Creating Images in Matlab

Given a matrix of integers, you can plot an image based on the use of those integers as indices into a prescribed colormap. The syntax as `image(A)` where A is the matrix of numbers.

For our images, we simply use three colors, with color 1 being the forest green, color 2 being the fiery orange, and color 3 being the burnt-out gray. We set that colormap with the following command.

```matlab
colormap([.035 .200 .153; 1.00 .367 .063; .561 .510 .592]) % rgb values for green, orange, gray
```

For example, try copying-pasting these three lines into a script. Then, change the `A` matrix to modify the image.
forest = ones (numRows, numCols)

\[ \text{fireRow} = \text{startRow} + \text{row} \\
\text{fireCol} = \text{startCol} + \text{col} \]

forest (fireRow, fireCol) = 2;

\[ \text{while (fire_burns == true)} \]

valid = directions;

valid [ 'N', 'W' ] - pick one of these at random

if length (valid) == 0

\[ \text{break; (out of cycle)} \]

end

how do we pick a random element of valid?

\[ \text{randomPich} = \text{rand} (\text{length (valid)}) \]

\[ \text{randDir} = \text{valid} (\text{randomPich}) \]

\[ = 'N' \]

\[ \text{forest (fireRow, fireCol) = 3; fire burnt} \]
rand Dir = 'N'

if rand Dir == 'N'
    Fire Row = Fire Row - 1;
else if RD == 'E'
    Fire Col = Fire Col + 1;
    ___ 'S'
    ___ 'W'
end

→ Forest(Fire Row, Fire Col) = 2 % Fire

    if sin S == 1
        colormap(...)
        image(Forest)
        pause(0.5);
    end

end % while