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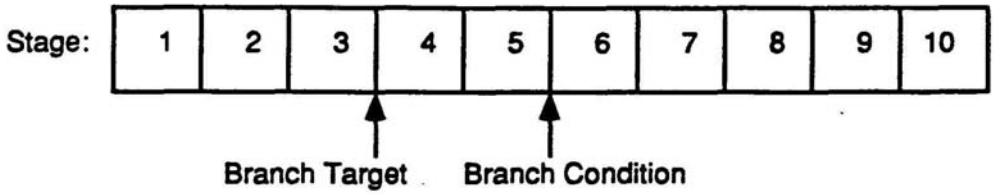
January 1994 Quals Questions



Question:

For this pipeline what percentage of branches must be taken so that the "always taken" and "always not taken" schemes have the same performance

Answer:

To solve this problem we need to equate the branch penalties for each prediction scheme. If t is the percentage of taken branches, then we get the following equation:

Always taken		Always not taken
$2t + 4(1 - t)$	=	$4t$

The rest is algebra

$t = 66.7\ \%$