procedure STV(X, m, ε)
▷ X are votes of size N (number of votes) $\times M$ (number of candidates)
$D \leftarrow \{1, 2, \ldots, M\}$ ▷ Set of *hopeful* candidates
$E \leftarrow \{\}$ ▷ Set of *elected* candidates
$F \leftarrow \{\}$ ▷ Set of *eliminated* candidates
$L \leftarrow m$ ▷ Remaining number of seats
$Y \leftarrow X$ ▷ Remaining votes
$c \leftarrow 0$ ▷ Which Count we are at
$w_i \leftarrow 1 \quad \forall\, i = 1, \ldots, N$ ▷ Initialize a vector of weights, one per voter
while $L > 0$ **do** ▷ End if there are no remaining seats
$c \leftarrow c + 1$ ▷ Increase Count
$u_{i,j} \leftarrow w_i \delta_{Y_{i,j}}(1) \quad \forall\, i = 1, \ldots, N,\ j = 1, \ldots, M$ ▷ Weighted first preferences
$v_{c,j} \leftarrow \sum_{i=1}^{N} u_{i,j} \quad \forall\, j = 1, \ldots, M$ ▷ Sum of weighted first preferences
$Q \leftarrow \sum_{j=1}^{M} v_{c,j}/(L+1) + \varepsilon$ ▷ Compute quota
if $\max_{j \in D} v_{c,j} \geq Q$ **then** ▷ A candidate is to be elected
$k \leftarrow \arg\max_{j \in D} v_{c,j}$ ▷ Which candidate has the most votes
if $||k|| > 1$ **then** ▷ If there is more than one such candidate
$k \leftarrow$ resolve.tie.for.election(k, X, v) ▷ Break tie
end if
$S \leftarrow (\max_{j \in D} v_{c,j} - Q)/\max_{j \in D} v_{c,j}$ ▷ Compute surplus
$w_r \leftarrow u_{rk} * S \quad \forall\, r$ where $Y_{r,k} = 1$ ▷ Recompute weights
$L \leftarrow L - 1$ ▷ Decrease number of available seats
$E \leftarrow E \cup \{k\}$ ▷ Candidate k is elected
else ▷ A candidate is to be eliminated
$k \leftarrow \arg\min_{j \in D} v_{c,j}$ ▷ Which candidate has the least votes
if $||k|| > 1$ **then** ▷ If there is more than one such candidate
$k \leftarrow$ resolve.tie.for.elimination(k, X, v) ▷ Break tie
end if
$F \leftarrow F \cup \{k\}$ ▷ Candidate k is eliminated
end if
$D \leftarrow D \backslash \{k\}$ ▷ Candidate k is removed from the pool of hopefuls
$Y_{i,r} \leftarrow Y_{i,r} - 1 \quad \forall\, i = 1, \ldots, N$ where $Y_{i,k} > 0$ and $r = 1, \ldots, M$ where $Y_{i,r} > Y_{i,k}$
▷ Above: shift votes for voters who voted for candidate k
$Y_{i,k} \leftarrow 0 \quad \forall\, i = 1, \ldots, N$ ▷ Remove votes for candidate k
end while
return(E, F, v)
end procedure

Note: $\delta_Y(1) = 1$ if $Y = 1$ and 0 otherwise, is the Kronecker delta function; the arg max and arg min functions return sets, with more than one element when there is a tie; and $||k||$ is the number of elements in the set k.