A Simple Matlab Programming Assignment
Solutions

Write a Matlab function exp_fraction to these specifications:

**Input:**
- \(x\) an array (assumed to have at least one entry)
- \(threshold\) a real value.

**Output:**
- \(p\) the fraction of the components \(x\) of \(x\) satisfying \(e^{x_i} \geq threshold\).

**Solution 1:**

```matlab
function p = exp_fraction (x, threshold)
% %Input: x an array (assumed to have at least one entry)
% threshold a real value.
% %Output: p the fraction of the components of x satisfying
% exp( x(i)) >= threshold
% n = 0;
for i = 1: length(x)
    if (exp(x(i)) >= threshold)
        n = n+1;
    end
end
p = n/length(x);
```

**Solution 2:**

```matlab
function p = exp_fraction (x, threshold)
% % .... (same comments as above)
% p = sum (exp(x) >= threshold)/length(x);
```

**Solution 3:**

```matlab
function p = exp_fraction (x, threshold)
% %Input: x an array (assumed to have at least one entry)
% threshold a real value (default value is zero).
% %Output: p the fraction of the components of x satisfying
% exp( x(i)) >= threshold
% if (nargin == 1)
%     t = 0;
% else
%     t = threshold;
% end
p = sum (exp(x) >= t)/length(x);
```