HW#2

Assignment: September 9, 2009
Due: September 15, 2009

Solve the 1D Buckley Leverett problem for 10 days with a time step $\Delta t = 0.1 $ day, using the explicit upstream formulation. Use the data specified in class.

\[
\frac{f_{w,i}^n - f_{w,i-1}^n}{\Delta x_{i-1/2}} = \frac{S_{w,i}^{n+1} - S_{w,i}^n}{\Delta t}
\]

Plot the results every 5 time steps on the same figure, using $S_w$ from 0 to 1 and $x$ from 0 to 100. Make sure the length of the x-axis is about the same as the y-axis when printed.

Provide a table of the $S_w$ versus grid cell at 10 days.

As is required for every assignment in this class, include a short summary of how you solved the problem.