In this thesis a production of $J/\psi$ meson in $pp$ and heavy-ion collisions was investigated. A comparison between Monte Carlo generator and data by ATLAS experiment at CERN was done. PYTHIA version 8.2 was chosen for the Monte Carlo generator. In the first part, comparisons of several configurations of PYTHIA were used to establish the best matching of the Monte Carlo to the data using collisions with centre-of-mass energy of 7 TeV. Choice of parton distribution functions was found not to be important, while presence or absence of initial and final state radiation were proven to have an important impact on the result. In the second part, correlation of $J/\psi$ meson and the jet production was quantified. Anti-$k_t$ algorithm with $R = 0.4$ was used to reconstruct jets. Pairs of muons were used to identify $J/\psi$ meson candidates. Only less than 10% of $J/\psi$ mesons were found to be associated with jets.