Algorithm 1 Emulator for video viewing and sharing behaviors

for request = 1 to N **do**
  a video request is generated by a user;
  request is redirected to video i with probability P_i;
  add initiator to queue and to connected;
  for user in queue **do**
    if user is initiator **then**
      $nviews_i$++;
      $eviews_i$++;
      update video rating incorporating user response;
      add neighbors to connected;
      add user as key and list of neighbors as value to parent-child dictionary;
      increment $eviews_i$ by number of neighbors;
    else
      fetch InfSc of parent from parent-child dictionary;
      if $VidRt_i$ * $VwRt_{user}$ * $InfSc_{parent} \geq VwRthr$ **then**
        $nviews_i$++;
        $eviews_i$++;
        update video rating incorporating user response;
      end if
      if $VidRt_i$ * $ShRt_{user}$ * $InfSc_{parent} \geq ShRthr$ **then**
        add neighbors to connected if not present already;
        add user as key, list of neighbors(not in connected) as value to parent-child dictionary;
        add neighbors to queue if not in connected;
        increment $eviews_i$ by number of neighbors;
      end if
    end if
  end for
  $Expectation_i$ = $eviews_i$ - $nviews_i$;
  P_i = $Expectation_i$ / $SumOfExpectations$;
end for