

# So, what if the graph isn't bipartite?

Big idea:

Just round!

If  $x_u \geq \frac{1}{2}$ , round up to 1.

If  $x_u < \frac{1}{2}$ , round down to 0

Two questions – is it a vertex cover? How far are we from the true minimum?

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Minimize  $\sum w(u) \cdot x_u$

Subject to:

$x_u + x_v \geq 1$  for all  $(u, v) \in E$

$0 \leq x_u \leq 1$  for all  $u$ .