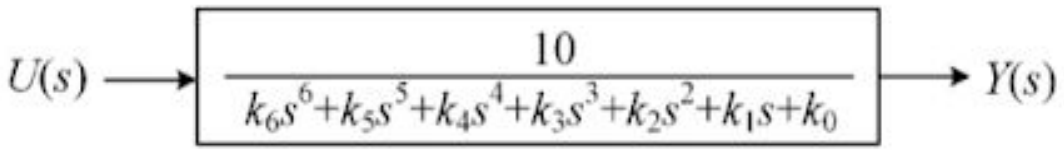
EE-302 Control System

(Routh Table and pole location results)

Group 8: Create a GUI based system that plots the Routh table for the system shown below. Comment on the number of poles in the right-half plane, the left-half plane, and on the imaginary axis. The parameter values k0, k1, k2, k3, k4, k5, k6 will be provided from user-end.



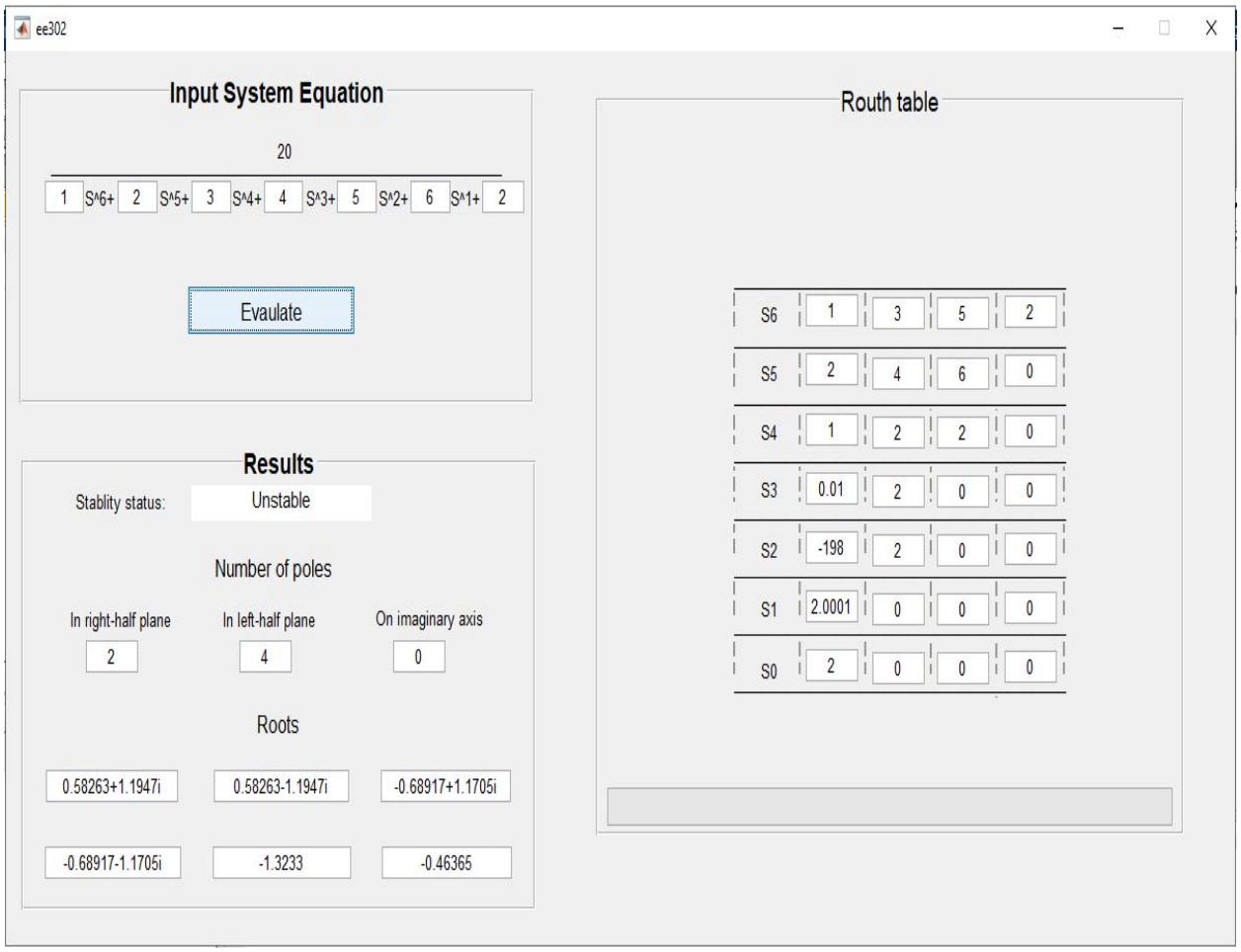
Group Members :-

1. 170002005: Aman Gupta
2. 170002026: Deekshith Reddy Kotla
3. 170002017: Himanshu Verma

Example:1

Input:- s^6 + 2*s^5 + 3*s^4 + 4*s^3 + 5*s^2 + 6*s+2

Output:-

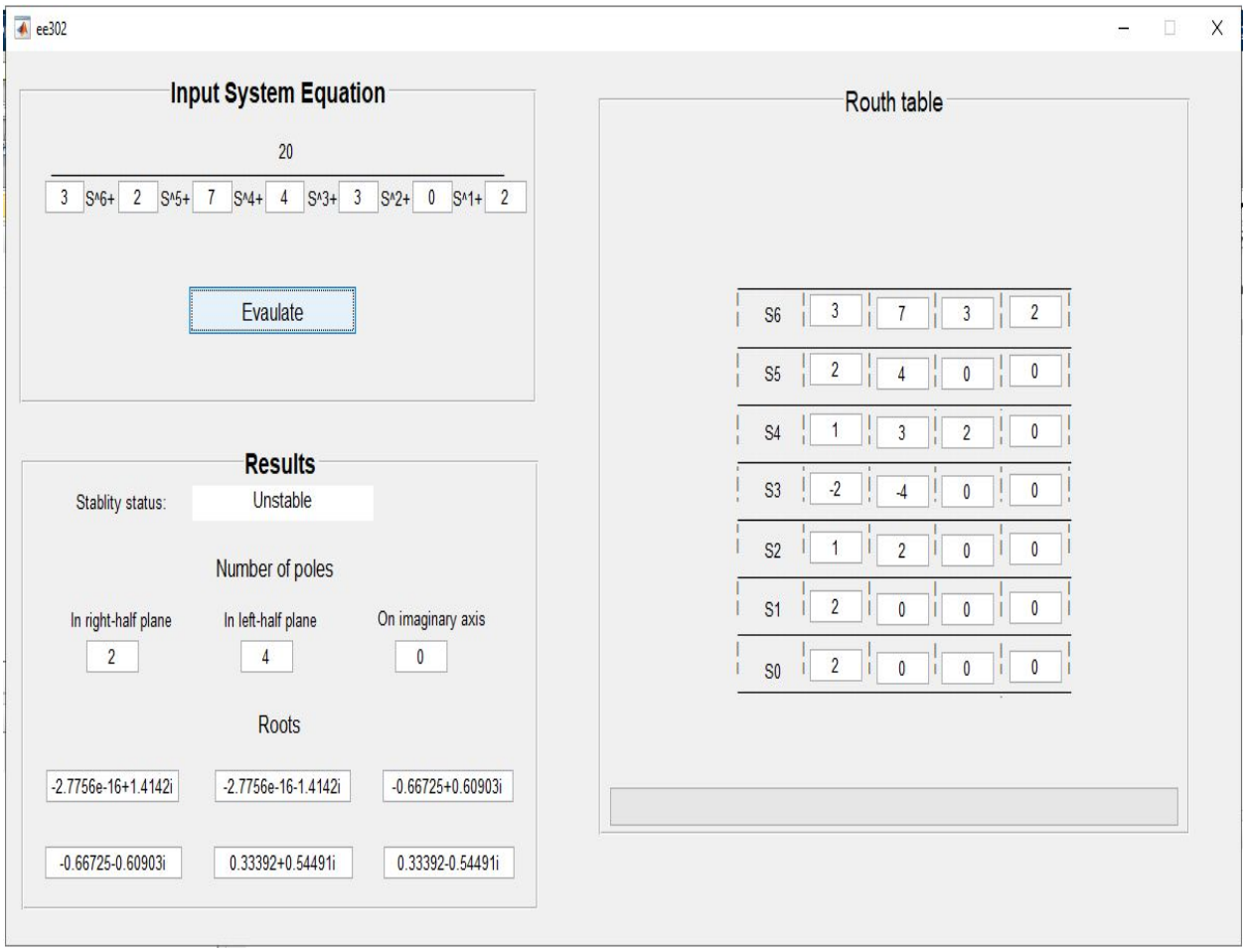


This system is unstable.

Example:2

Input:- 3*s^6 + 2*s^5 + 7*s^4 + 4*s^3 + 3*s^2 + 2

Output:-

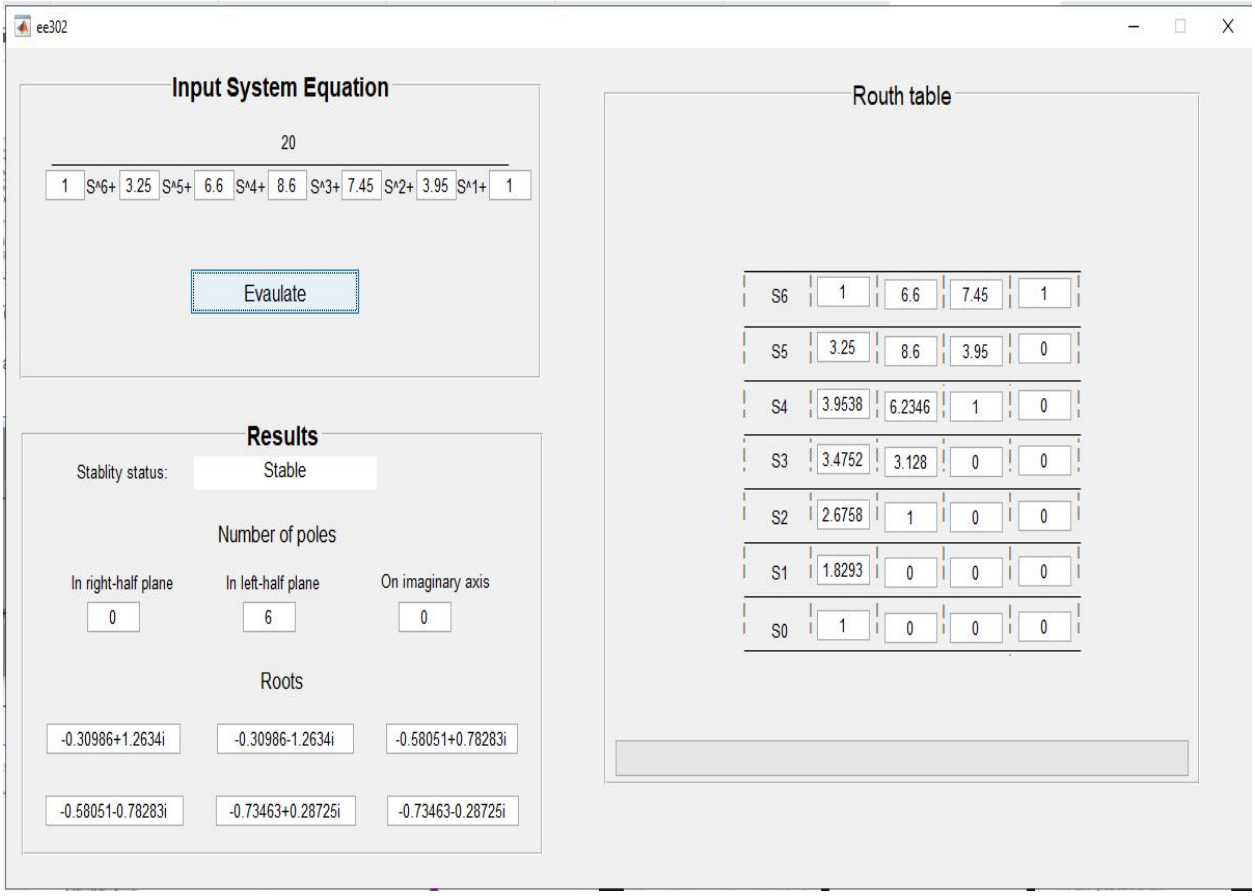


This system is unstable.

Example:3

Input:- s^6 + (3.25)*s^5 + (6.6)*s^4 + (8.6)*s^3 + (7.45)*s^2+ (3.95)*s + 1

Output:-

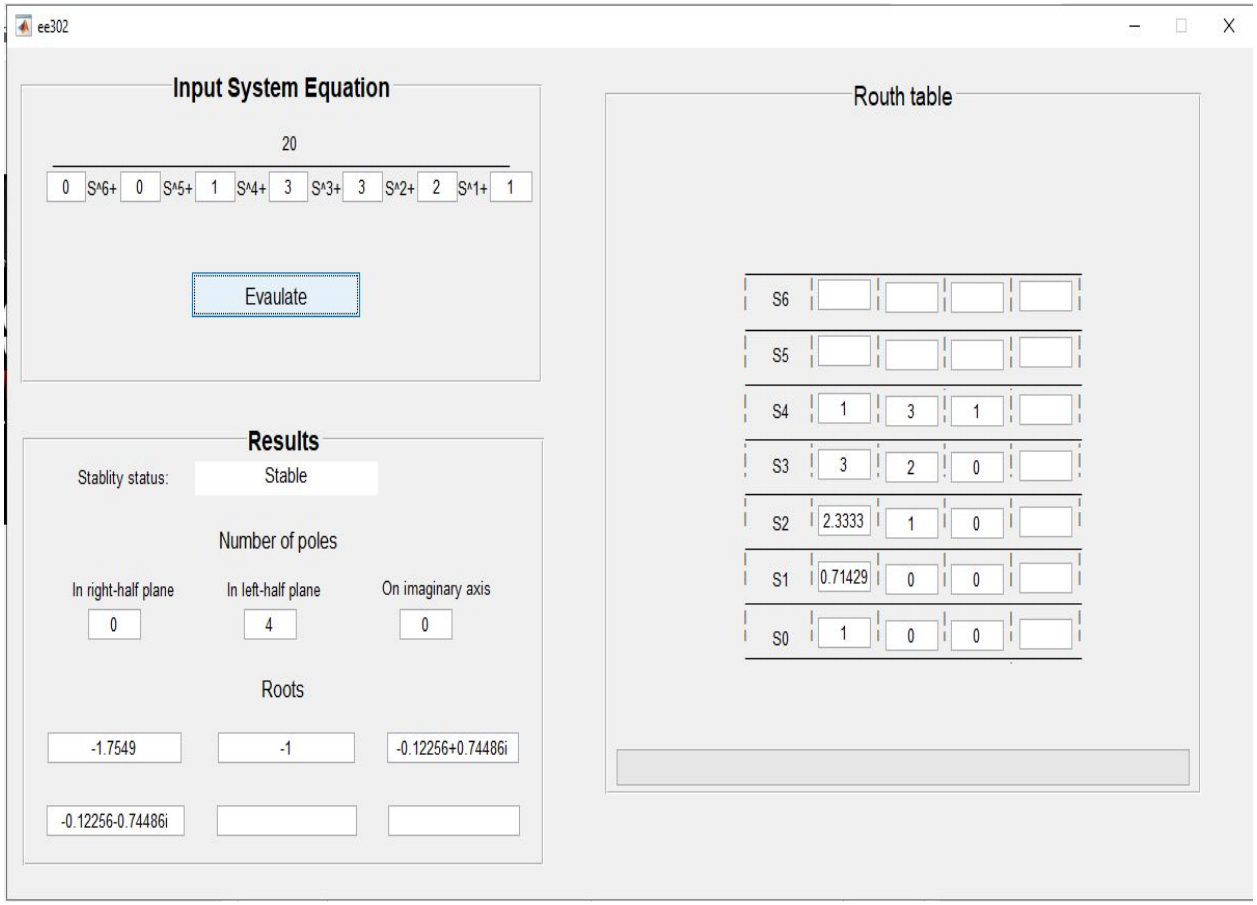


This system is stable.

Example:4

Input:- s^4 + 3*s^3 + 3*s^2+ 2*s + 1

Output:-

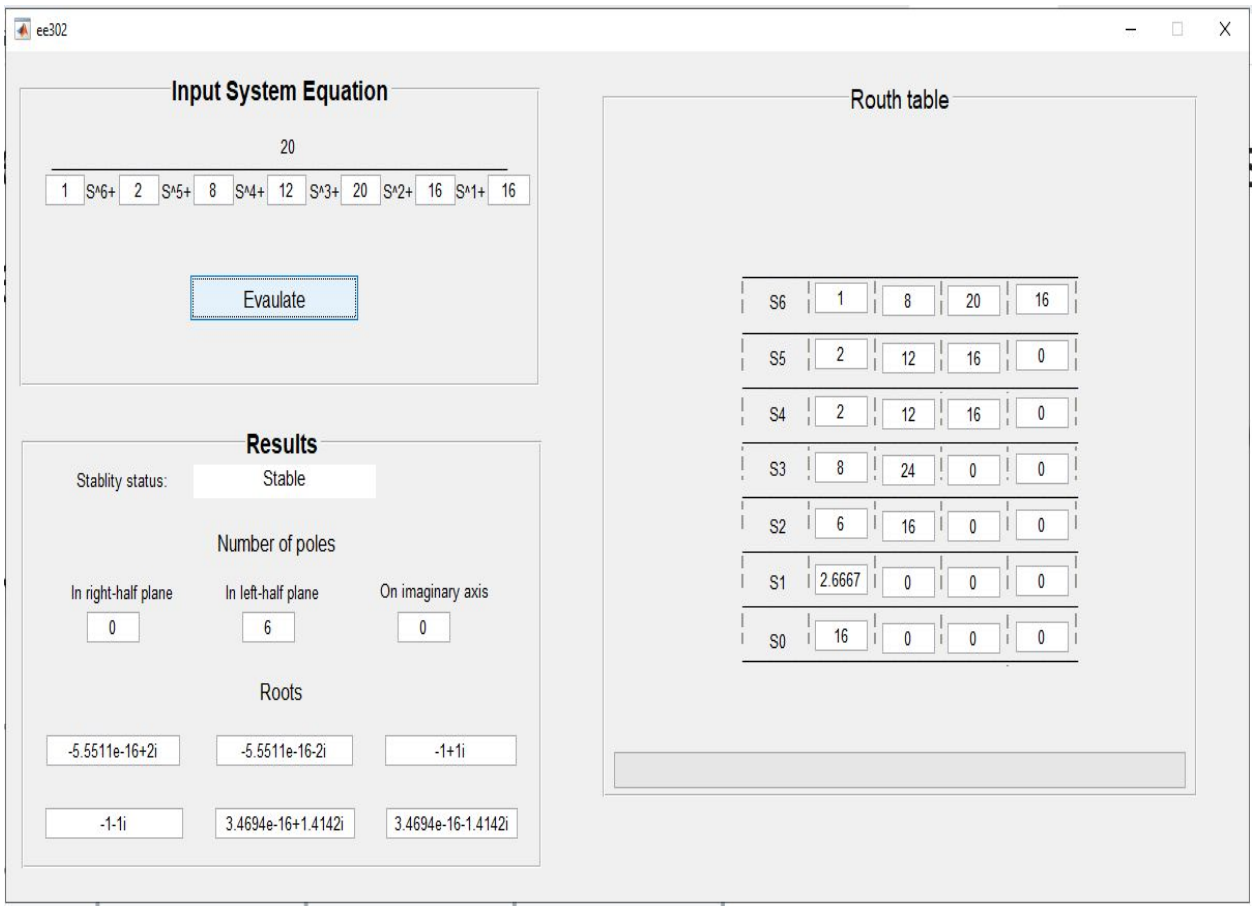


This system is stable.

Example:5

Input:- s^6 + 2*s^5 + 8*s^4+ 12*s^3 + 20*s^2 + 16*s + 16

Output:-

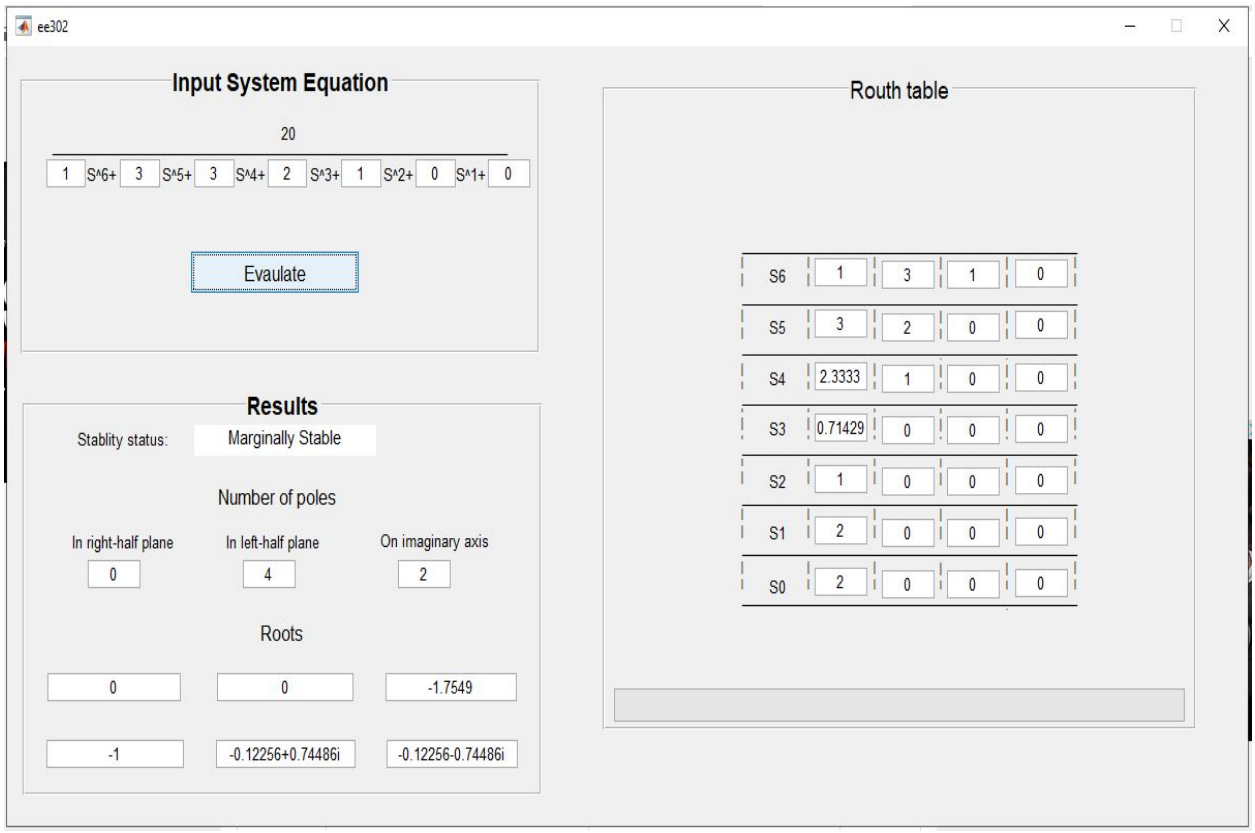


This system is stable.

Example:6

Input:- s^6 + 3*s^5 + 3*s^4+ 2*s^3 + s^2

Output:-

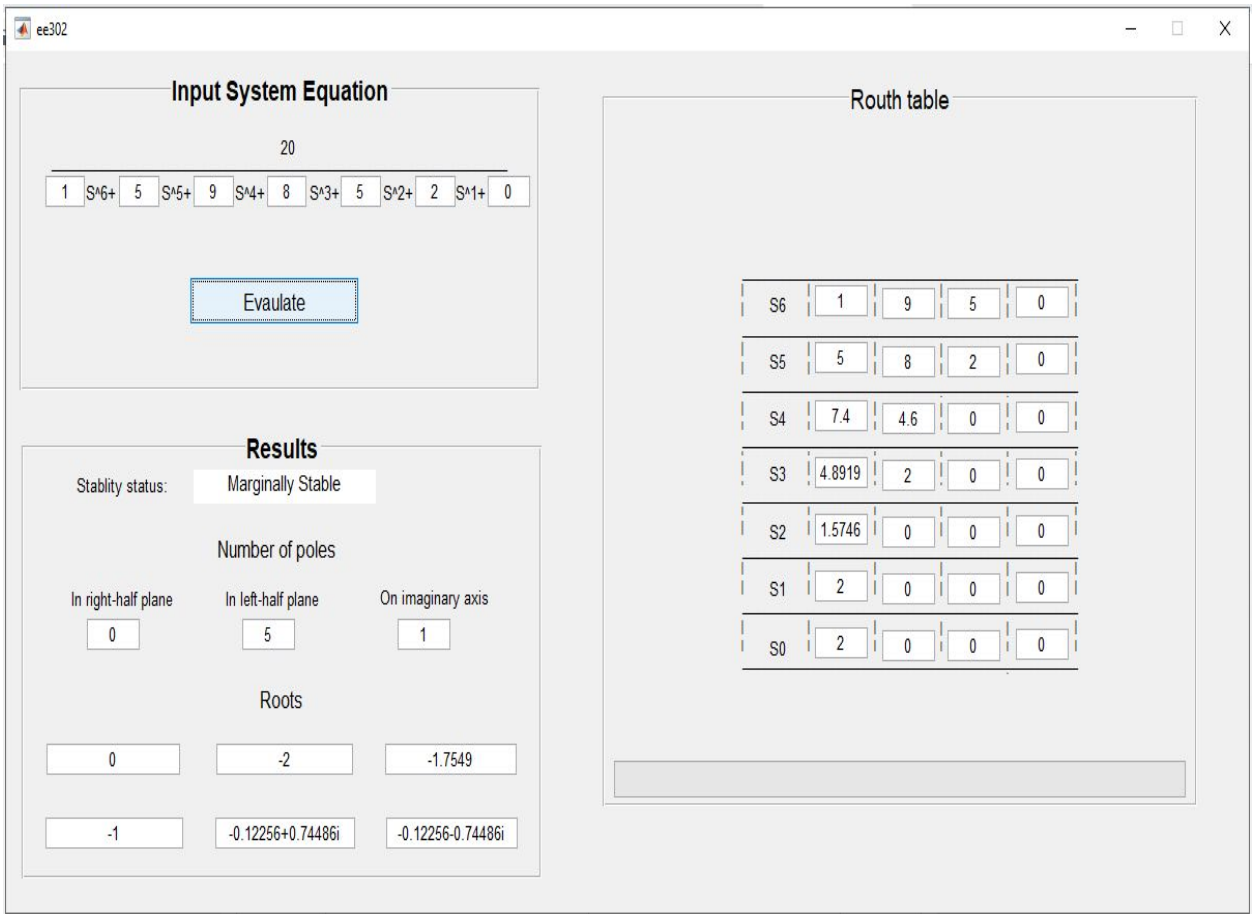


This system is marginally stable.

Example:7

Input:- s^6 + 5*s^5 + 9*s^4+ 8*s^3 + 5*s^2 + 2*s

Output:-



This system is marginally stable.