Tower Defense is a popular subgenre or real-time strategy, where the player guards an object by building defending towers against raiding enemy units. Current Tower Defense games have, however, closed source code which completely prevents any possibility to extend these games or study their code. Due to this fact the aim of this thesis is to develop a multi-platform framework for development of Tower Defense games together with an illustrative example game created using the framework. Framework supports game objects: towers, units and interactions between them – all scriptable in scripting language LUA. Framework also supports textures, animations, sound effects and game maps created using an available graphical editor. User interface is designed using declarative language XAML. In the result we fulfilled the aim of the thesis – using the created framework users can develop Tower Defense games for platforms Windows and Android.