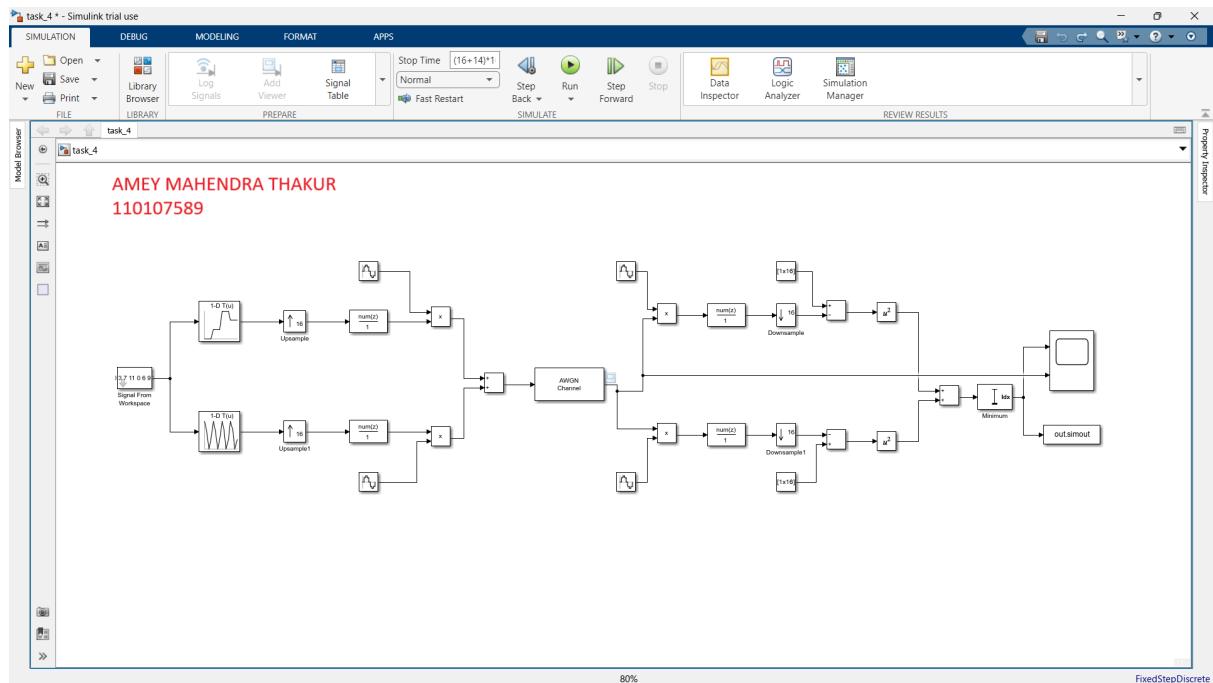


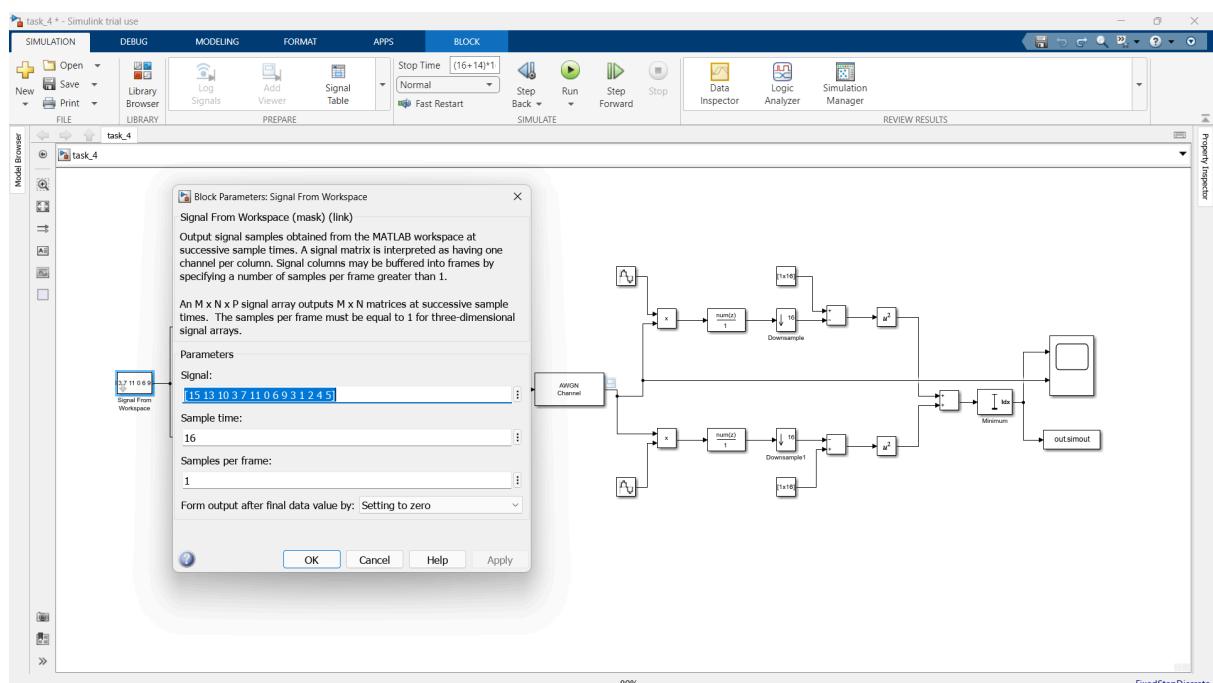
Task 4: Quadrature Amplitude Modulation (QAM)

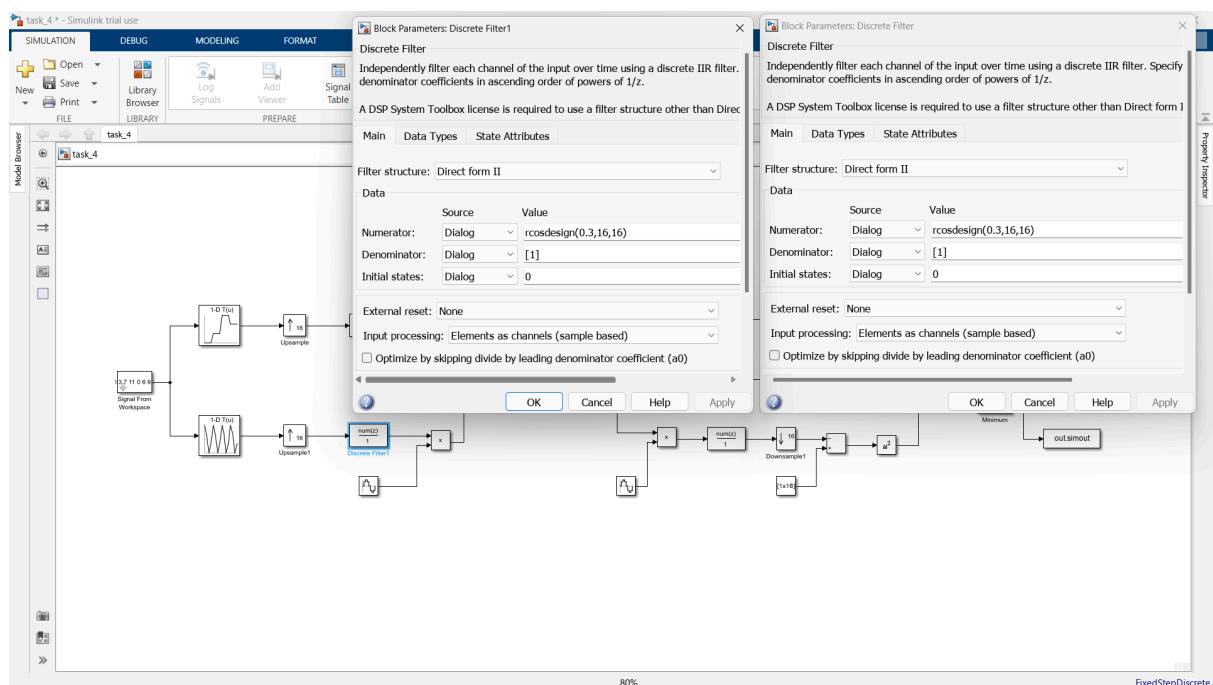
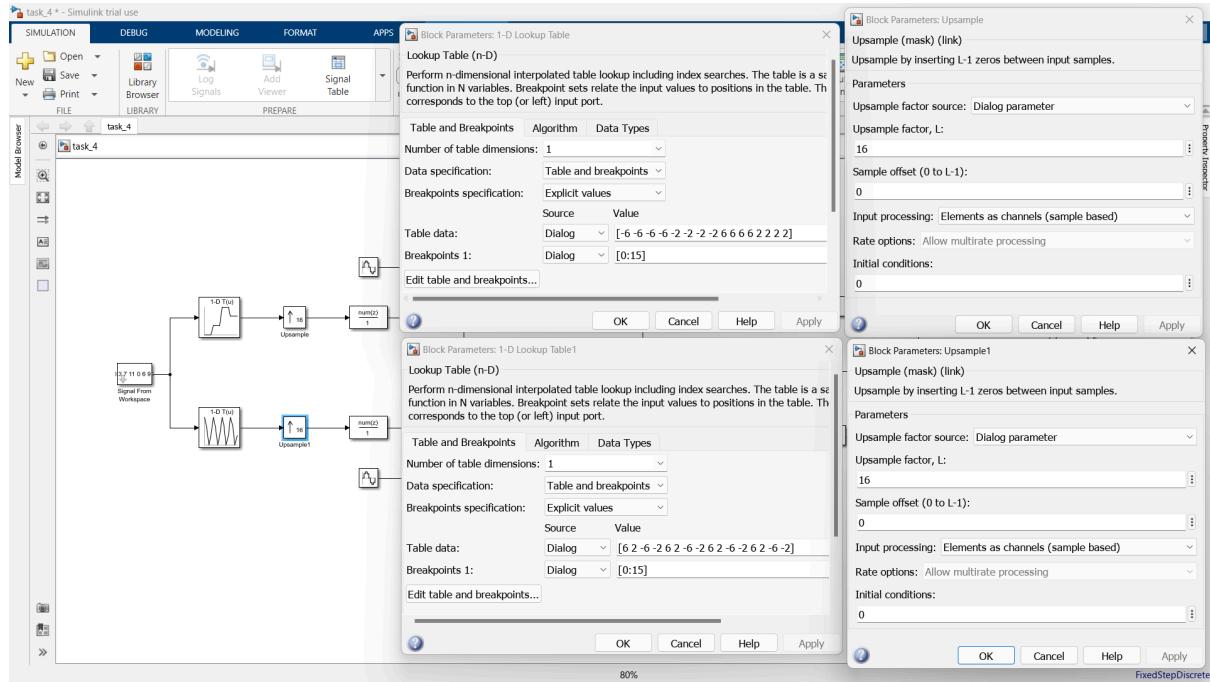
QAM system design & Subtask 1

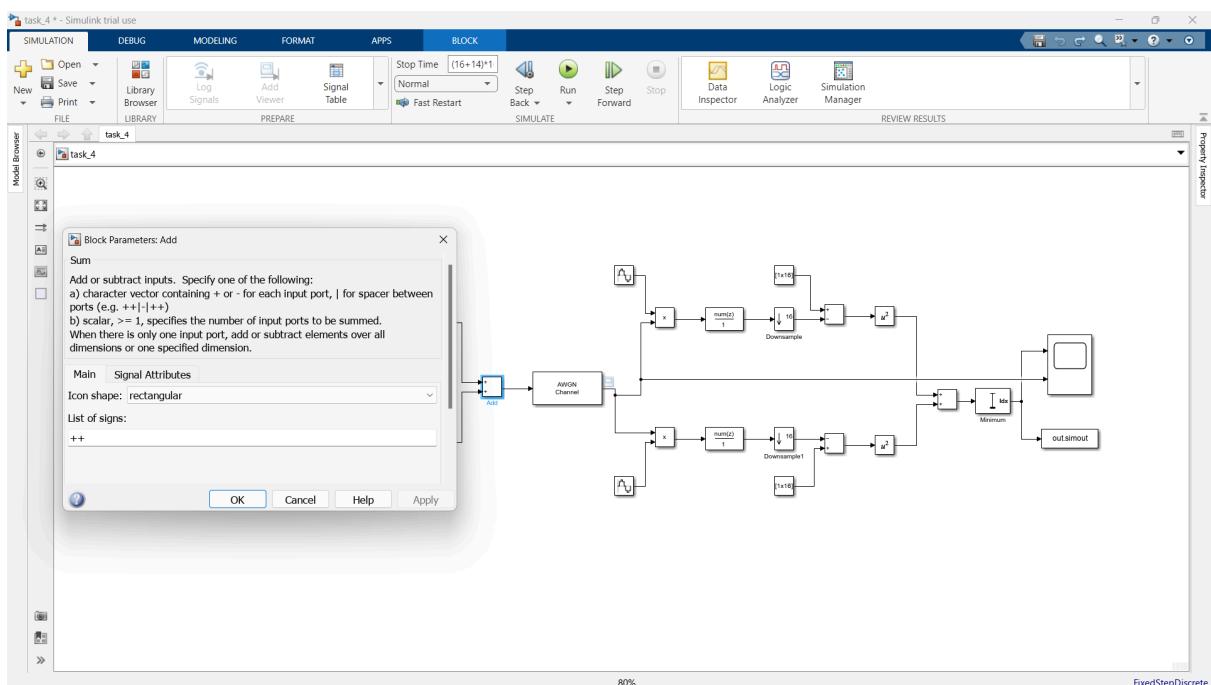
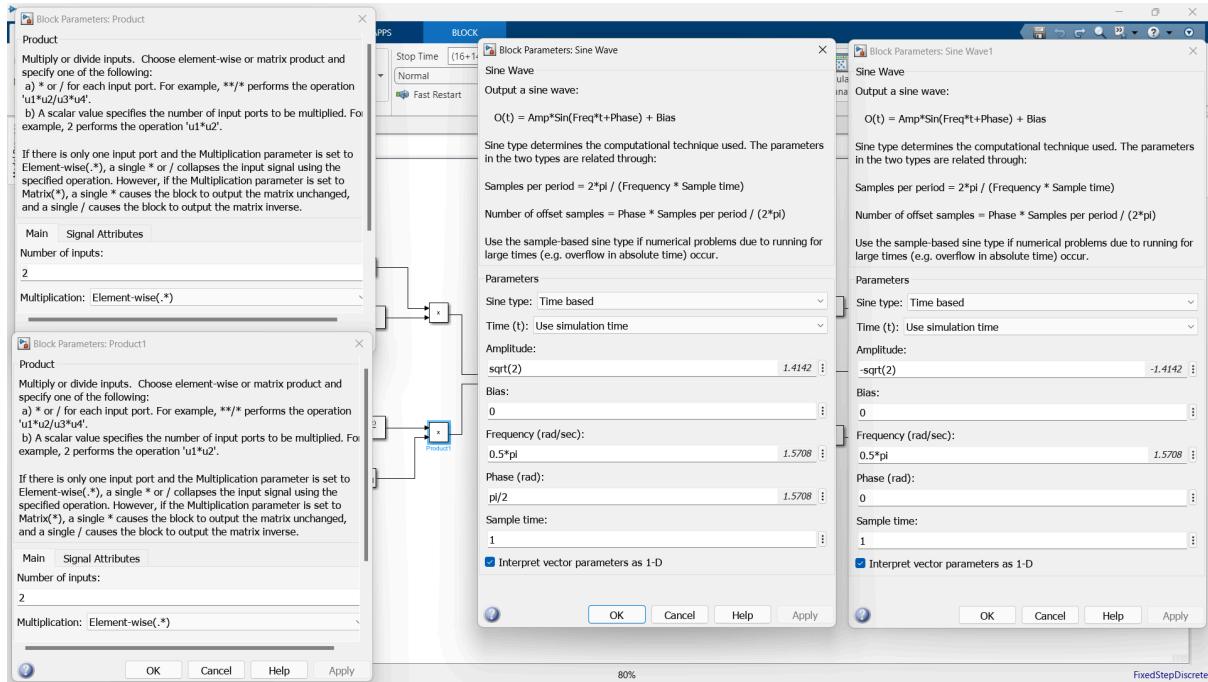
QAM system design



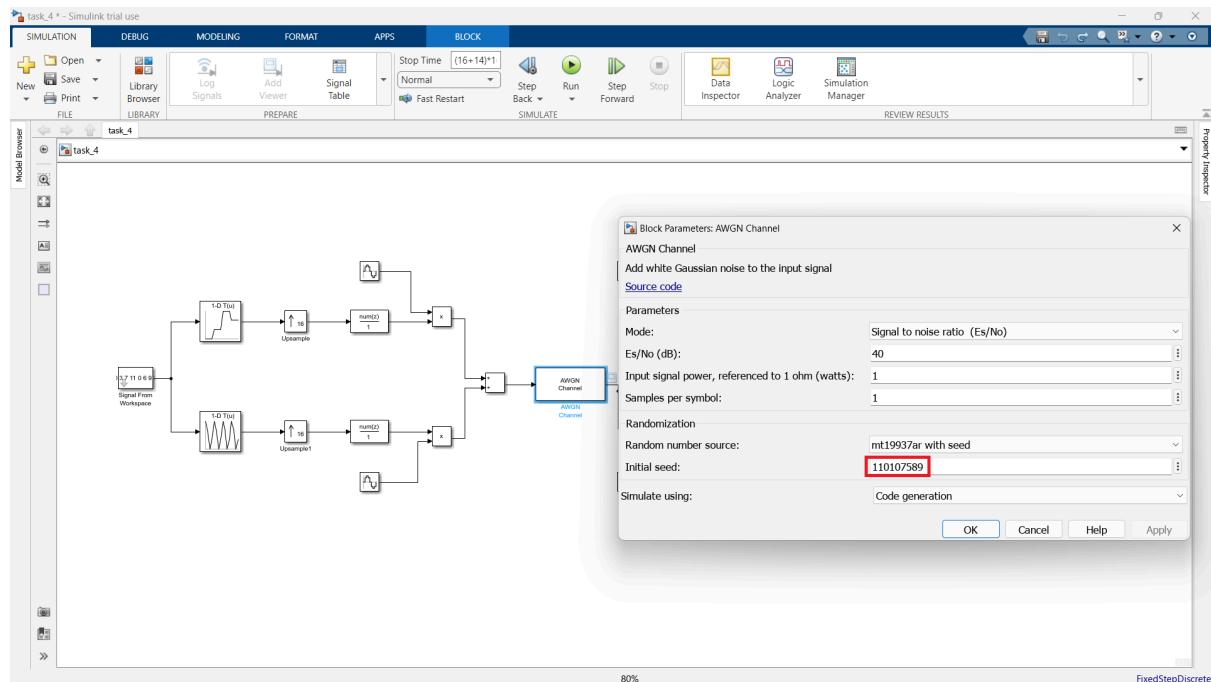
Modulator:



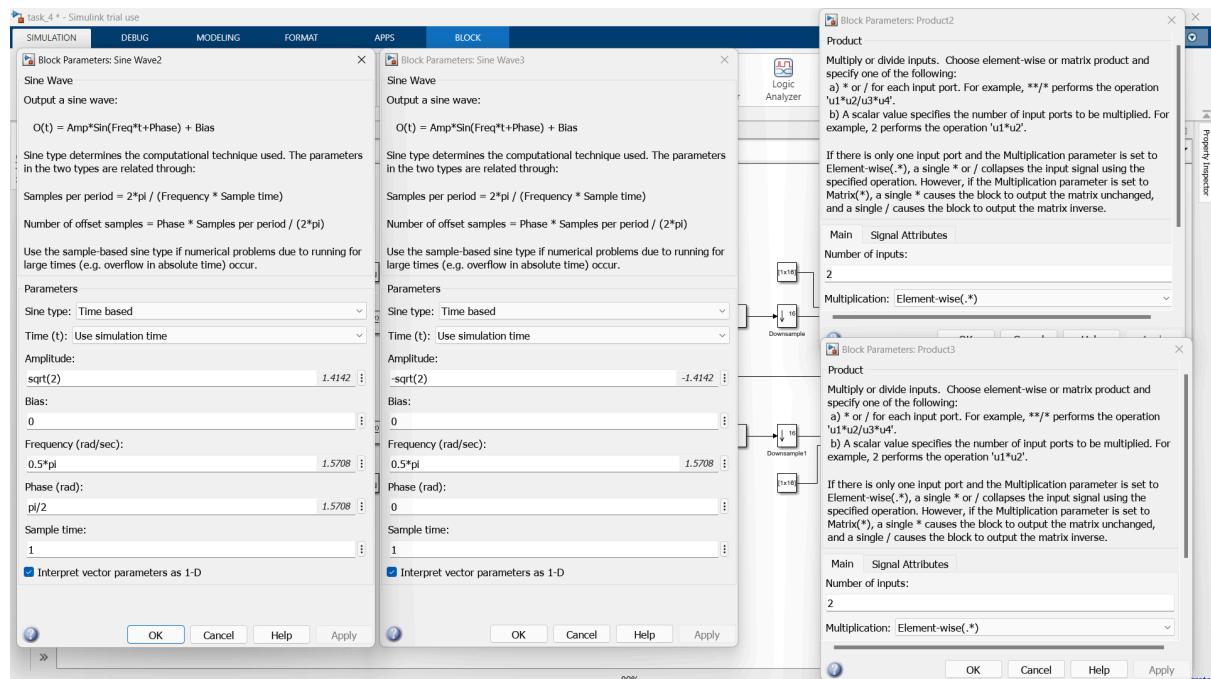


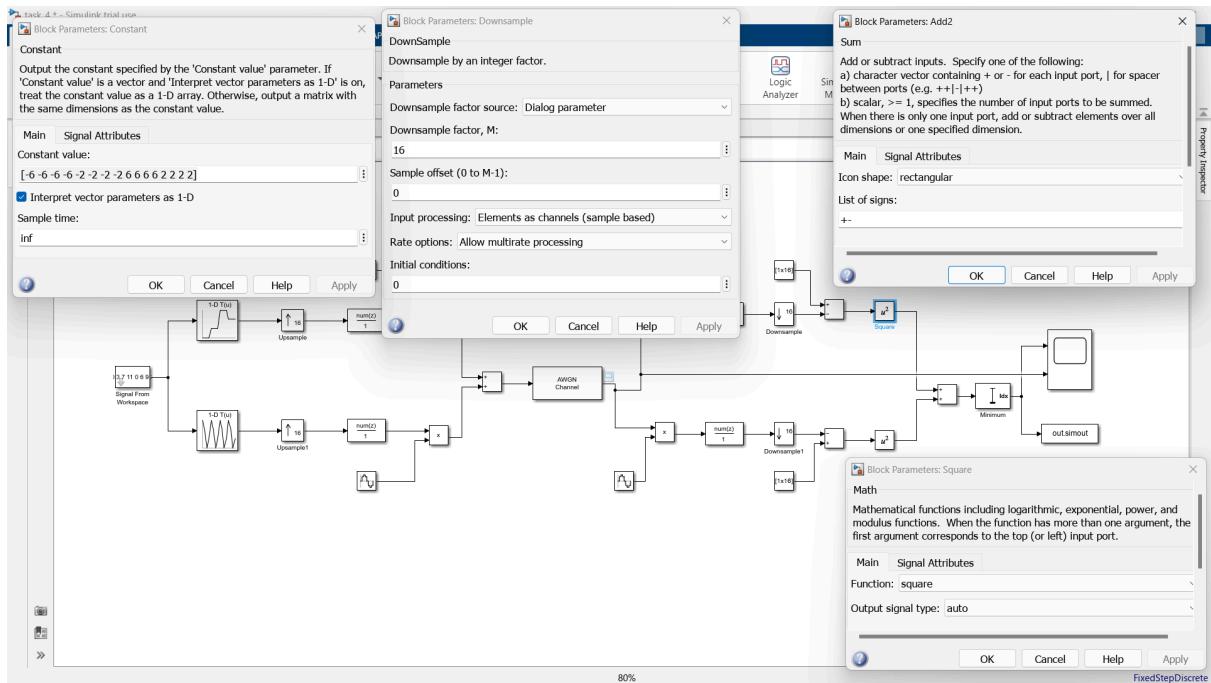
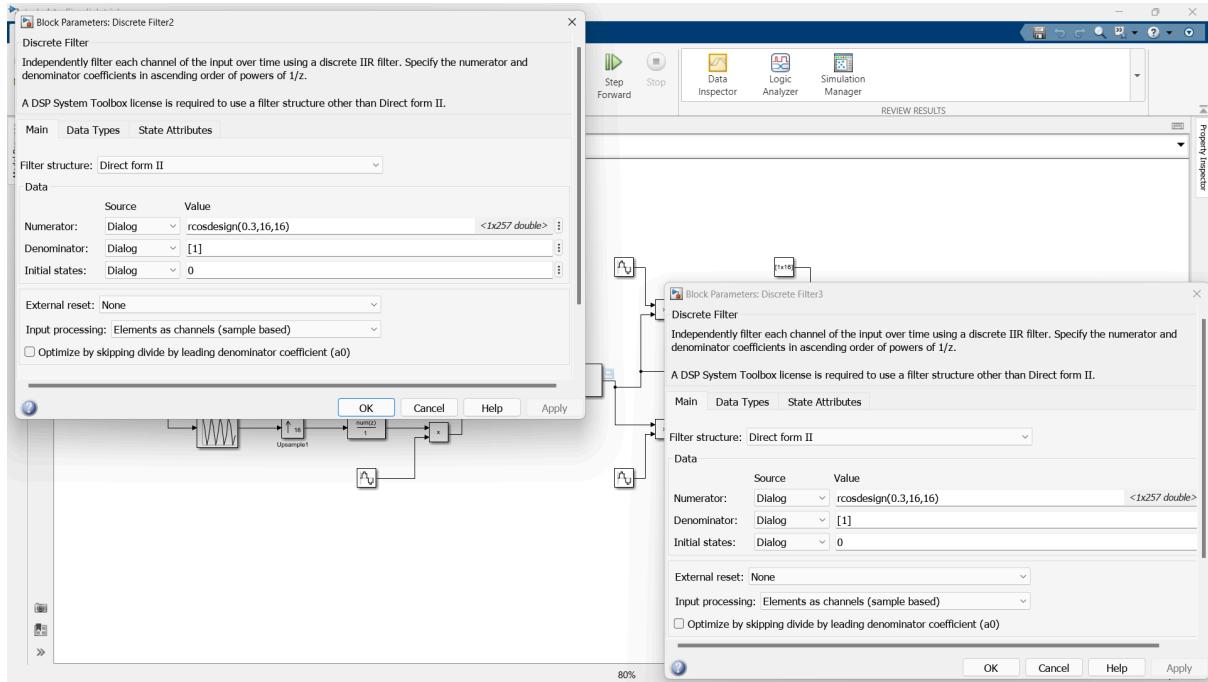


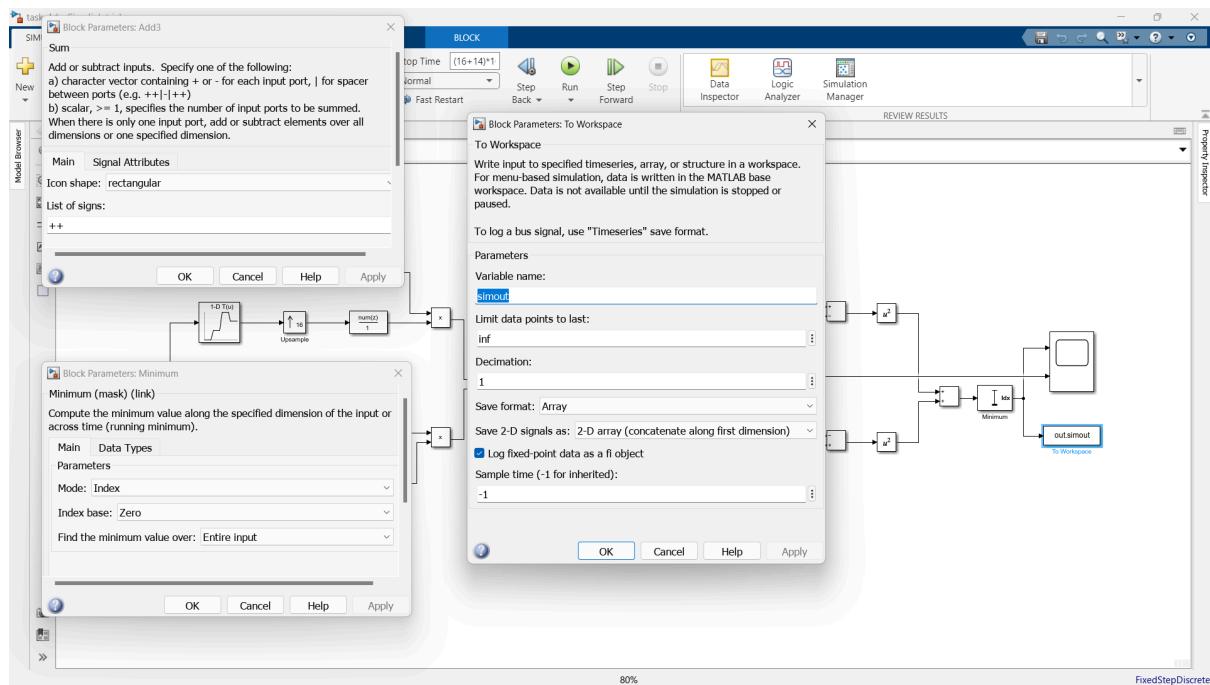
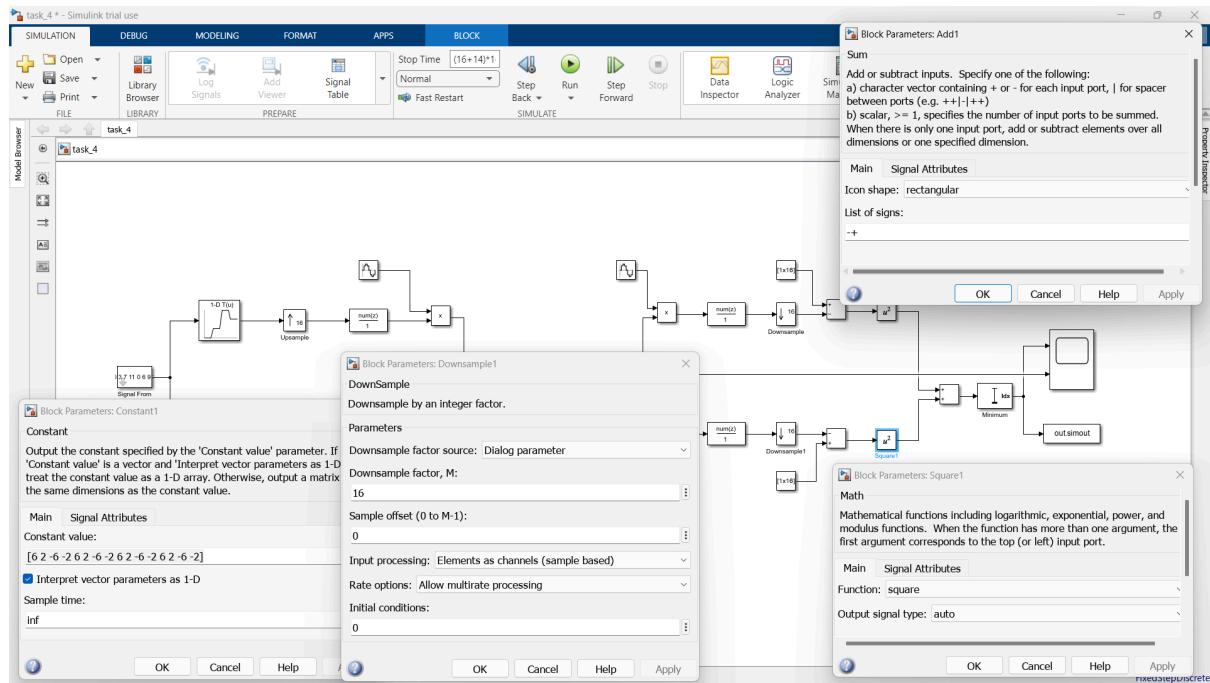
AWGN Channel:



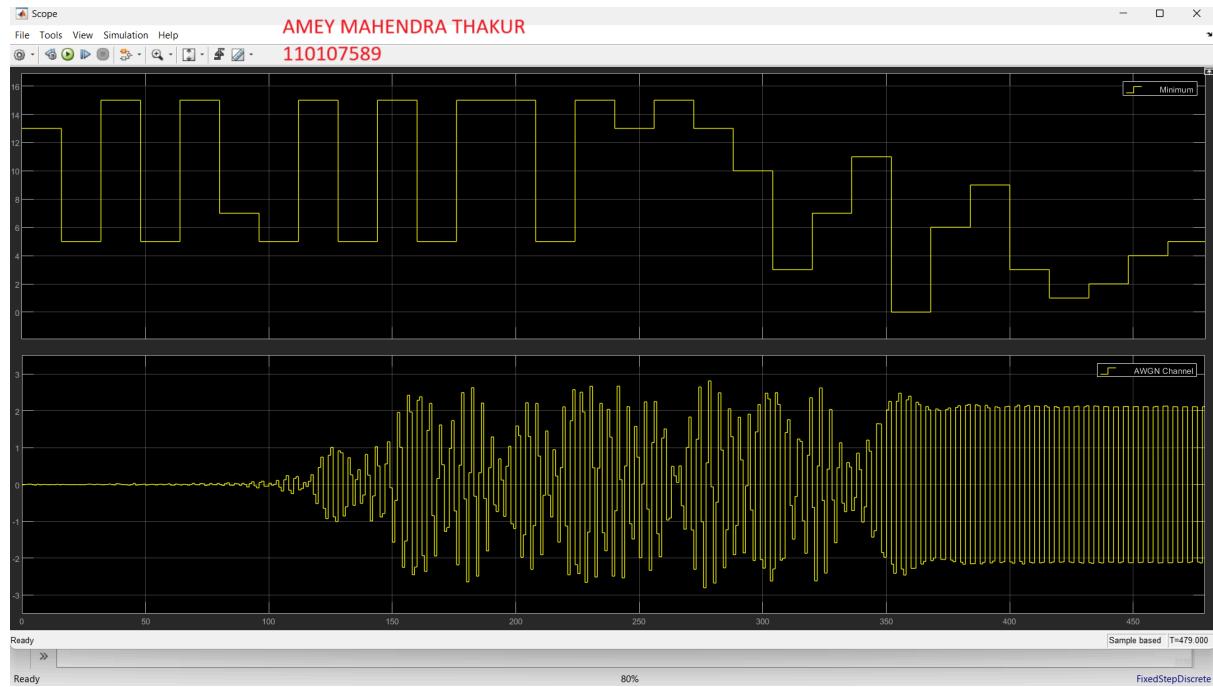
Demodulator:







Scope and workspace output:

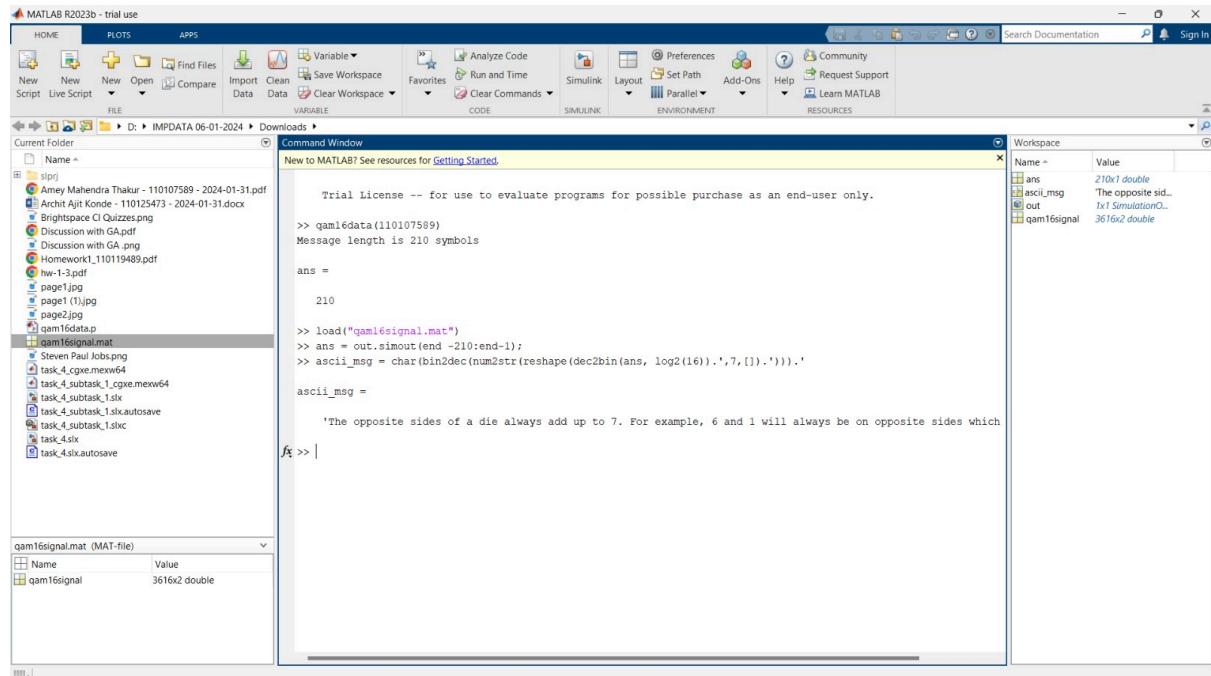


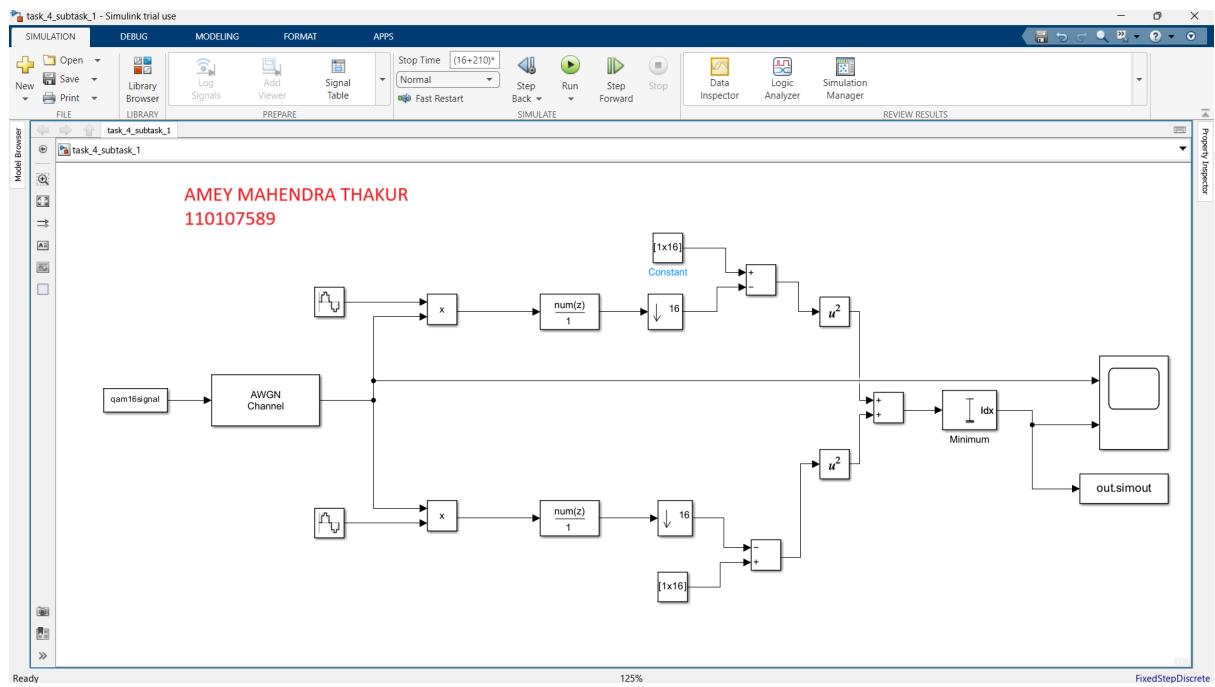
subtask 1

Locate qam16data file in matlab directory.

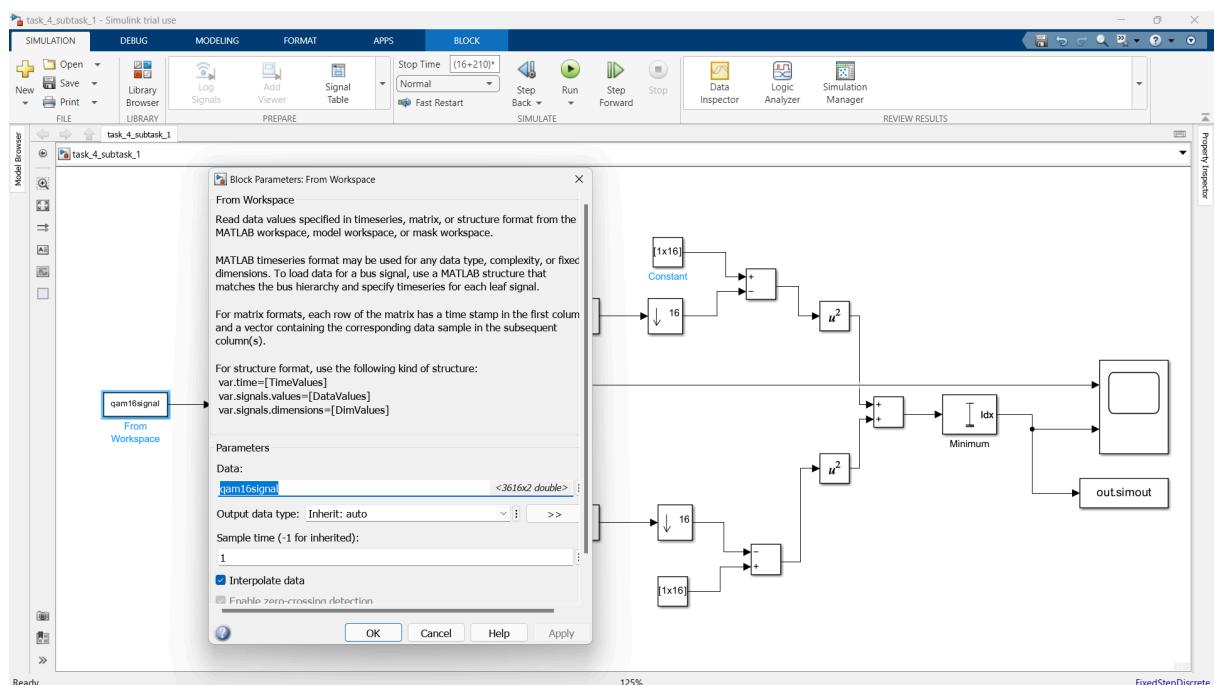
As K value is 210, the stop time is set at $(12+K)*8-1$

i.e. $(12+210)*8-1$

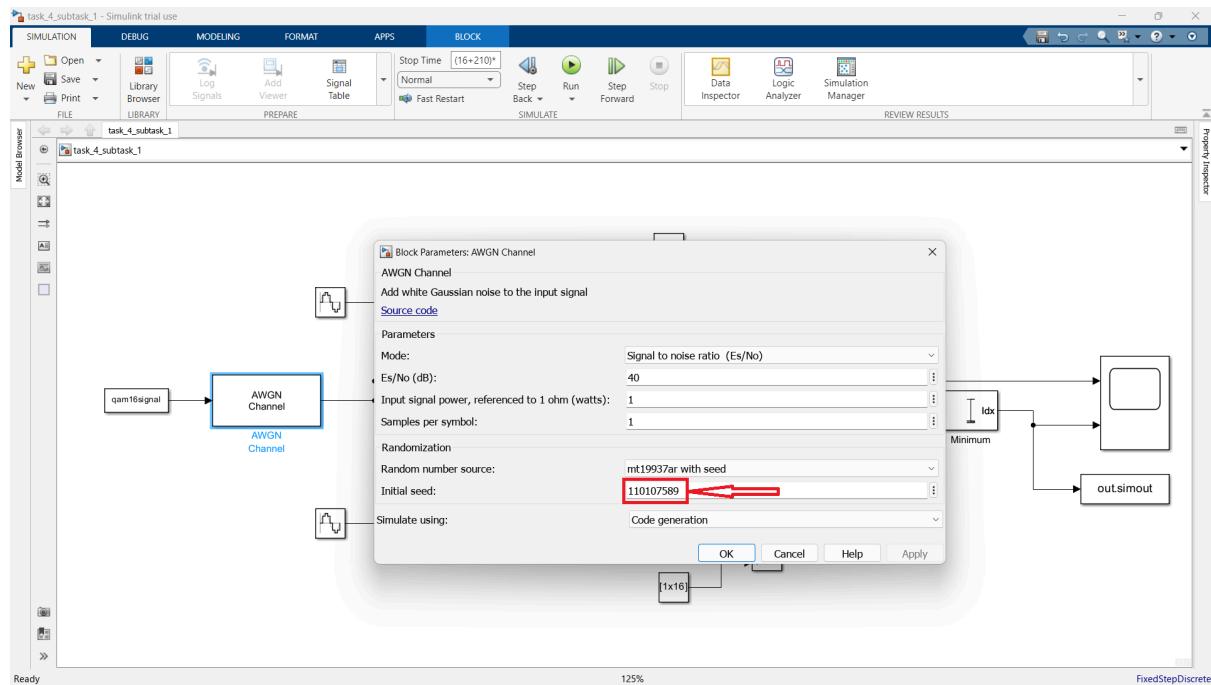




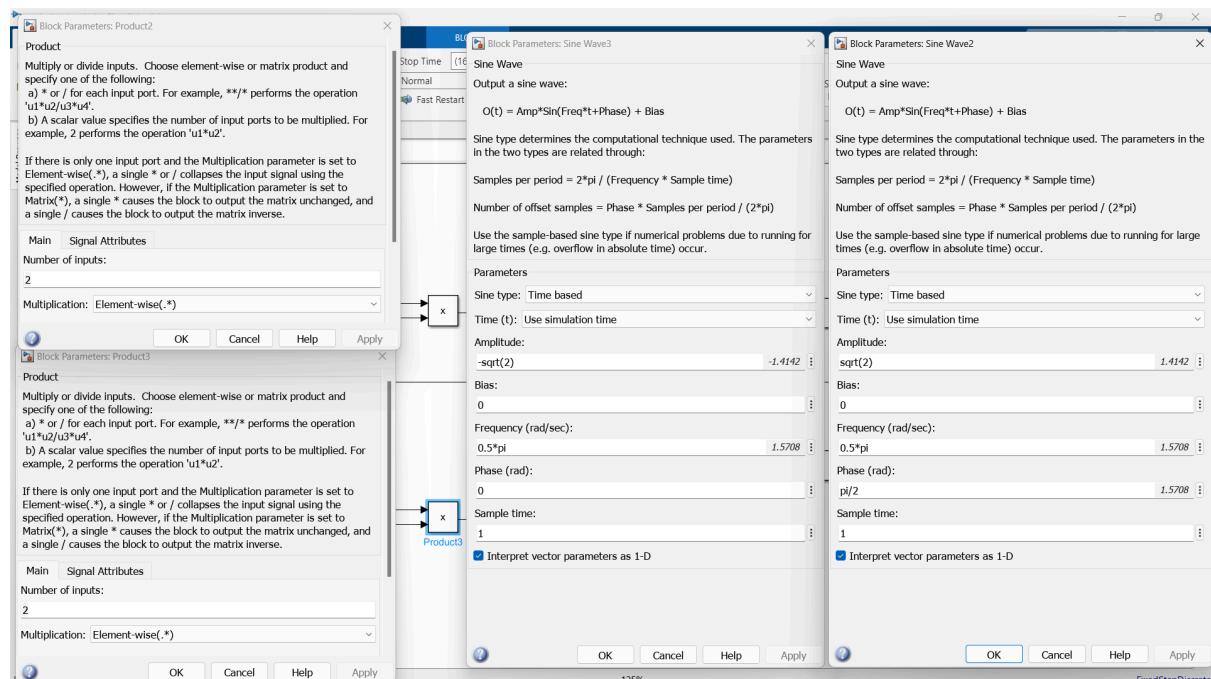
Modulator

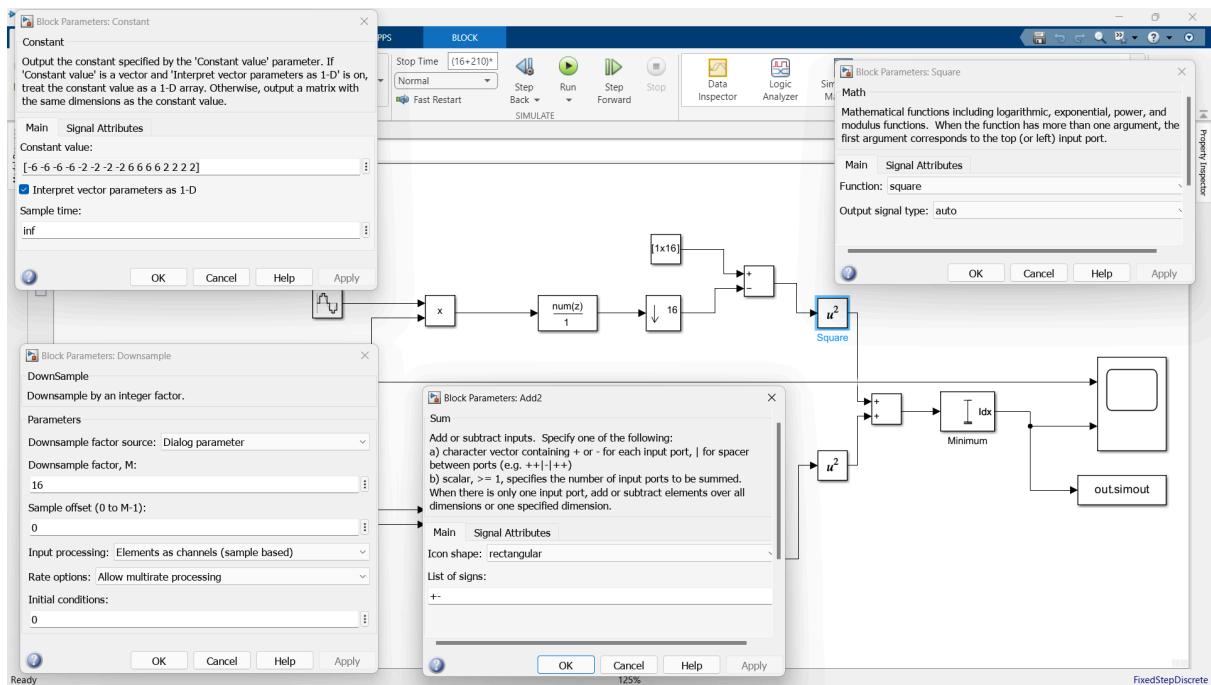
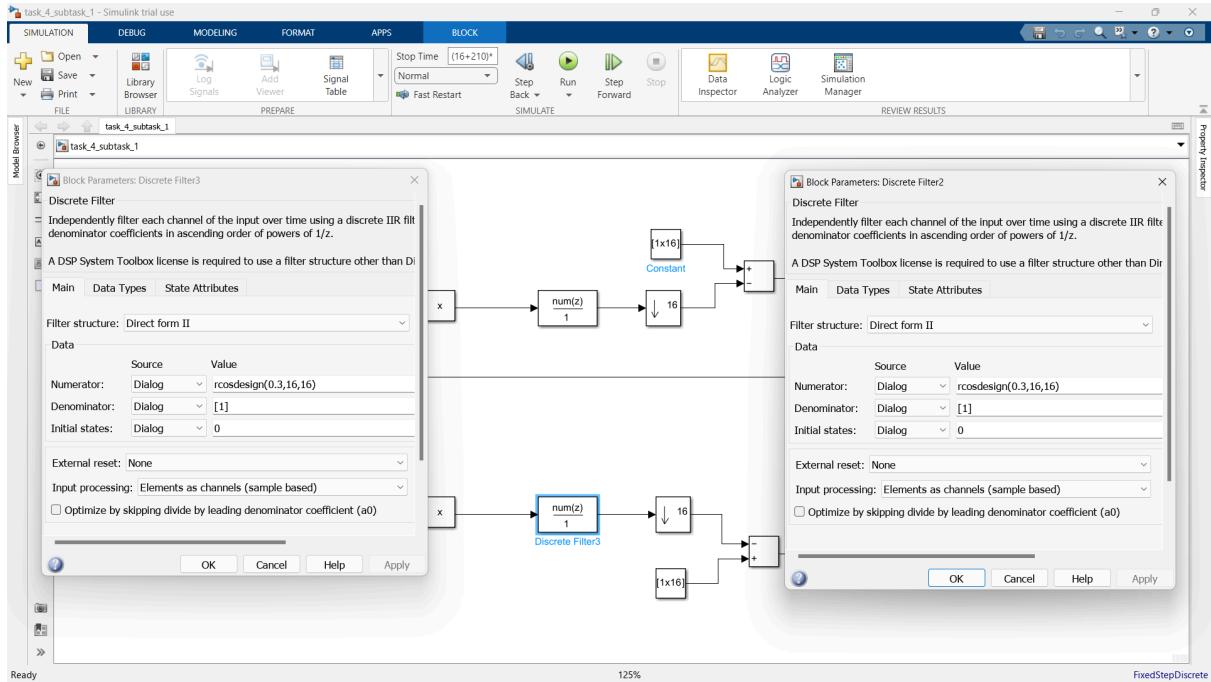


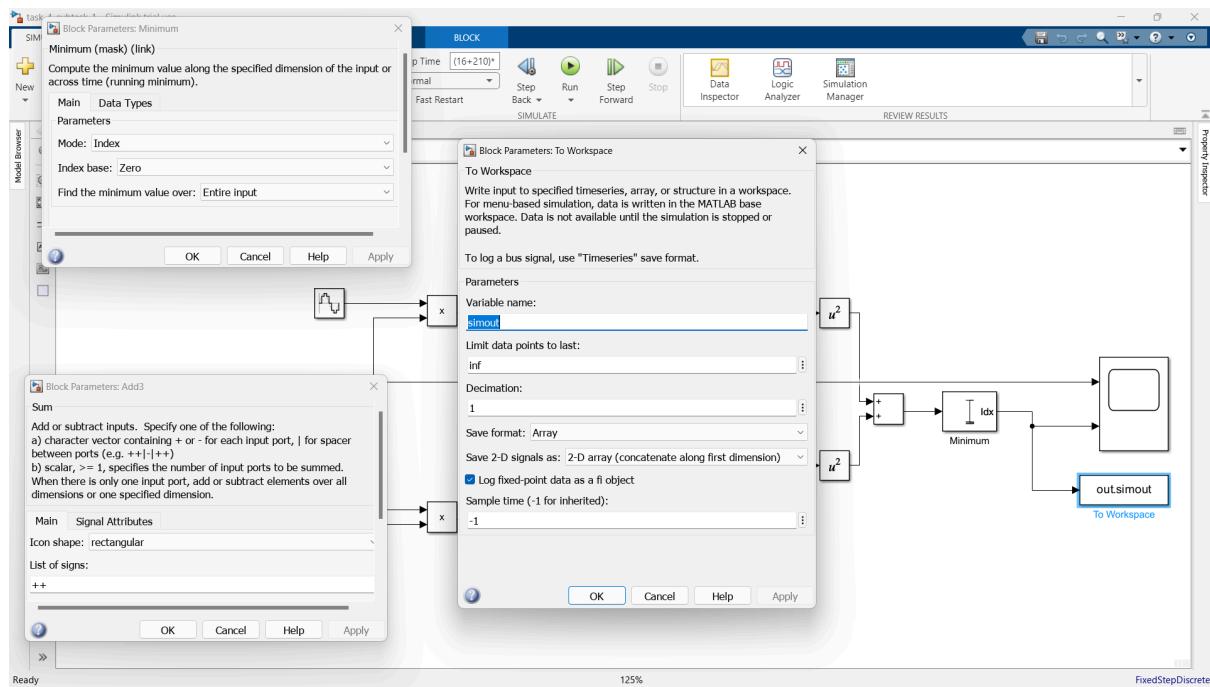
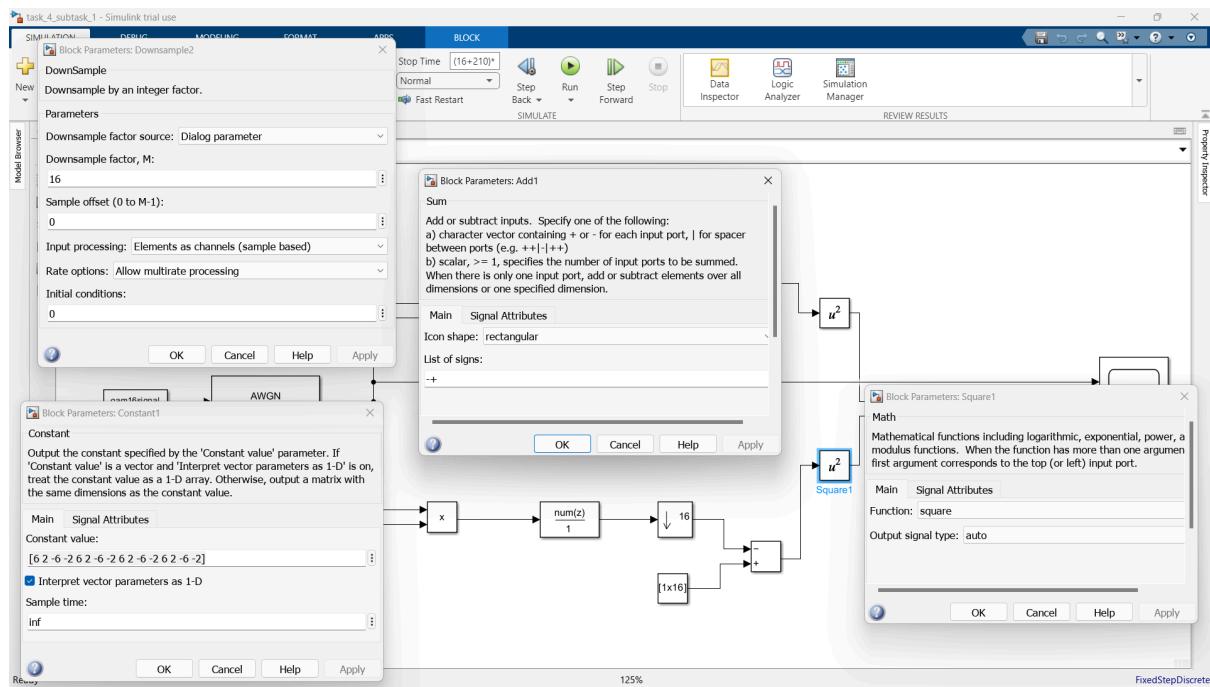
AWGN Channel:



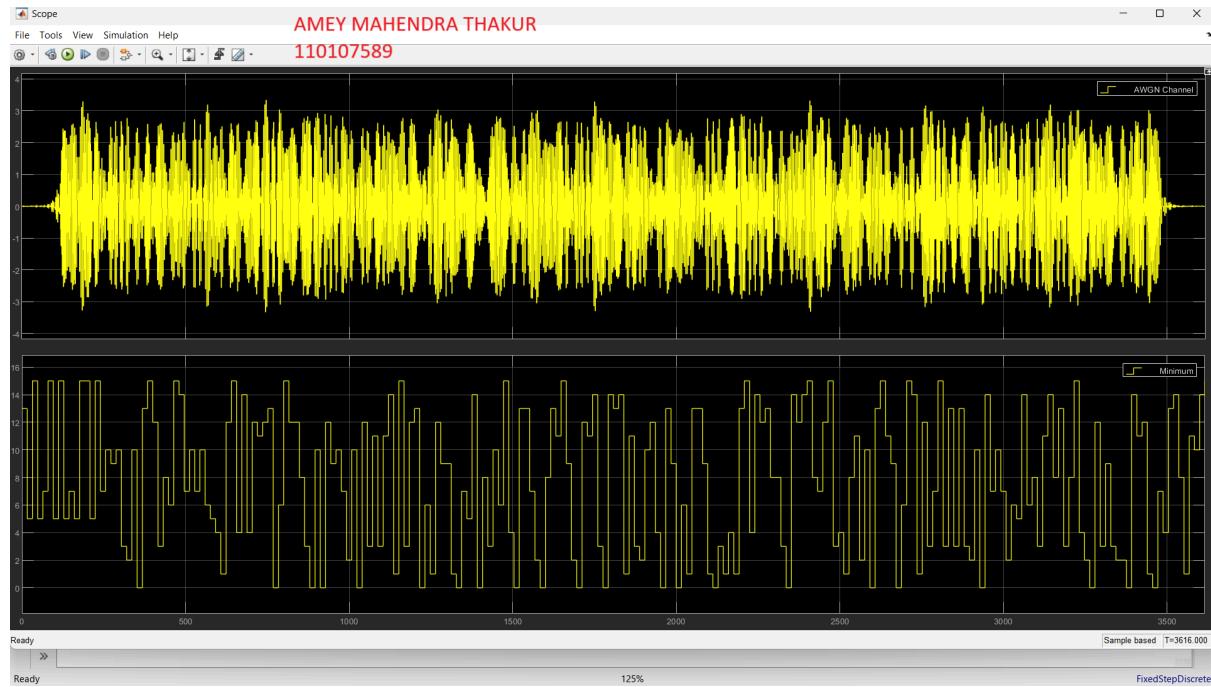
Demodulator







Scope and workspace output:



ASCII message output:

The size of the message variable is 222×1 but as instructed only the last K bits are to be considered for further processing. So fetch the last 210 bits and assign it to a variable to further process and the Converting the ASCII text message using the instructed formula.

My secret message is "*The opposite sides of a die always add up to 7. For example, 6 and 1 will always be on opposite sides which add up to 7.*"

Secret message:

