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Crime fighting and gang activity are controversial social issues. To prevent and minimize gang spread in the youth of Puerto Rico, a new mathematical model has been developed. Due to gang membership being treated as an infection, the SIR model (used in infectious disease modeling) by Kermack and McKendrick (1927) was employed to develop the governing differential equations. This new model accounts for the possibility of determining how members of the youth community interact with the infected adult (gang) community using 3 different mixing patterns: proportionate, preferred and like-with-like mixing. The numerical results of the implementation of the three different patterns were studied. Regardless of the mixing pattern, it was found that the greatest reduction of gang infection occurred when parameters such as gang activity, recruitment, conviction and rehab/recidivism rates, were varied in combination. A Graphical User Interface (GUI), integrated with the new gang mathematical model, was also developed that allows users to enter new data and do predictive analysis. (Received September 22, 2017)