

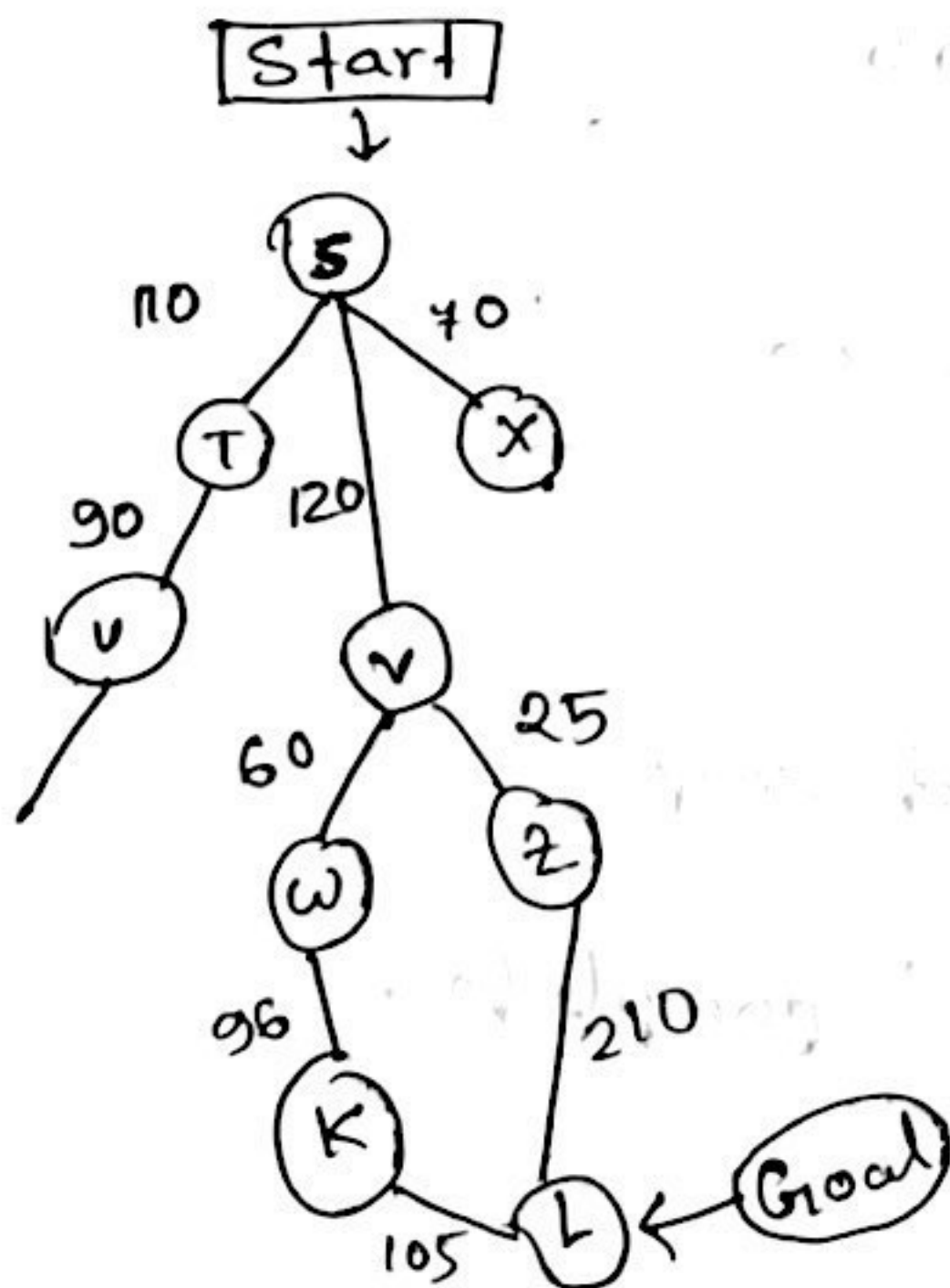
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Solution:

Greedy Best search algorithm can be both complete and incomplete. It's dependent on the graph or tree, for tree version it is always incomplete. Because it doesn't keep track. Again for the graph version, the tracks are kept. So, when it is a finite graph, we may find a destination but for infinite graph it is still incomplete.

For example:



State	$h(n)$
S	350
T	330
V	240
W	190
X	380
Z	178
K	90
L	0

S <sup>350</sup>	T <sup>330</sup>	V <sup>260</sup>	X <sup>380</sup>
V <sup>260</sup>	T <sup>330</sup>	X <sup>380</sup>	W <sup>190</sup> Z <sup>178</sup>
Z <sup>178</sup>	T <sup>330</sup>	X <sup>380</sup>	W <sup>190</sup> L <sup>0</sup>

L<sup>0</sup> [T<sup>330</sup> X<sup>380</sup> W<sup>190</sup>

So, Path: S → V → Z → L

But when  $h(T) = 200$ , there will be a loop.

State	$h(n)$
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$T \rightarrow 250$

$S^{350}$

$S^{35}$

$T^{200} \quad V^{260} \quad X^{380}$

$T^{200}$

$V^{260} \quad X^{380} \quad U^{90}$

$U^{90}$

$V^{260} \quad X^{380} \quad T^{200}$

$T^{200}$

$V^{260} \quad X^{380} \quad U^{90}$

So, output is infinite loop.

So this GBFS is incomplete.