1) Three inputs to LSTM module.

   a) c_{t-1} = Cell state at time t-1
   b) h_{t-1} = Output Vector at time t-1
   c) x_t = Input vector at time t

2) Outputs of LSTM module
   a) h_t = Output Vector at time t
   b) c_t = Cell state at time t

3) Input of LSTM module "remembers" previous inputs and outputs
   = c_{t-1}

4) Outputs from LSTM module that "remembers" previous inputs and outp
   = c_t

5) a) x_t, h_{t-1} → Sigmoid, Vector Concat
   b) x_t, h_{t-1} → Sigmoid, Vector Concat
   c) x_t, h_{t-1} → Sigmoid, Vector Concat

6) x_t, h_{t-1}, c_{t-1}

7) x_t, c_t, h_{t-1}

8) $a \circ b = [1, 4, 5] \circ [2, 6, 9] = [2, 24, 45]$

9) $s(f(x)) = 1/(1 + e^{-f(x)})$ where $f(x) = w_f x_t + u_f h_{t-1} + b_f$

10) $c_t = f_t \circ c_{t-1} + i_t \circ \tanh(w_c x_t + u_c h_{t-1} + b_c)$