

Game Making Tools

We recommend approaching genre-specific game engine first if it fits your game vision. If you plan on creating a first-person walking simulator, or already know programming, general purpose 3D game engines are recommended as well. Otherwise, we recommend checking the general purpose 2D game engines, as they tend to be more beginner friendly.

Note: if there is no price listed next to a tool, then there's a free version. Also, if there is a Steam option, we recommend downloading/purchasing from the popular client, as it keeps the program up-to-date.

Text Adventure

- Twine - twinery.org (open-source!)
 - Tutorials - youtu.be/Wk6owRe6xho

2D Exploration

- Bitsy - ledoux.itch.io/bitsy
 - Tutorials - clairemorleyart.com/a-bitsy-tutorial

Visual Novel

- Ren'py - renpy.org (open-source!)
 - Tutorials - youtu.be/G9o8gHrVCik

Grid-Based Puzzle

- Puzzlescript - puzzlescript.net
 - Tutorials - puzzlescript.net/Documentation/rules101.html

Point & Click Adventure

- Adventure Game Studio - adventuregamestudio.co.uk (open-source!)
 - Tutorials - youtu.be/1MI_DR76CI4

Old-school, Turn-based JRPG

- RPG Maker MV (\$80) - rpgmakerweb.com/products/programs (also on Steam!)
 - Tutorials - bit.ly/2xSJVTH

General Purpose, 2D

- Construct 2 & 3 - "scirra.com/construct2" & "editor.construct.net" respectively
 - Tutorials - "bit.ly/2R1NfEQ" & "bit.ly/2N4i0pt" respectively
- GameMaker Studio 2 - yoyogames.com/gamemaker
 - Tutorials - yoyogames.com/learn
- GDevelop - gdevelop-app.com (open-source!)
 - Tutorials - wiki.compilgames.net/doku.php/gdevelop5/tutorials
- Scratch - scratch.mit.edu (open-source!)
 - Tutorials - scratch.mit.edu/tips

General Purpose, 3D

- Unity - unity3d.com
 - Tutorials - youtu.be/dawXz9bbpYg
- Godot 3 - godotengine.org (open-source, and also on Steam!)
 - Tutorials - youtu.be/TFZDeYs_gEI
- Unreal 4 - unrealengine.com
 - Tutorials - academy.unrealengine.com

Royalty-free Resources

Most game engines specialize in importing and connecting multiple media files to a cohesive whole; they're not very good at making art assets themselves. The list below provides repositories of free assets to add into your game, thus saving you a ton of time!

Note: any notes indicating registration is necessary means the site requires the user to create an account to access its resources.

- OpenGameArt.org
 - 2D, 3D art, sound effects, music
- Kenney Assets - kenney.nl
 - 2D, 3D art, sound effects
- Game-icons.net - game-icons.net
 - 2D user interface art
- Wikimedia Commons - commons.wikimedia.org
 - 2D, 3D art, sound effects, music
- Pixabay - pixabay.com (registration necessary)
 - 2D art
- MorgueFile - morguefile.com
 - 2D art
- Google Poly - poly.google.com
 - Low-poly 3D models
- Mixamo - mixamo.com (registration necessary)
 - 3D humanoid animations
- Autodesk Character Generator - charactergenerator.autodesk.com (registration necessary)
 - 3D humanoid character generator
- Freesound - freesound.org (registration necessary)
 - Sound effects, music
- Sample Focus - samplefocus.com (registration necessary)
 - Sound effects
- Zapsplat - zapsplat.com (registration necessary)
 - Sound effects
- Youtube Audio Library - youtube.com/audiolibrary/music
 - Sound effects, music
- Unity Standard Assets - bit.ly/2QdKnU1 (registration necessary)
 - Unity-specific scripts, including first-person controller

Music

- Incompetech - incompetech.com
- Bensound - bensound.com
- NoSoapRadio.us - facebook.com/freegamemusic
- Purple Planet Music - purple-planet.com
- Dig CC Mixer - dig.ccmixer.org

Digital Art & Media Tools

Sometimes, the royalty-free resources above is simply not enough for your game. You need to make your custom graphics and audio!

Note: if there is no price listed next to a tool, then there's a free version.

2D Raster Art (Desktop)

- Krita - krita.org/en/homepage (open-source!)
 - Tutorials - youtu.be/RpSnxwY1be0
- Paint.net - getpaint.net
 - Tutorials - youtu.be/fsL935GOVMM
- MyPaint - mypaint.org (open-source!)
- GIMP - gimp.org (open-source!)
 - Tutorials - gimp.org/tutorials

2D Raster Art (Tablets)

- Autodesk SketchBook - sketchbook.com
- Procreate (\$10) - procreate.art
- ArtRage - artrage.com

2D Pixel Art

- Piskel - piskelapp.com (open-source!)
 - Tutorials - youtu.be/VMkvVmAQBd0
- Aseprite (\$15) - aseprite.org
 - Tutorials - youtu.be/Md6W79jtLJM

2D Vector Art

- Inkscape - inkscape.org (open-source!)

3D Art

- Blender - blender.org (open-source, and also on Steam!)
 - Tutorials - youtu.be/MF1qEhBSfq4
- Autodesk Maya (\$1,545/year) - autodesk.com/products/maya

3D Voxel Art (think, Minecraft-like graphics)

- MagicaVoxel - ephtracy.github.io (open-source!)
 - Tutorials - youtu.be/Wqq-DDqQK7Q
- Goxel - guillaumechereau.github.io/goxel (open-source!)

3D Character Generator

- Autodesk Character Generator - charactergenerator.autodesk.com
- MakeHuman - makehumancommunity.org (open-source!)
- VRoid Studio - vroid.com/studio

3D Photogrammetry

- Meshroom - alicevision.org/#meshroom (open-source!)
- Regard3D - regard3d.org (open-source!)
- 3DF Zephyr Free - 3dflow.net/3df-zephyr-free

Sound Effects Generator

- BFXR - bfxr.net (open-source!)
- LabChirp - labbed.net/software/labchirp
- ChipTone - sfbgames.com/chiptone
- Audacity - audacityteam.org (open-source, for recording and editing audio files)
 - Tutorials - youtu.be/xl-WDjWrTtk

Music Composer (aka Digital Audio Workstation, or DAW)

- Beepbox - beepbox.co (open-source!)
 - Tutorials - youtu.be/JVvgkRk6Tf4?t=34m50s
- GarageBand - apple.com/mac/garageband (Mac and iOS, only)
 - Tutorials - youtu.be/hQ4ylijK4NQ
- Acid Pro Express - acid-xpress.en.softonic.com
- LMMS - lmms.io (open-source!)
 - Tutorials - youtu.be/TrMTIpeSw8Y
- Tracktion T7 - tracktion.com/products/t7-daw
 - Tutorials - tracktion.com/training/videos
- Reaper (\$60) - reaper.fm
 - Tutorials - reaper.fm/videos.php
- FL Studio (\$100) - image-line.com/flstudio
 - Tutorials - youtu.be/RQDvnfleST0

Project Management Tools

Tools to keep your plans and ideas organized.

Note: if there is no price listed next to a tool, then there's a free version.

Documentation

- Google Docs - docs.google.com
- Microsoft Word (\$100/year) - products.office.com
- LibreOffice's Writer - libreoffice.org
- Apple's Pages - apple.com/pages (Mac and iOS-only)
- TiddlyWiki - tiddlywiki.com

Task Management

Some quick checklist websites to keep track of what you need to do next for your project.

- Trello - trello.com
- Workflowy - workflowy.com
- Notion.so
- Google Tasks - mail.google.com/tasks/canvas
- Microsoft To-Do - todo.microsoft.com
- Remember the Milk - rememberthemilk.com

Backups in Cloud Storage & Version Control Repositories

It's dangerous to go out there! Keep a backup with these tools...I mean, take this!

Note: the last two are a little more advanced. Check this tutorial for more details: youtu.be/iMPBusYxyms

- Google Drive - google.com/drive/download
- Dropbox - dropbox.com
- OneDrive - onedrive.live.com
- GitHub - github.com
- BitBucket - bitbucket.com

Version Control Clients

Apps below interface with GitHub or BitBucket; check this tutorial for more details: youtu.be/iMPBusYxyms

- TortoiseGit - tortoisegit.org (open-source!)
- GitHub Desktop - desktop.github.com (registration necessary)
- SourceTree - sourcetreeapp.com (registration necessary)

Animated GIF Recorder

Useful tools to record and share an animation of your progress to social media (totally optional)!

- ScreenToGif - screentogif.com
- GIPHY Capture - giphy.com/apps/giphycapture (Mac-only)
- ShareX - getsharex.com (open-source, and also on Steam!)

Mentorships, Talks, and Lessons

TVGS conducts a lot of educational events to help you learn making your game!

Progress Report Talks

- Oct 19 - Project Management
- Oct 26 - Why You Belong in Tech
- Nov 2 - Diversity and Representation
- Nov 9 - Quality Assurance
- Nov 16 - Stress Management and Imposter Syndrome

Orbit Mentorship & TVGS Events

- Oct 15 - TVGS Community Night
 - Feel free to showcase your game to TVGS community here!
- Oct 19 - Beginner Game Design (held every Saturday)
 - Covers Construct 2 & 3, Ren'py, and Twine.
- Oct 19 - XR Orbit
 - Covers virtual reality (VR), augmented reality (AR), and mixed reality (MR).
- Oct 25 - Interactive Showcase @ The Arts Center
 - Feel free to showcase your game to the Troy public here!
- Oct 26 - 3D Game Design
 - Covers Unity, Godot 3, C#, and coding.
- Nov 2 - Digital Storytelling
 - Covers Ren'py, Twine, and Bitsy.
- Nov 14 - Lesson Night: Lines that Lie
 - Covers Construct 2 & 3, Ren'py, and Twine.
- Nov 19 - XR Orbit
 - Covers Construct 2 & 3, Ren'py, and Twine.
- Nov 19 - TVGS Community Night
 - Feel free to showcase your game to TVGS community here!
- Nov 20 - IGDA Albany
 - Professional talk on the game industry (PUBG Madglory, Saratoga Springs).
 - Topic: machine learning & game design.
- Nov 21 - TVGS Community Night
 - Feel free to showcase your game to TVGS community here!

Coworking Equipments

- Oculus Rift
- Wacom Intuos Pro drawing tablet
- Few microphones
- Mac mini (for Garageband and iOS development)
- Couple laptops and development computers
- Game console capture card
- Game controllers
- Extra monitors

Online Resources

- Past TVGS Lesson Night materials - techvalleygamespace.com/learn
- Sorting Hat, a site providing personalized game making resources - sortingh.at

Closing Ceremony Preparations

Each participant will be presenting their own game for about 5-10 minutes during the closing ceremony (November 23rd). It is recommended that, to reduce accidents, the gameplay of your project is recorded in a video. Here are some tools below to setup your presentation.

Note: if there is no price listed next to a tool, then there's a free version.

Presentation

- Microsoft Powerpoint (\$100/year) - products.office.com
- Google Slides - docs.google.com/presentation
- LibreOffice's Impress - libreoffice.org
- Apple's Keynote - apple.com/keynote (Mac and iOS-only)
- Prezi - prezi.com

Screen Recording

- Xbox (Pre-installed Windows 10 App) - xbox.com/en-US/xbox-app
- OBS Studio - obsproject.com
- Bandicam (\$40) - bandicam.com

Video Editing

- iMovie - apple.com/imovie (Mac-only)
- Blender - blender.org (open-source!)
- Openshot - openshot.org (open-source!)

Publishing Sites

- Itch.io - itch.io
 - Web-portal and download.
 - Allows disabling comments.
 - Game can be marked for sale or accepting donations.
- GameJolt - gamejolt.com
 - Web-portal and download.
 - Does *not* allow disabling comments.
 - Game can be marked for sale or on ad revenue.
- Indiedb - indiedb.com
 - Download-only.
 - Does *not* allow disabling comments.
 - No form of income.