**Practical No. 01**

**Aim:** Identify any open source software and create detail report about it.



**Blender**

**Idea:** The [Dutch](https://en.wikipedia.org/wiki/Netherlands) animation studio [Neo Geo](https://en.wikipedia.org/w/index.php?title=Neo_Geo_(animation_studio)&action=edit&redlink=1) developed Blender as an in-house application in January 1995, with the primary author being software developer [Ton Roosendaal](https://en.wikipedia.org/wiki/Ton_Roosendaal). The name Blender was inspired by a song by [Yello](https://en.wikipedia.org/wiki/Yello" \o "Yello), from the album [Baby](https://en.wikipedia.org/wiki/Baby_(Yello_album)).[[6]](https://en.wikipedia.org/wiki/Blender_(software)#cite_note-6) When Neo Geo was acquired by another company, Ton Roosendaal and Frank van Beek founded [Not a Number Technologies](https://en.wikipedia.org/w/index.php?title=Not_a_Number_Technologies&action=edit&redlink=1) (NaN) in June 1998 to further develop Blender, initially distributing it as [shareware](https://en.wikipedia.org/wiki/Shareware) until NaN went bankrupt in 2002.

**Features:**

a**.** [Python](https://en.wikipedia.org/wiki/Python_(programming_language)) scripting for tool creation and prototyping, game logic, importing/exporting from other formats, task automation and custom tools.

**b.** Support for a variety of geometric primitives, including [polygon meshes](https://en.wikipedia.org/wiki/Polygon_mesh), fast [subdivision surface](https://en.wikipedia.org/wiki/Subdivision_surface) modeling, [Bezier curves](https://en.wikipedia.org/wiki/Bezier_curve), [NURBS surfaces](https://en.wikipedia.org/wiki/Nonuniform_rational_B-spline), [metaballs](https://en.wikipedia.org/wiki/Metaballs" \o "Metaballs), [icospheres](https://en.wikipedia.org/wiki/Icosphere" \o "Icosphere), multi-res [digital sculpting](https://en.wikipedia.org/wiki/Digital_sculpting) (including dynamic topology, maps baking, remeshing, resymetrize, decimation), outline [font](https://en.wikipedia.org/wiki/Font), and a new n-gon modeling system called B-mesh.

**c.** Simulation tools for [soft body dynamics](https://en.wikipedia.org/wiki/Soft_body_dynamics) including mesh [collision detection](https://en.wikipedia.org/wiki/Collision_detection), [LBM](https://en.wikipedia.org/wiki/Lattice_Boltzmann_methods) [fluid dynamics](https://en.wikipedia.org/wiki/Fluid_dynamic), smoke simulation, [Bullet](https://en.wikipedia.org/wiki/Bullet_(software)" \o "Bullet (software))[rigid body dynamics](https://en.wikipedia.org/wiki/Rigid_body_dynamics), ocean generator with waves.

**d.** Blender's features include [3D modeling](https://en.wikipedia.org/wiki/3D_modeling), [UV unwrapping](https://en.wikipedia.org/wiki/UV_mapping), [texturing](https://en.wikipedia.org/wiki/Texture_mapping), [raster graphics editing](https://en.wikipedia.org/wiki/Raster_graphics_editor), [rigging and skinning](https://en.wikipedia.org/wiki/Skeletal_animation), [fluid and smoke simulation](https://en.wikipedia.org/wiki/Fluid_simulation), [particle](https://en.wikipedia.org/wiki/Particle_system) simulation, [soft body](https://en.wikipedia.org/wiki/Soft_body_dynamics)simulation, [sculpting](https://en.wikipedia.org/wiki/Digital_sculpting), [animating](https://en.wikipedia.org/wiki/Computer_animation), [match moving](https://en.wikipedia.org/wiki/Match_moving), [camera tracking](https://en.wikipedia.org/wiki/Camera_tracking), [rendering](https://en.wikipedia.org/wiki/Rendering_(computer_graphics)), motion graphics, [video editing](https://en.wikipedia.org/wiki/Video_editing_software).

**licencing model: a.**  The source code we develop at blender.org is default being licensed as [GNU GPL Version 2 or later](http://download.blender.org/release/GPL-license.txt). Some modules we make are using more permissive licenses, though, for example, the Blender Cycles rendering engine is available as [Apache 2.0](http://opensource.org/licenses/Apache-2.0).

**Intension:** Blender is being actively developed by hundreds of people from all around the world. These include animators, artists, VFX experts, hobbyists, scientists, and much more. All of them are united by an interest to further a completely free and open source 3D creation pipeline. The Blender Foundation supports and facilitates these goals—and employs a small staff for that—but depends fully on the global online community.

**Monetization model:** Blender Foundation welcomes recurring donations to the Development Fund, which enables coders from the community to work for a set period of time on specific objectives. As alternative to recurring payments via PayPal, Gold Sponsors (or better) can donate annually via bank wire or PayPal. In this case we provide donors with an official confirmation of receipt for their records. Please [contact](mailto:foundation@blender.org) the Foundation to learn more.

**Popularity:** In a recent news by i. Materialise I saw that Blender is the most popular 3D modeling software for 3D printing also Personally I have the feeling that it's quite hard to turn a Blender design into a 3D print. Am i missing out on something? Do you guys know any easy tricks/tools to make a Blender model 3D printable?

**Impact:** Over the years, blender game engine has improved, blender can be used alongside other software's like unity to build really cool games. You can build your 3d models directly on blender and import to Unity. But also Insufficient controller cache: Storage controllers are configured with specific amounts of cache that help give breathing room and some level of workspace for incoming/outgoing data.