

Computer Game Design & Development

Topic 6: Game Software Development Tools & Technology

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Objectives

- Know **software tools** for developing games
- Understand the trend in **game tool development** and **technology**



Game Software Tools

- Many tools are available in the market nowadays for passionate developers to create their own games.
- Every software tools has its advantages and disadvantages, and is all depends on the developer's choice, game genre and familiarity.
- The tools also may vary according to its quality, stability and price (if is not for free!).
- Example of game software tools (main and supporting tools) in assisting game development process are depicted in Figure 1.

(The listings are only a sample of software tools and many other existing softwares for developers to choose according to their preferences).





Figure 1: Game Software Development Tools

3-D Modeling Packages

Examples:

- Maya (www.aliaswavefront.com):
 - One of the legacy tools in developing 3D games
 - Some edition is free on the site
- 3ds Max (www.discreet.com):
 - One of the legacy tools in developing 3D games
 - Very powerful game software tool and used by many developers
- Blender (<http://www.blender.org/>) :
 - free and open source 3D animation suite
 - supports 3D pipeline—modeling, rigging, animation, simulation, rendering, compositing and motion tracking, even video editing and game creation.

2-D Game Engines

Examples:

- GameMaker(<http://game-maker.en.softonic.com/>):
 - a cross-platform video game using drag and drop or a scripting language known as Game Maker Language(GML)
 - Require less programming knowledge
- FlashPunk (<http://useflashpunk.net/>):
 - 2D Flash game
 - Fast and clean prototype creation
- Stencyl (<http://www.stencyl.com/>):
 - to create 2D video games for computers, mobile devices, and the web
- Construct 2(<https://www.scirra.com/construct2>):
 - HTML5 game creator
 - Require no coding to develop 2D games

Art Tools

Useful for supporting game art asset

Examples:

- Adobe Photoshop (www.adobe.com):
 - Has standby texture creation package
- Adobe Illustrator (www.adobe.com)
- Flash (www.macromedia.com):
 - Can be used for game interface design
- Painter 2015 (www.corel.com):
 - One of the world's leading digital art software
 - Good for texture detailing



Level Editing

Useful for creating levels and missions in a game

Examples:

- Unreal Engine 3 (www.epicgames.com):
- Serious Editor for Serious Sam (www.croteam.com):
 - Free editor included
- The Warcraft 3 editor (www.blizzard.com):
 - Comes together with the game
 - Player can get the feel of constructing level by themselves



Middleware

lies between development tools and game hardware

- Examples
- Renderware (www.renderware.com):



Production Tools

Useful in supporting game development in many ways
e.g. documentation or presentation

- Microsoft PowerPoint
(www.microsoft.com/office/ppowerpoint/default.asp/):
 - For game design presentation purpose
- NXN Alienbrain (www.nxn-software.com):
 - To help track large volumes of asset creation
 - To edit workflow
- Microsoft Project
(www.microsoft.com/office/project/default.asp/):
 - Depict project task in organized manner

Sound Editing Tools

Helps to define game experience equivalent to visuals

Examples:

- Sound Forge (www.sonicfoundry.com):
 - Useful in game design role
- SoundMAX (www.audioforgames.com):
 - assist in broadening the audio horizon

Motion Tracking

Part of game development component

Examples:

- House of Moves (www.moves.com):
- MoCap (<http://www.xsens.com/tags/motion-capture/>):
 - digitally record human movements
 - Can be mapped to other 3D software
- GestureTek (<http://www.gesturetek.com>):
 - gestural touch-free user interface for any platform or environment e.g. PC, Consoles or mobile devices

Mobile Gaming

In thing game platform- more developers are paying attention to Android and iOS platforms

- Stencyl (<http://www.stencyl.com/>)
- Unity (<http://unity3d.com/unity/2d-3d>):
 - cross-platform game engine
 - Suitable for 2D or 3D game development for web plugins and mobile devices
- Marmalade SDK (www.madewithmarmalade.com):
 - cross-platform C++ games
 - Less coding required
 - Cater with HTML5 to speed up web development
- Project Anarchy (<http://www.projectanarchy.com/>):
 - It is the first specially made package for mobile game developers

The Trend in Game Development

- The technological advances has given a big impact on designing game interface and its development.
- Game developer must face the challenges and adapt to the rapidly changing platform or techniques.
- Game increasingly immerse and become more interactive entertainment for all walks of life.

Innovation in Technology

- Development of alternatives to standard controllers
 - Gesture sensors become new control mechanisms e.g. motion sensing, eye tracking, facial recognition
 - Mouse/keyboard combination control mechanisms
 - Touchscreens especially for smartphone or tablet
 - Speech or voice recognition e.g. Mass Effect 3 which is using the voice commands for one of its control mechanisms.

- “ We will see more information displayed directly on the environment or character – similar to the racing game genre where damage to vehicles is shown in the form of scraps, dents, and broken parts.”

- Tim Donley (Development Director, Vigil Games)

SUMMARY

- There are many game software development tools for game developers to select based on their game genre or preferences
- The technology advancement may have a direct impact on game interface design and development



References

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