The aim of this diploma thesis is to examine harmonicity as an indicator of segment boundaries in Czech. In our analysis we have focused on sequences of voiced and unvoiced segments, more precisely the combination of voiceless obstruents and vowels. First we examined the behaviour of harmonicity in the area of segment transitions. Based on the results we established a classification of harmonicity behaviours, which was further used as a basis for examining the relationship between the placement of segment boundaries and the behaviour of harmonicity. The results, Le. established time intervals, in which most boundaries were situated, imply harmonicity to be a promising indicator of segment boundaries in Czech. The further course of research, which attempts to use harmonicity for purposes of automatic segmentation, is to examine the accuracy of segmentation while using different settings for HNR estimation.