This thesis is focused on comparing methods for similarity image retrieval. Common techniques and testing sets are introduced. The testing sets are there to measure the accuracy of the searching systems based on similarity image retrieval. Measurements are done on those models which are implemented on the basis of presented techniques. These measurements examine their results depending on the input data, used components and parameters settings, especially the impact of image resolution on the retrieval precision is examined. These results are analysed and the models are compared.