In this paper, a fuzzy logic model (FLM) for the prediction and modeling of daily average solar radiation over Turkey is developed. The daily values of ambient temperature and relative pressure durations as meteorological data are utilized for our FLM. These data for estimating solar radiation are generally obtained easily. Moreover, the calculated daily solar radiation values by using the FLM for selected twelve cities are compared with the actual data and the national database of selected cities. For similarity tests, the most common statistical procedures (MAE, RMSE, MSE, MAPE and R2) are utilized. The fuzzy logic based models show the stable processor different meteorological data introduced to the operation for modeling of daily average solar radiation.