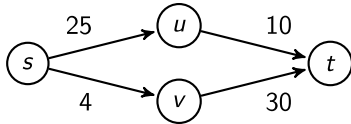


## C: Candy Contribution

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- **Problem:** Given a graph, nodes  $s$  and  $t$ , a number of candies  $c$  and for each edge  $e$  an integer  $p_e$  denoting what percentage of the candies you are carrying you have to pay to use the edge (rounded up).
  - What is the maximum number of candies you can bring from  $s$  to  $t$ ?
- Sample showed that computing path with lowest summed taxed percentage is not always best:  $(1 - 0.25)(1 - 0.1) = 0.675 > 0.672 = (1 - 0.04)(1 - 0.3)$ .



- So, cannot do a 'normal' additive dijkstra with tax percentages to find best path.
- Solution: Tweak dijkstra a bit. Instead of initializing every node to  $\infty$  and lowering it everytime you find a shorter path. Initialize everything to 0 and raise it when you find a path where you hold on to more candies.