

Übungen zur Vorlesung  
**Methoden des Algorithmenentwurfs**  
SS 2017  
Blatt 5

**Aufgabe 12:**

We want to align the words  $X = \textit{mean}$  and  $Y = \textit{name}$ . We assume that the gap cost is  $\delta = 2$ ; matching a vowel with a different vowel, or a consonant with a different consonant, costs 1; while matching a vowel and a consonant with each other costs 3. Model this alignment problem as a shortest-path problem on the grid graph  $G_{XY}$  and determine the minimum alignment costs for  $X$  and  $Y$  by determining the minimum cost of a path from node  $(0, 0)$  to  $(4, 4)$ .

**Aufgabe 13:**

Prove the *observation* stated on slide 15 of the lecture on May 24th.