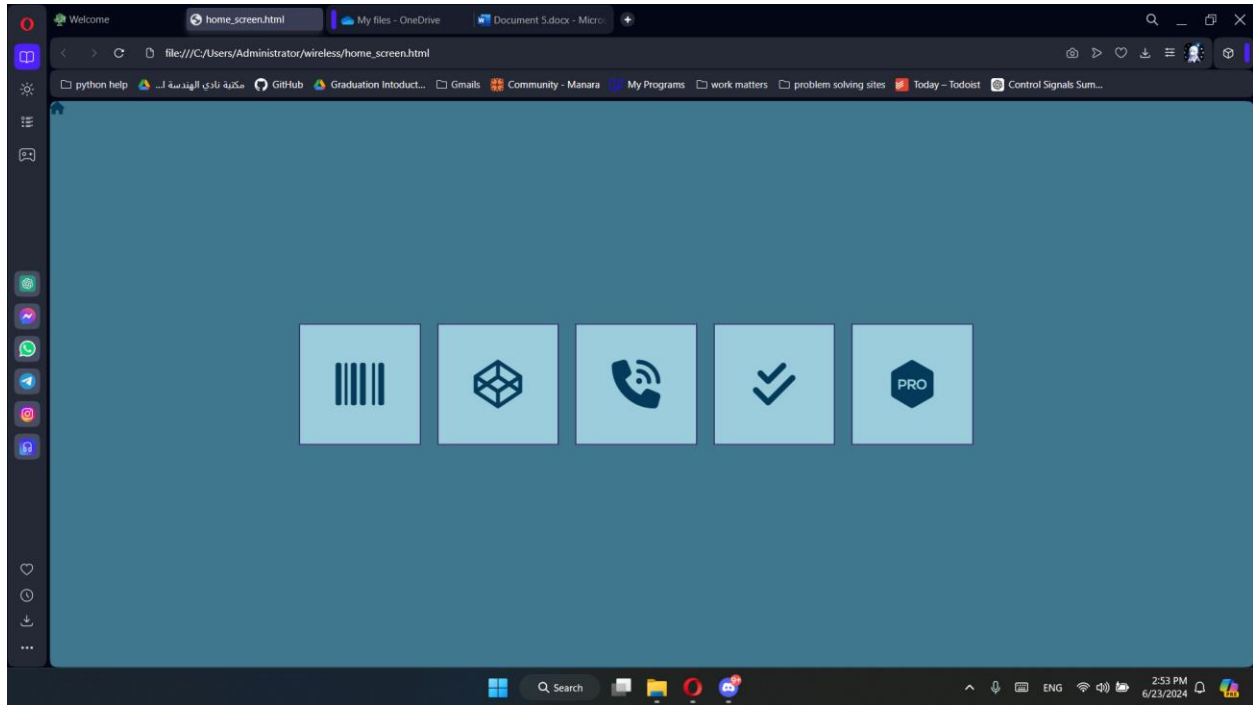


Done by: Amal AbuHmoud 1192141

Meral 1200527

Main UI



1- Wireless system calculator

The image displays two screenshots of a web-based 'Wireless Systems Calculator'. The interface is dark-themed with light blue input fields and buttons. The top screenshot shows the input fields for Bandwidth of Sampler (BW), Number of Bits per Quantizer, Compression Rate of Source Encoder (Rs), Channel Encoder Rate (Rc), and Number of Interleaver Bits. The bottom screenshot shows the same input fields with the 'Calculate' button pressed, resulting in a 'Calculation Results' section displaying the following values:

Parameter	Value
Sampling Frequency	8000
Number of Quantization Levels	256
Bit Rate at the Output of the Source Encoder	16000
Bit Rate at the Output of the Channel Encoder	32000
Bit Rate at the Output of the Interleaver	32000

2- OFDM calculator

OFDM System Calculator

Resource Block Bandwidth:
180000

Subcarrier Spacing:
15000

OFDM Symbols per Resource Block:
7

Symbol Duration:
0.0005

QAM Modulation:
1024

Parallel Resource Blocks:
4

Calculate Home

OFDM System Calculator

15000

OFDM Symbols per Resource Block:
7

Symbol Duration:
0.0005

QAM Modulation:
1024

Parallel Resource Blocks:
4

Calculate Home

Calculation Results

Bits per Resource Element: 10
Bits per OFDM Symbol: 120.00
Bits per OFDM Resource Block: 840.00
Maximum Transmission using Parallel Resource Elements: 6720000.00

3- power transmission calculator

Power Transmission Calculator

Path loss (dB):
140

Frequency:
900000000

Transmitter antenna gain (dB):
8

Receiver antenna gain (dB):
0

Data Rate (bps):
9600

Antenna feed line loss (dB):
12

Other losses (dB):
20

Fade margin (dB):

Fade margin (dB):
8

Receiver amplifier gain (dB):
24

Transmitter amplifier gain (dB):
37680000000

Noise figure (dB):
6

Noise temperature (dB):
290

Link margin (dB):
8

Eb/No (dB):
16

Calculate Home

Power Transmission Calculator

Transmitter amplifier gain (dB): 37680000000

Noise figure (dB): 6

Noise temperature (dB): 290

Link margin (dB): 8

Eb/No (dB): 16

Calculate Home

Calculation Results

Power received: 131.2227123303957 dB

Power transmitted: -37679999852 dB

- 4- Throughput calculator for slotted/unslotted persistent/nonpersistent CSMA, the test case for unslotted nonpersistent CSMA.

Throughput Calculator

Select Technique: Unslotted Nonpersistent CSMA

Transmission Bandwidth: 20 M (mega)

Propagation Time: 40 μ (micro)

Frame Size: 10 k (kilo)

Frame Rate: 5 k (kilo)

Calculate Home

Throughput Calculator

file:///C:/Users/Administrator/wireless/q4.html

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Select Technique:
Unslotted Nonpersistent CSMA

Transmission Bandwidth:
20
M (mega)

Propagation Time:
40
μ (micro)

Frame Size:
10
k (kilo)

Frame Rate:
5
k (kilo)

Calculate Home

Calculation Results

Throughput for unslotted-nonpersistent: 70.0161%

3:38 PM 6/23/2024

5- Cellular system designer

cellDesign.html

file:///C:/Users/Administrator/wireless/cellDesign.html

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Cellular System Designer

Time slots per carrier:
8

Area of the city in km squared:
4

Number of subscribers:
80000

Subscribers average number of calls per day (call/day):
8

Average duration per call (min/call):
3

Probability of call being dropped (GOS):
0.02

SIR in dB:
13

Fade margin in dB:

4:04 PM 6/23/2024

