A multi-component reaction (MCR) is a chemical reaction where three or more compounds react to form a single product in one pot. MCRs generate structural complexity in a single step, are usually highly efficient, selective, convergent, and atom-economical. The purpose of this project is to study the microwave effect on multi-component reactions. Application of microwave irradiation in organic reactions leads to many advantages, like great acceleration of reactions, the use of non-corrosive and inexpensive reagents, in addition to the eco-friendly "green chemistry" economical and environmental impacts. We explored a three-component reaction "Click reaction" assisted by microwave irradiation. A series of 1,4-disubstituted 1,2,3-triazoles were successfully prepared from the three component reaction of the corresponding alkyl halides, sodium azide and alkynes. The products were confirmed by using proton NMR analysis. The microwave oven we used in the experiment was the microwave synthesizer Initiator from Biotage company. We found using microwave irradiation accelerated the reaction rate and increased the reaction yields compared to the conventional heating method. This procedure eliminates the need to handle organic azides, as they are generated in situ. In addition, we use water as the solvent, making this “Click reaction” even more user-friendly and safe.