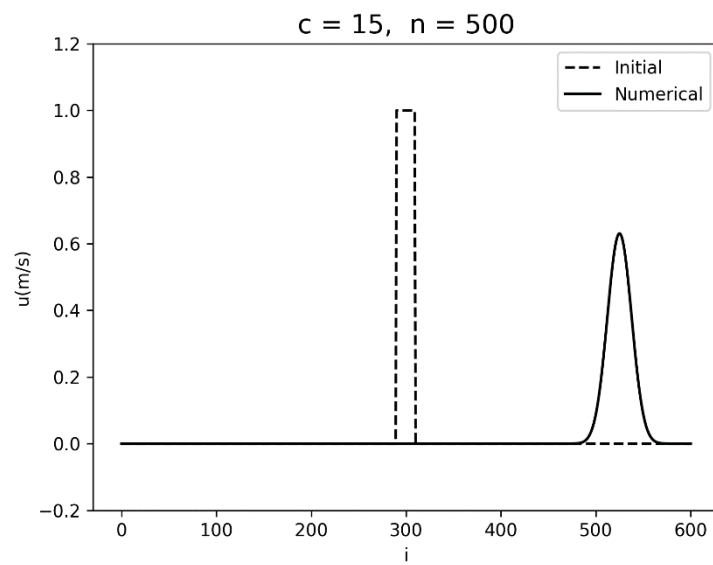**ESSC 4520**
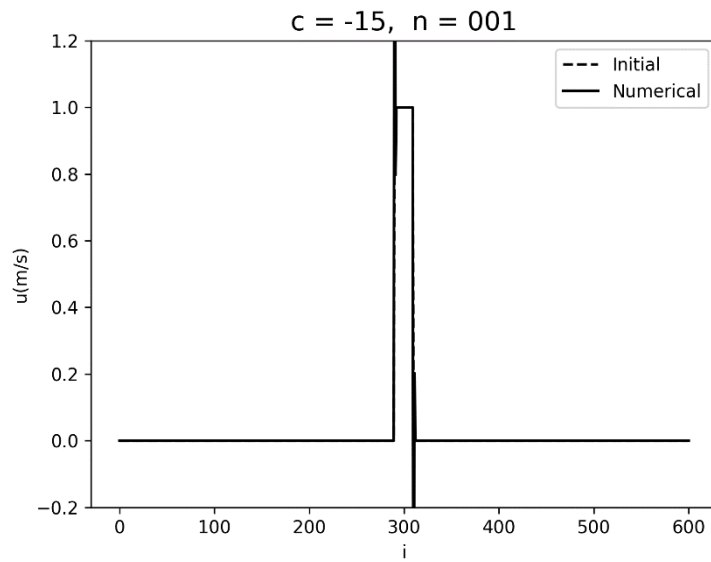**Name: Wu Hei Tung**
SID: 1155109536
L05 Exercise

Ex1

1-D advection equation solved using F-T B-S scheme with NX = 601, c = 15m/s, Δx = 1km, Δt=30 seconds.
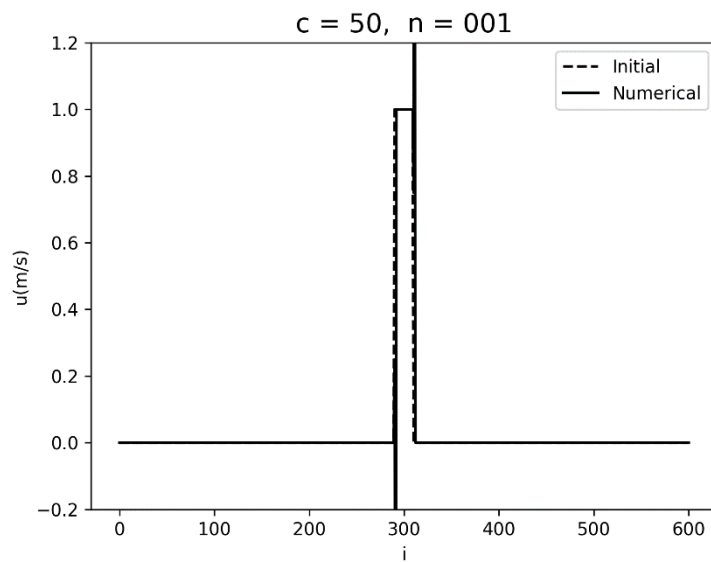
<u>Ex2</u>
a)
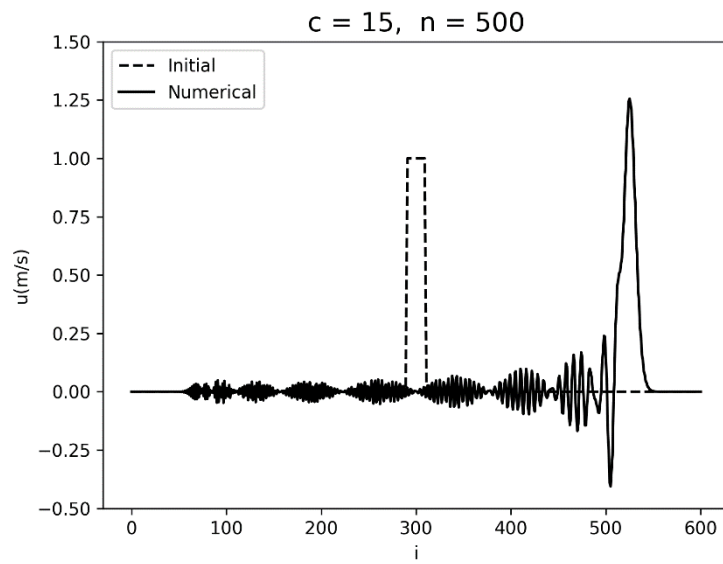1-D advection equation solved using F-T B-S scheme with NX = 601, c = -15m/s, Δx = 1km, Δt=30 seconds. It starts blowing up at n = 1.

b)
1-D advection equation solved using F-T B-S scheme with NX = 601, c = 50m/s (exceeds CFL condition), Δx = 1km, Δt=30 seconds. It starts blowing up at n = 1.

<u>Ex3</u>

1-D advection equation solved using leapfrog scheme with NX = 601, c = 15m/s, Δx = 1km, Δt=30 seconds.
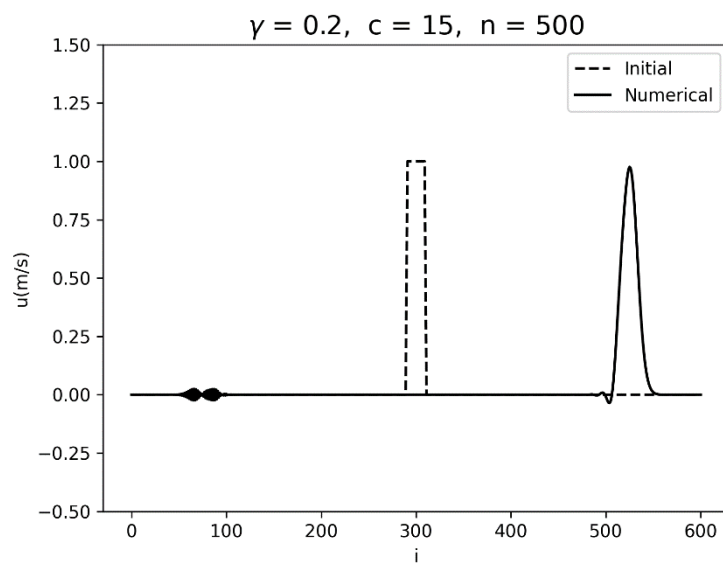
<u>Ex4</u>

Added Asselin-Roberts time filter with factor value 0.05.
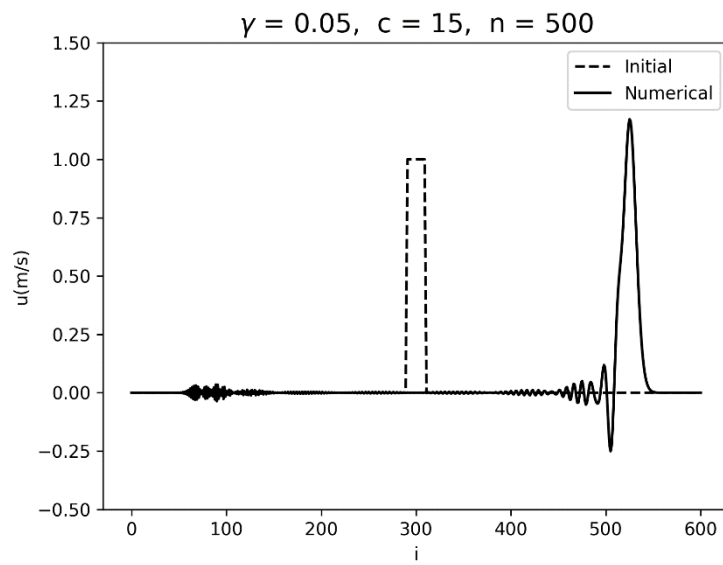
Added Asselin-Roberts time filter with factor value 0.2.

Added Asselin-Roberts time filter with factor value 0.5.

$\gamma = 0.5, \ c = 15, \ n = 500$