Abstract
This poster looks at some of the basic and necessary steps in designing a video game and implementing these designs using Bethesda’s G.E.C.K (The Garden of Eden Creation Kit) tool. This very tool is what was used to create Bethesda’s hit game Fallout 3. With this tool one may edit and create game content either with assets from the original game or assets that were created by the user in which Fallout 3 may then use in the game itself.

Introduction
G.E.C.K is a modding tool that immerses the user in a design and development environment capable of teaching and showing some of the processes behind what it takes to make a video game. The basic flow of designing and developing a video game using the G.E.C.K can be broken down into three stages: (1) Pre-Production: Concept Development and Design. (2) Production: Implementation. (3) Post-Production: Testing.

Pre-Production
- Concept Development
  - Concept game idea is picked and built upon to create a game outline.
  - Outline will serve as the basis to what the game or mod will contain and what the overall objective is.
  - Special considerations to the games development must be considered as anything made within the G.E.C.K must be used with Fallout 3.
- Design
  - Decide how to implement the concepts that were conceived in the previous step.
  - Record all quests that will be in the game and draw their flowcharts for clarity and later implementation.
  - Any and all enemy, monster, and regular NPC’s should be decided upon and what purposes they will serve within the game including characteristics, dialog, locations within the game space, and what role in any quests they have if applicable.
  - Anything miscellaneous such as rewards and secret areas within the game should be taken into account so that it may be incorporated properly.

Production
- Implementation
  - Setting up the layout for the game is done using kits that are provided by the original game which interlock together to form the layout of the game.
  - Cluttering the layout with any of the thousands of objects in Fallout 3.
  - Navmeshes allow for strict control over NPC movements and cover usage.
  - Complete customization of NPC’s AI and traits through the use of packages and menu options.
  - Lighting, particle effects, color shifts, and light emittance scaling all done with a few simple clicks.
- Room markers and portals enforce game optimization by rendering only what the player sees rather than render the entire scene.
- Simple scripting language to allow for in game data and variables to be dynamically changed.
- Quests are triggered via scripts and transition further by means of Boolean expressions and/or scripts which are handled all within one window.

Post-Production
- Testing
  - Check NPC’s behavior and speech responses.
  - Test all quests to see that they trigger and transition forward correctly.
  - Look for any irregularities within the layout of the game such as kit pieces snapped incorrectly or improper lighting.

Results
- Stages in development can and should be revisited as many time as necessary to further polish the game (See Figure 1.)
- All Fallout 3 assets are accessible for reuse within the G.E.C.K so there is no need to create or search.

References

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