This bachelor thesis deals with binomial and trinomial models for interest rate option pricing. First, we introduce financial derivatives and their basic properties. Second, the main focus is on basic principles and conditions that are necessary for option pricing. The third part of bachelor thesis is focused on binomial model, we derive the model, calibrate the parameters, introduce Cox-Ross-Rubinstein and Jarrow-Rudd model. Next, we derive trinomial model from binomial model, calibrate the parameters and discuss the advantages. At the end of this part we will evaluate several options using both binomial and trinomial trees. In the next part we present models fro pricing of interest rate options - such as Hull-White and Ho-Lee models. Ho-Lee model will be used for evaluation of an interest rate option