In the present thesis we deal with designing a program to play training games of mariáš (traditional czech card game) against computer. Two three-player versions of this game are considered – volený mariáš and licitovaný mariáš. The program enables to play games in tournament mode simulating the real game as well as in training mode where player can look into opponent's hand, undo moves, replay different variations, get advice from computer and so analyse the game situation. It is possible to extend the program by artificial players and to set up tournament between them. The thesis introduces several implementations of artificial player based on enchanced alfa-beta prunning.