Cancer is a frequent disease and cause of human death, during one year over 70 000 people suffer and over 25 000 die because of cancer in the Czech Republic. Cancer causes change of cellular metabolism and one way this is done is the change of post-translational modifications, especialy phosphorylations.
Phosphorylations are important regulatory mechanism, because they often have a direct effect on the enzyme activity. Phosphorylated residues are mostly serine, threonine and tyrosine and phosphorylation of these amino-acids are considered in this barchelor thesis.
Data about phosphorylations are then stored in the database. The databases differ by the type of data they collect, size, way of annotating and content control.
My thesis deals with the connection between cancer and phosphorylation. The emphasis of this thesis is on bioinformatic approaches to study changes in phosphorylations in cancer cells.
The thesis is a summary of the most important databases. This work also summarizes articles with a bioinformatic approach to analyze data on phosphorylation and tumours.