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| ***Lab Report***  ***IA 3203 – Digital Signal Processing***  *Department of Instrumentation and Automation Technology*  *University of Colombo* |
| **DSP 303 – Linear Time Invariant Systems** |

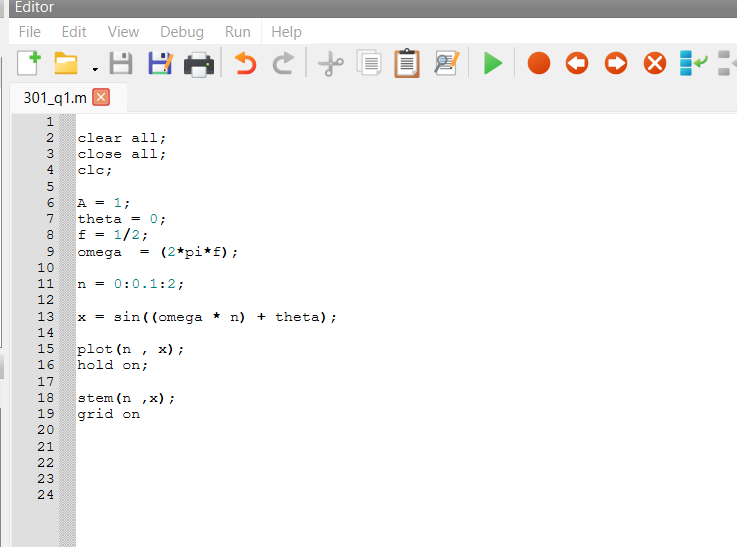
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| **Registration No: 2021t01108** |  |
| **Students Name: G.G.B.S Gunawardana** |  |
| **Date (dd/mm/yy): 19/07/2024** |  |

**Exercise:**

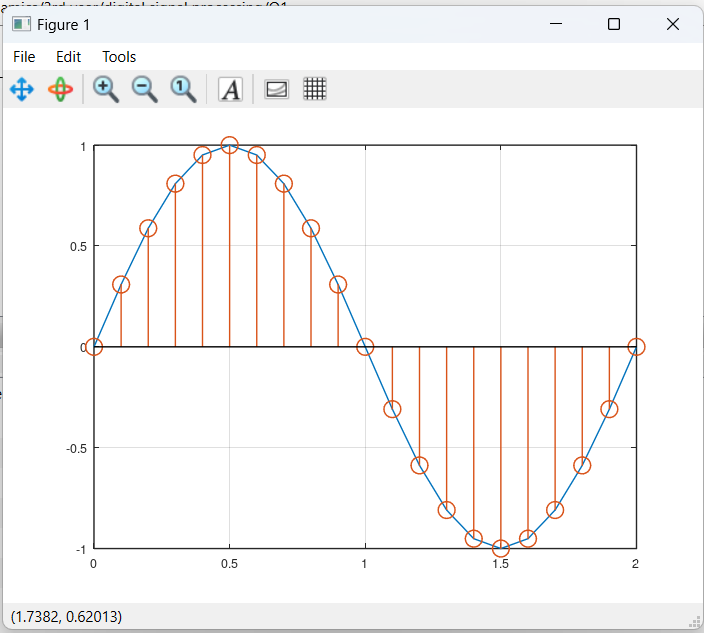
Question 01:

**Answer:**

***Octave code:***



***Figures:***



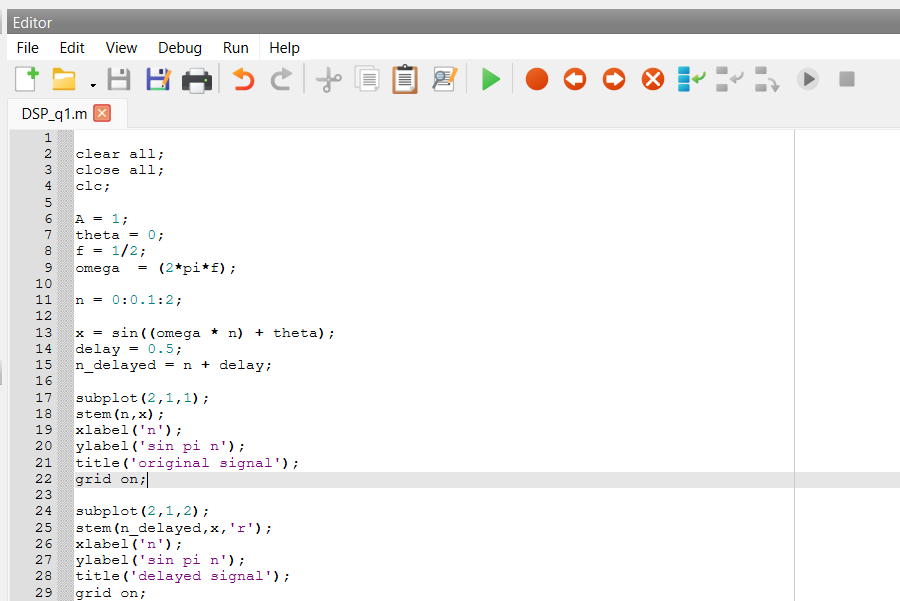
***Results/Answers in Command Window:***

**No results in command window**

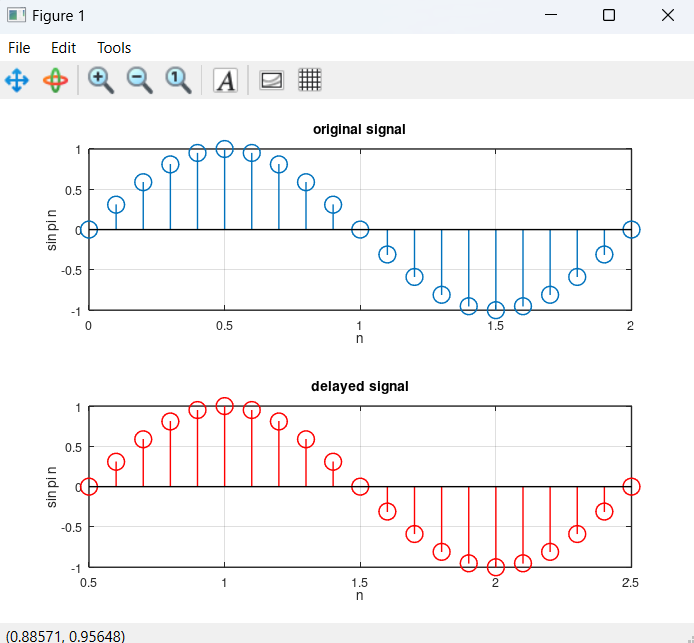
Question 02:

**Answer:**

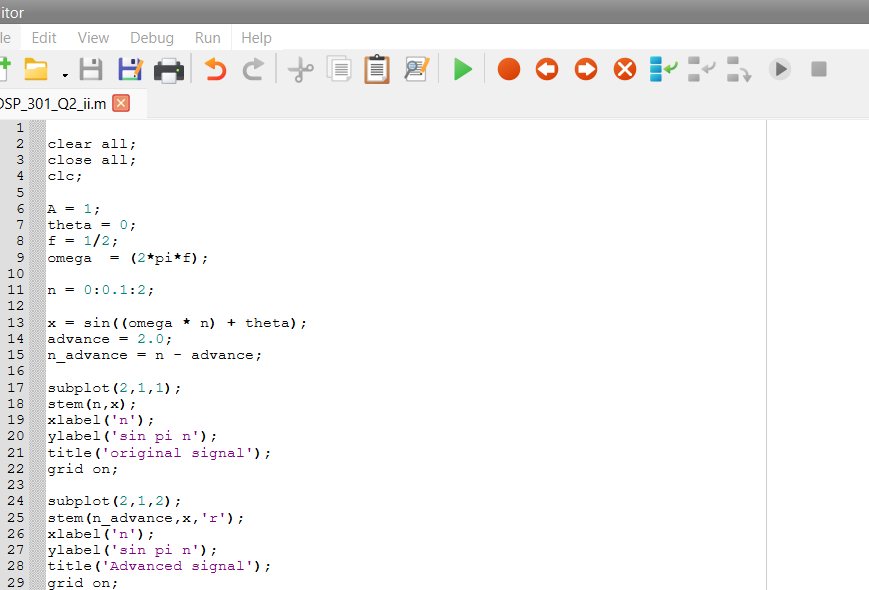
i. ***Octave code:***



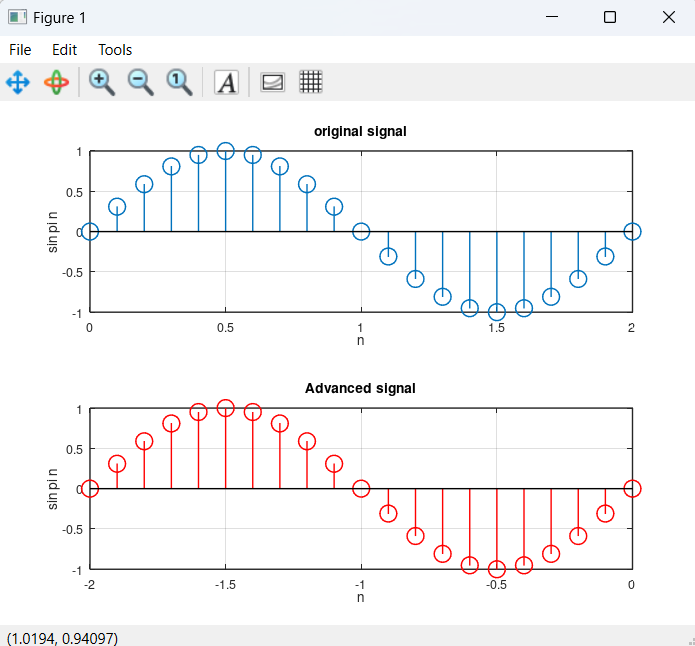
***Figures:***



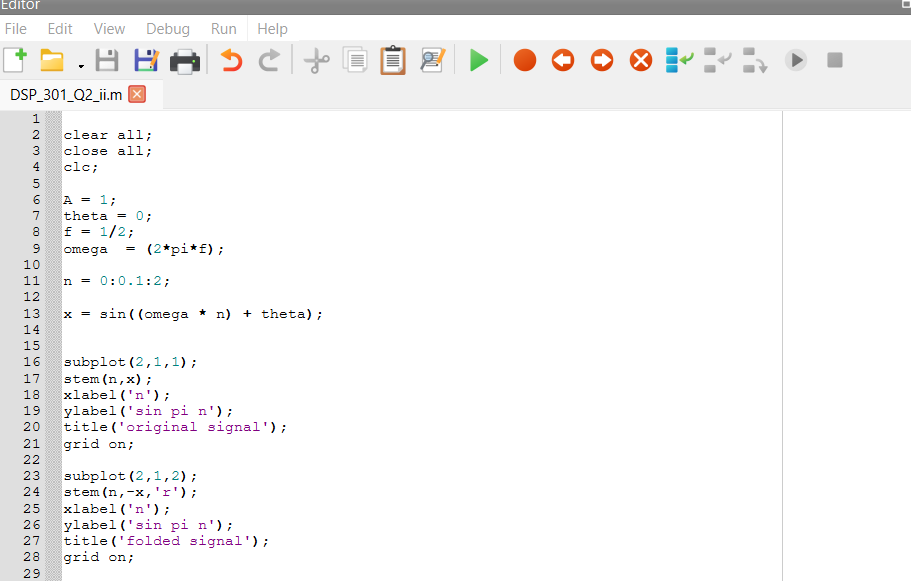
ii. ***Octave code:***



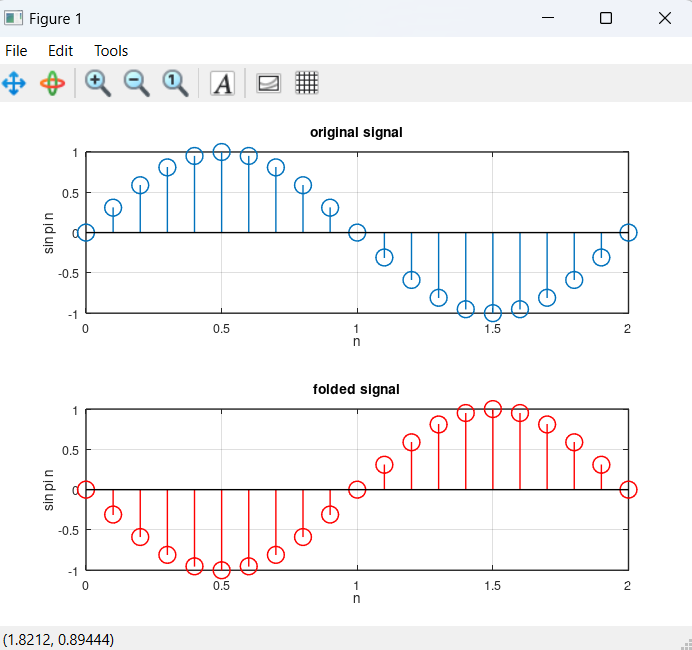
***Figures:***



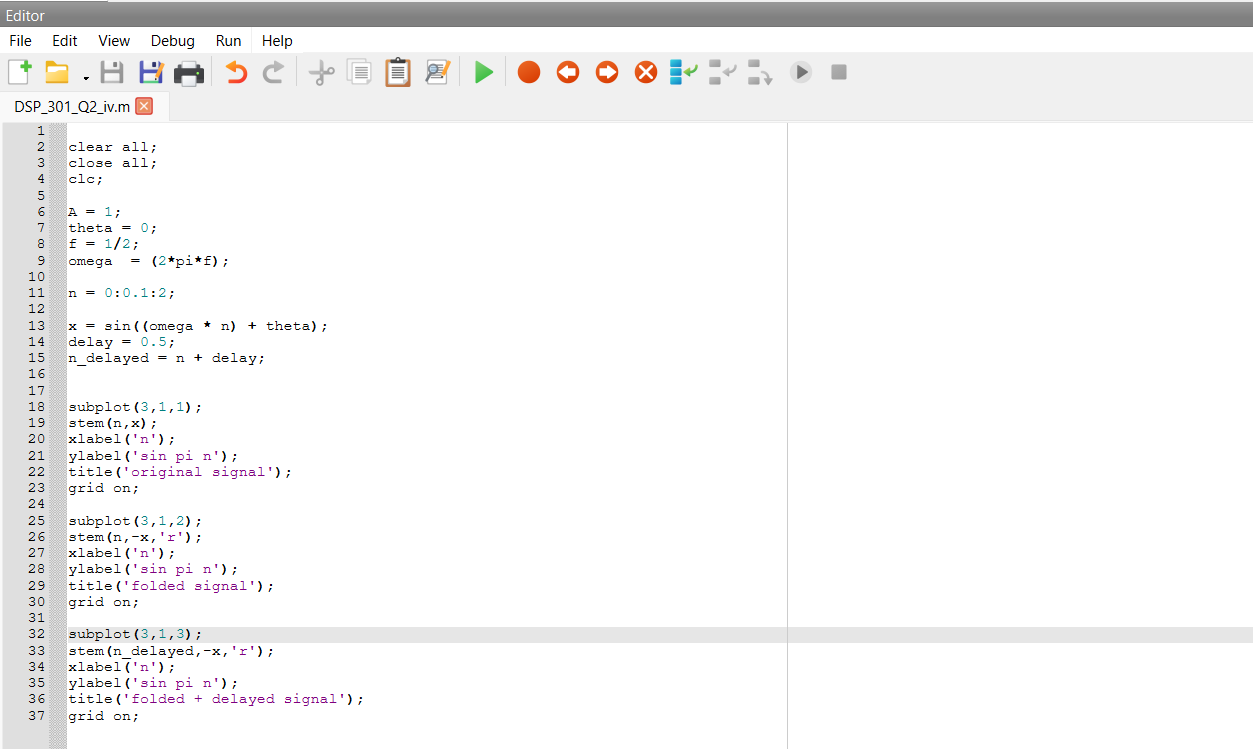
iii. ***Octave code:***



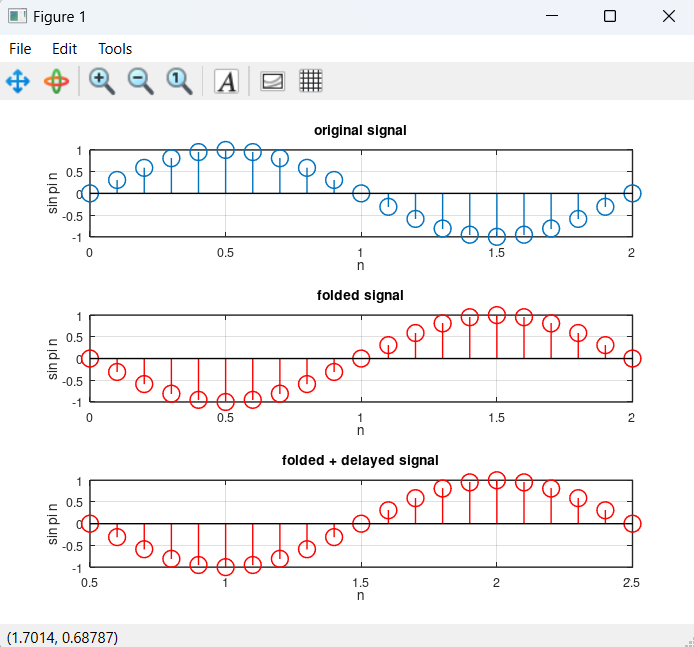
***Figures:***



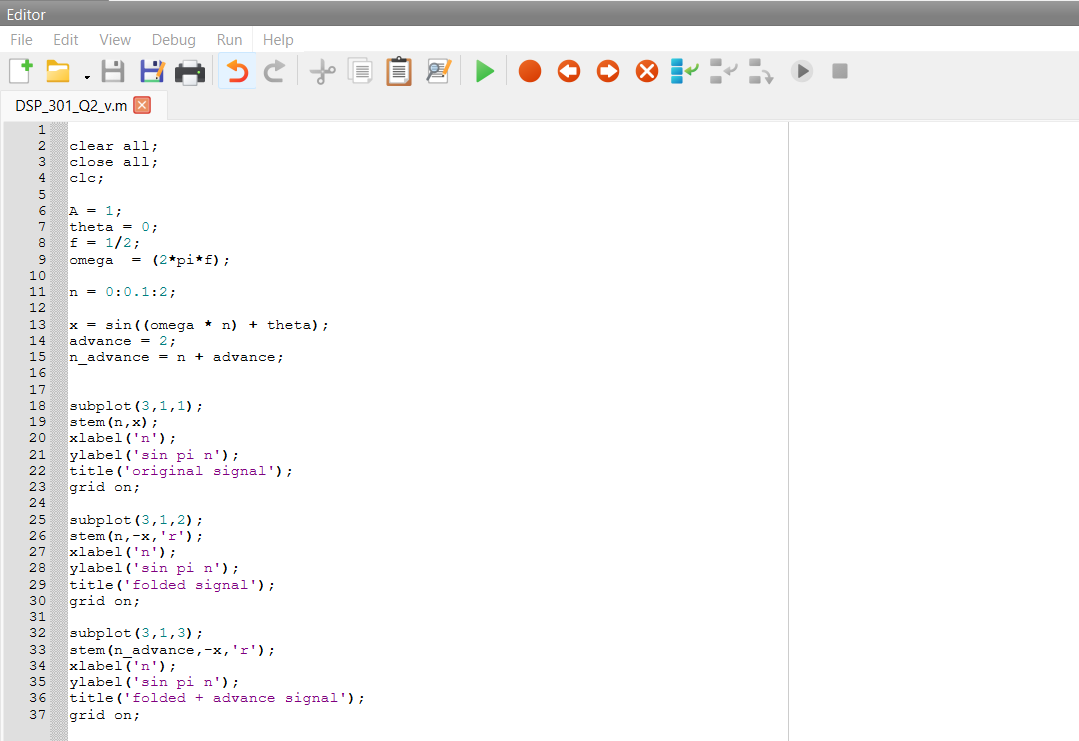
iv. ***Octave code:***



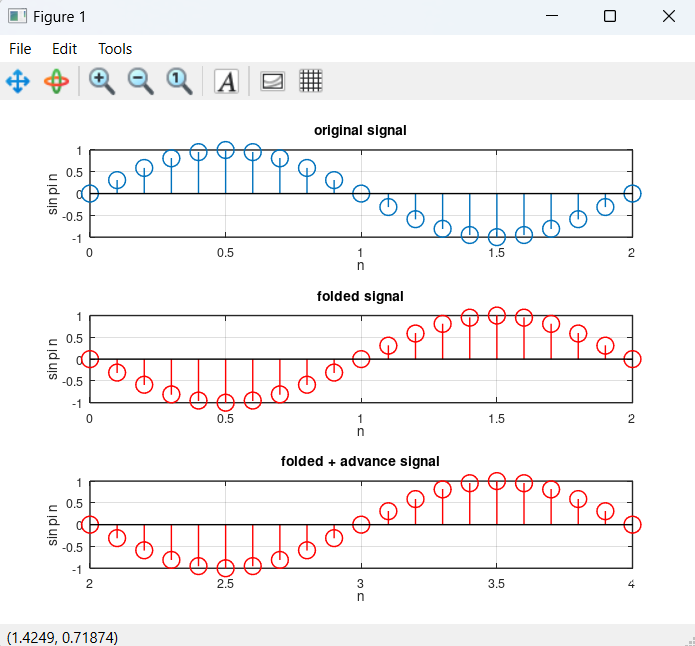
***Figures:***



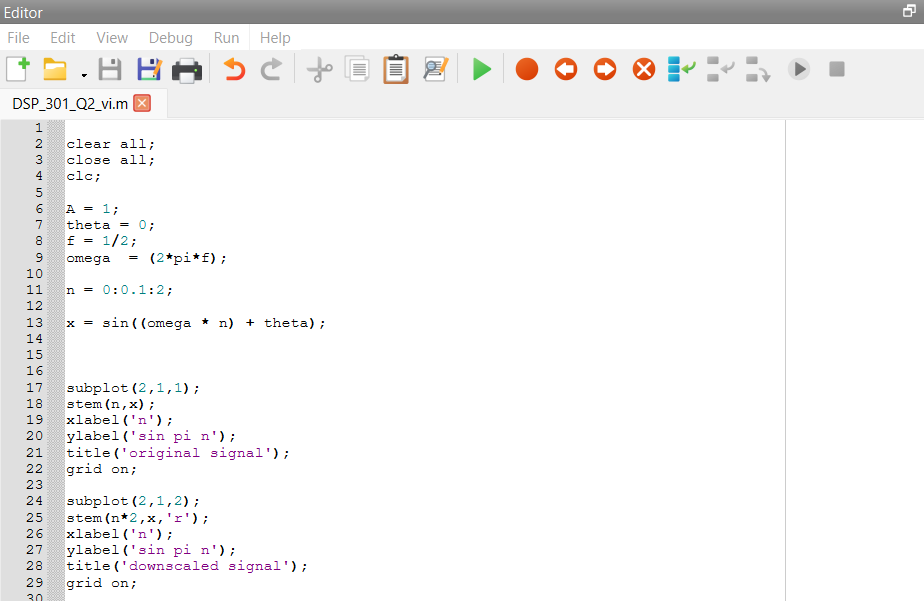
v. ***Octave code:***



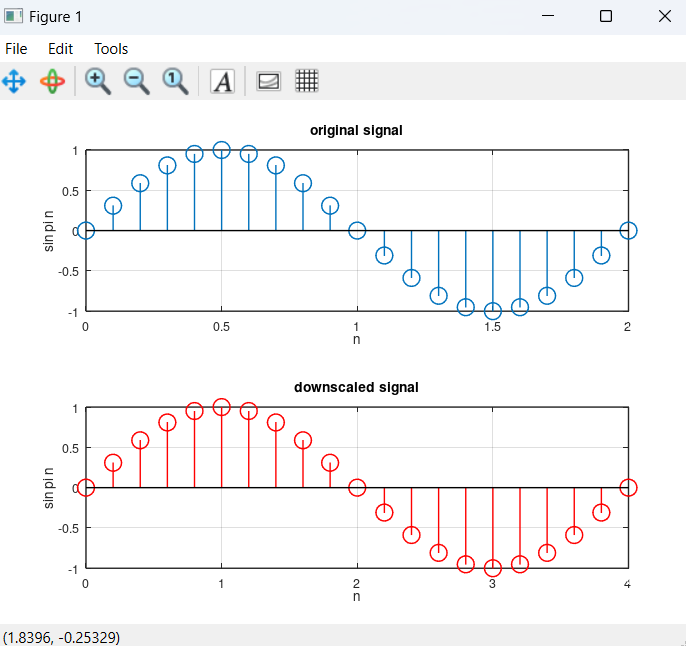
***Figures:***



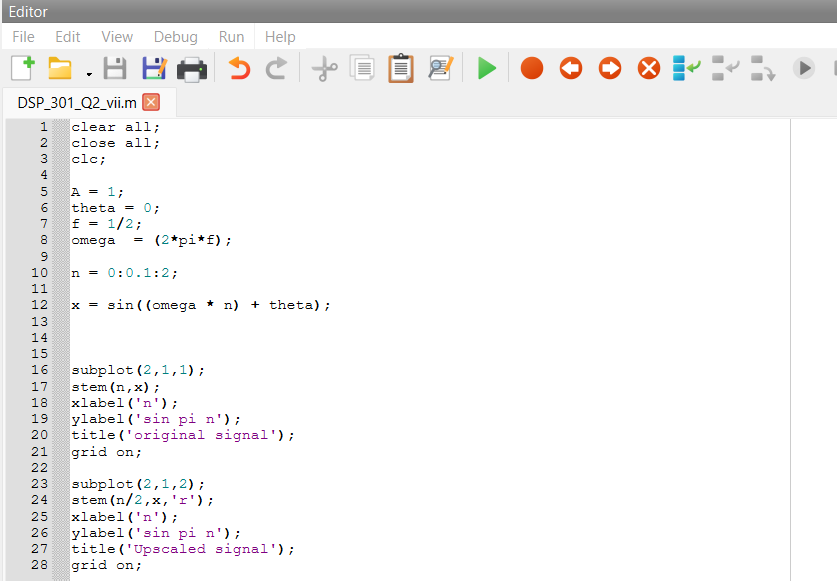
***vi. Octave code:***



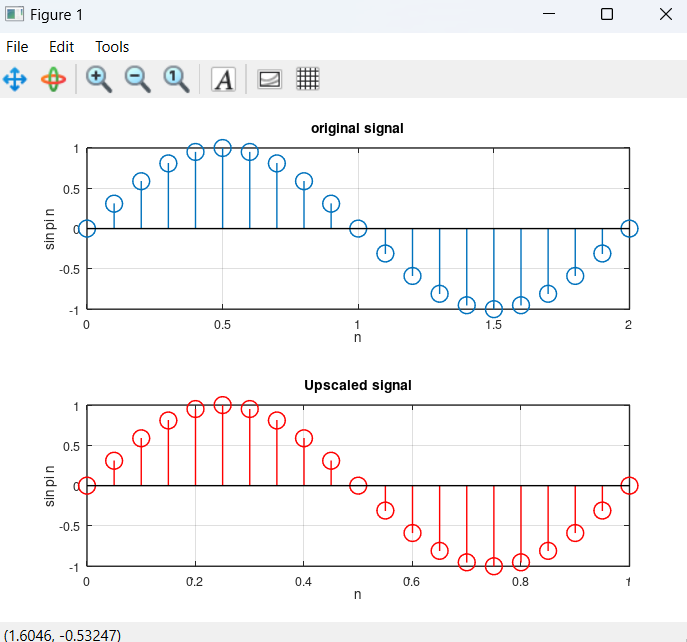
***Figures:***



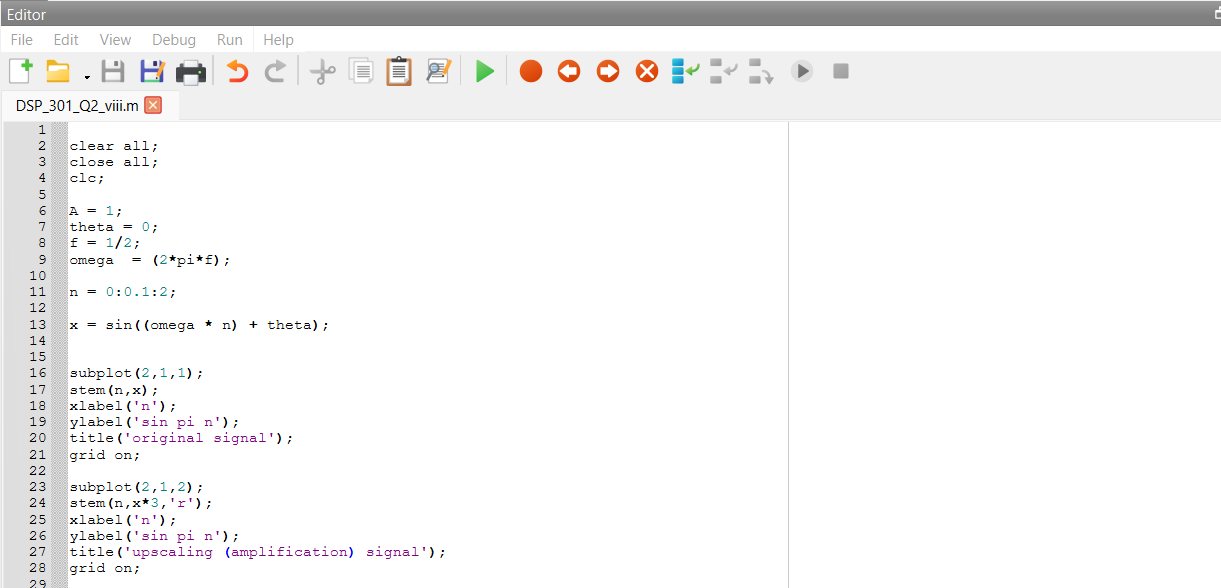
vii. ***Octave code:***



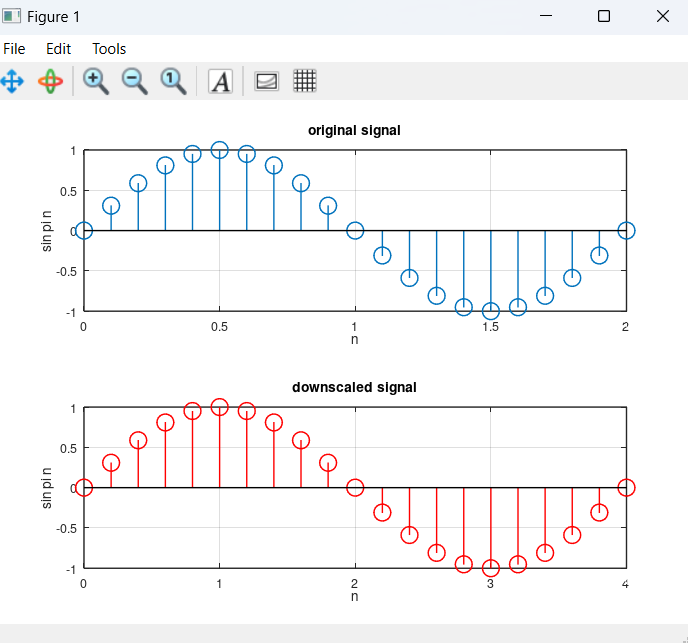
***Figures:***



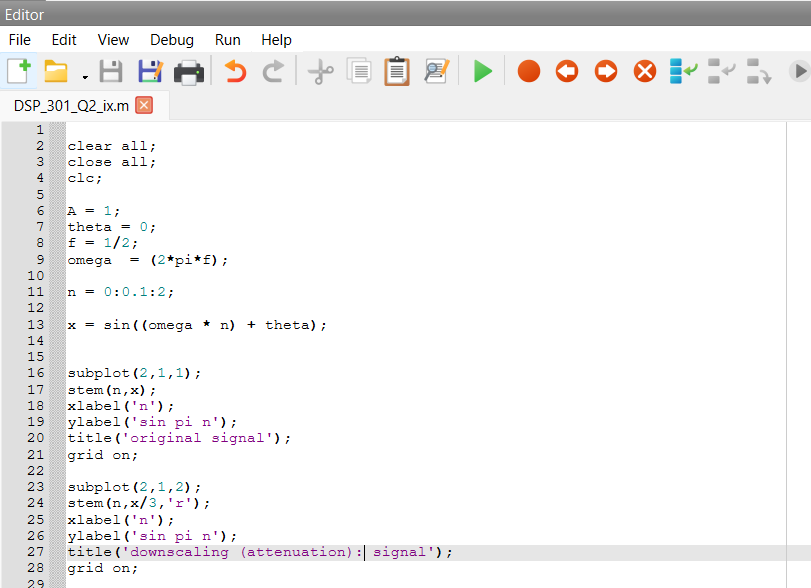
viii. ***Octave code:***



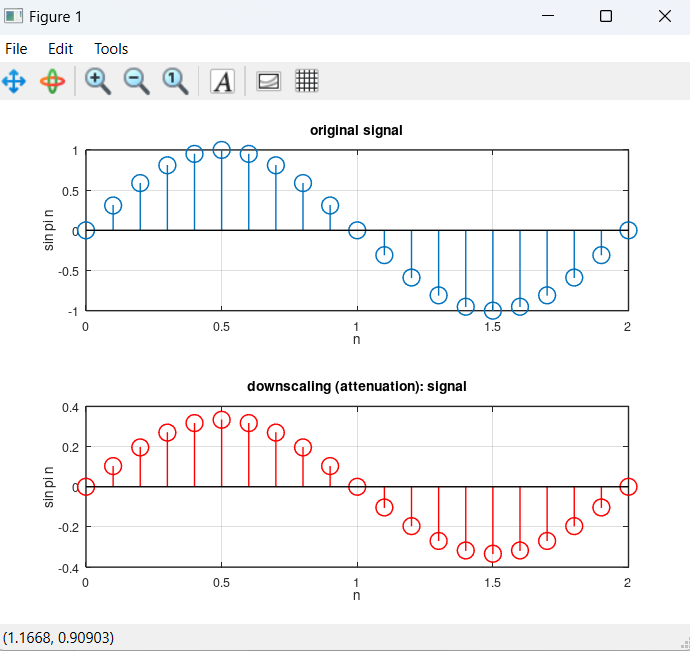
***Figures:***



***ix. Octave code:***



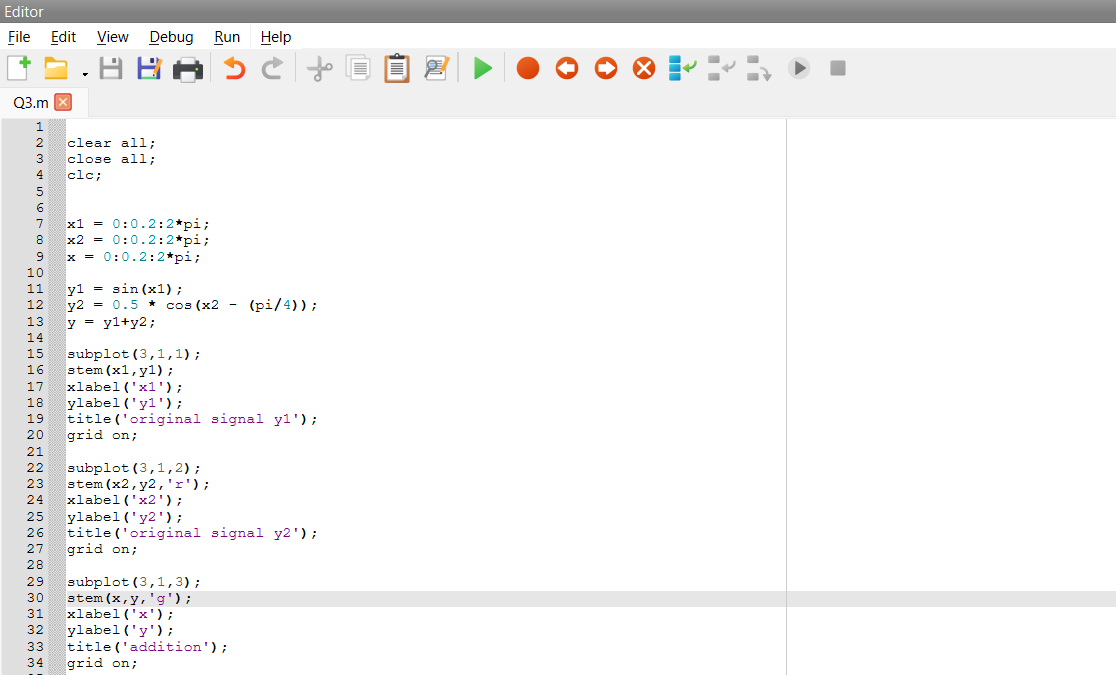
***Figures:***



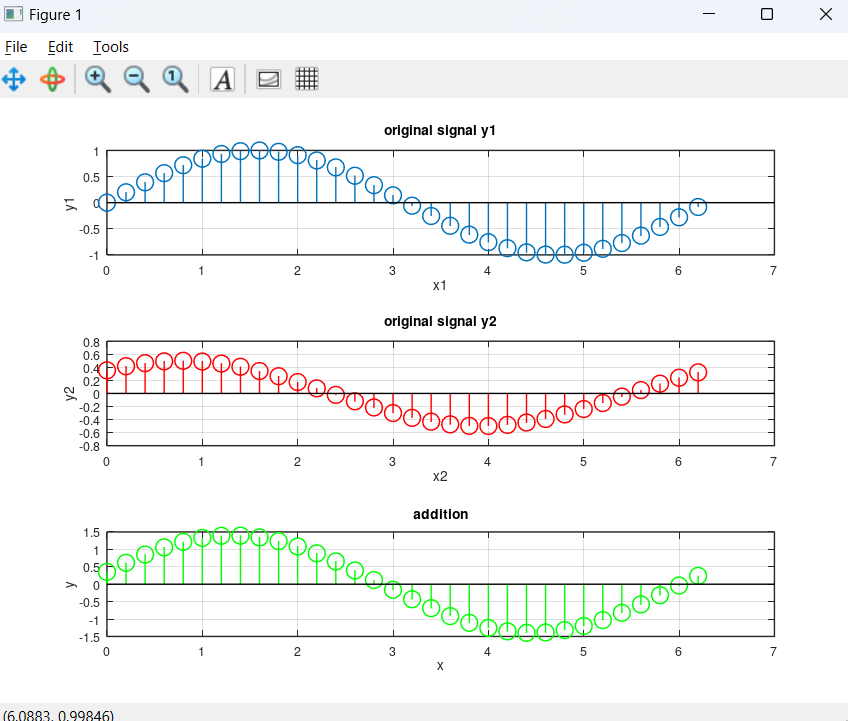
Question 03:

**Answer:**

***Octave code:***



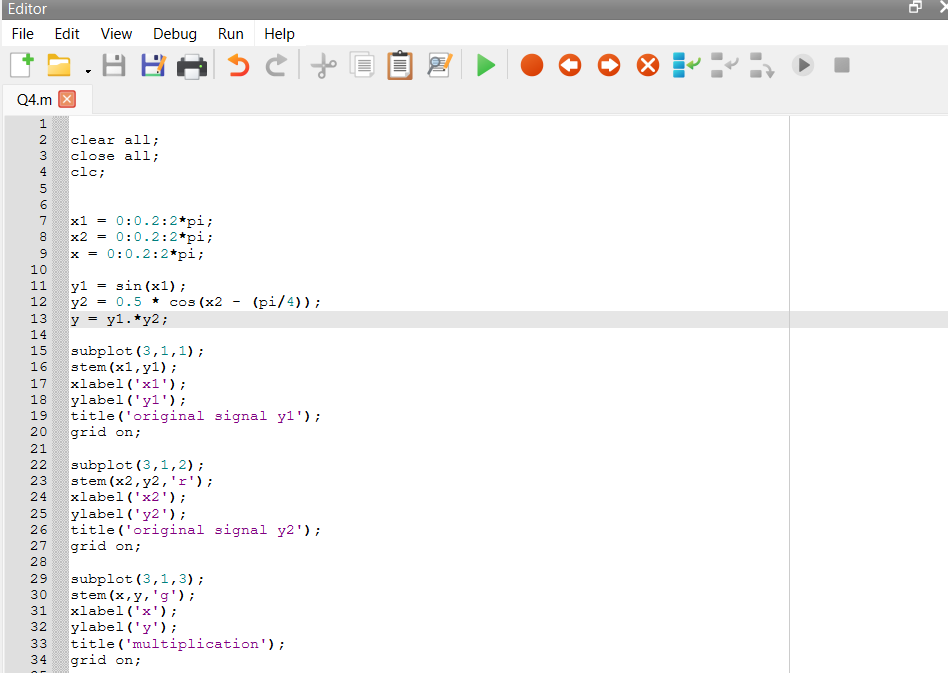
***Figures:***



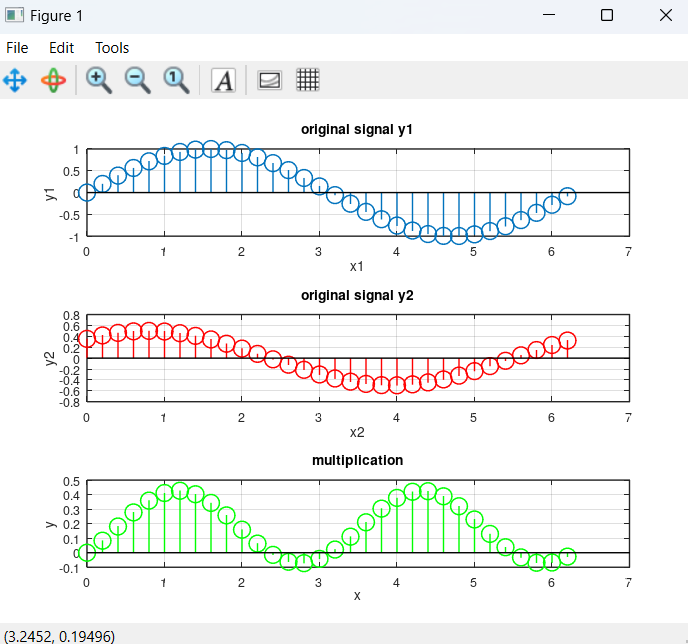
Question 04:

**Answer:**

***Octave code:***



***Figures:***



Question 05:

**Answer:**

**Time delay:**

* Signal reconstruction with digital filters
* Signal synchronization in communication systems
* Target direction in radar systems

**Amplification**

* In Audio systems
* With Sensors
* In power supply units