**Existing system:**

Developers tend to reuse source code by copy/paste. This form of reuse introduces code clones to software systems. Cloning in games can happen in different levels of granularity. The extreme case is known as Game Clone where the complete project is being cloned, e.g., by making a new independent branch which the original game’s source code constitutes the seed for the new branch. Although it has been more than two decades since research on code clones started, various characteristics of cloning in open source games has not been studied. Therefore, there is no specific evidence on status of cloning e.g., dominant clone type in games.

**Proposed system:**

We have provided an in-depth study of the property of both exact and near-miss code clones in more than twenty open source C, Java and Python games from five categories, including First Person Shooter Games, 3D Game Engines, Chess Games, Role-Playing Games, and Card games. Using a selection of metrics from several different dimensions, we analyze the status of different types of code clones and duplication in those games. Specifically our study shows that (1) the characteristics of code clones in different categories are consistent to the building languages; (2) the average CRFL for most of the games is low, except some C-based games (exact clones), and (3) there are considerable number of inter-games clones in the C games and intra-game clones in Java-based and Python-based games. Our manual evaluation showed that they can be used as the seed to create new libraries related to game development. The result of our study is available online [37] for others to reuse the study. In summary, our research illustrates that cloning happens in intra-game cases as well as inter-games excessively. For example, there exists a large number of Type-1 clones in First Person Shooter games developed using C. This observation concretely shows the necessity of adapting clone management systems for game development. For future work, we plan to analyze code clones in distributed games