

NPC Engineer

Instruction Manual

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Introduction

NPC Engineer is a Windows application designed to simplify the process of getting NPCs (monsters!) into Fantasy Grounds (www.fantasygrounds.com). You can build NPCs from scratch using the various tabs on the main screen, but for many the primary function will be to import the NPC's statblock from a variety of sources.

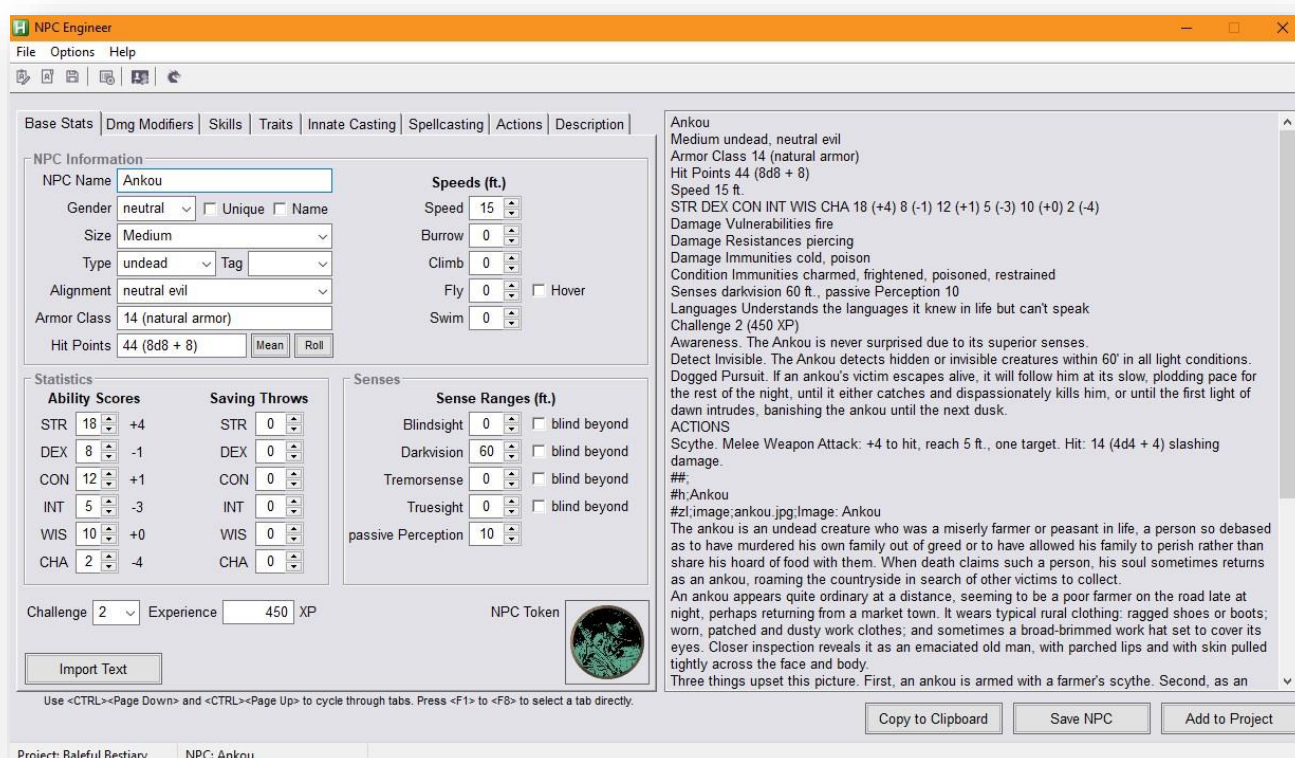
Once you have the NPC fully detailed in NPC Engineer, you can output it in a format that is easily parsed into Fantasy Grounds. With time, NPC Engineer will have its own parsing function.

You may also save your NPC in a native NPC format. This allows you to reload and continue to edit the NPC at a future date. You can use the menu to save as XML or text format if you so desire, although NPC Engineer will not reload these formats. They are provided for convenience.

Navigation

- <TAB> and <SHIFT><TAB> cycle forward and back through the input fields on a page.
- <CTRL><Page Down> and <CTRL><Page Up> cycle through the tabs.
- <F1> to <F8> select the corresponding tab directly.

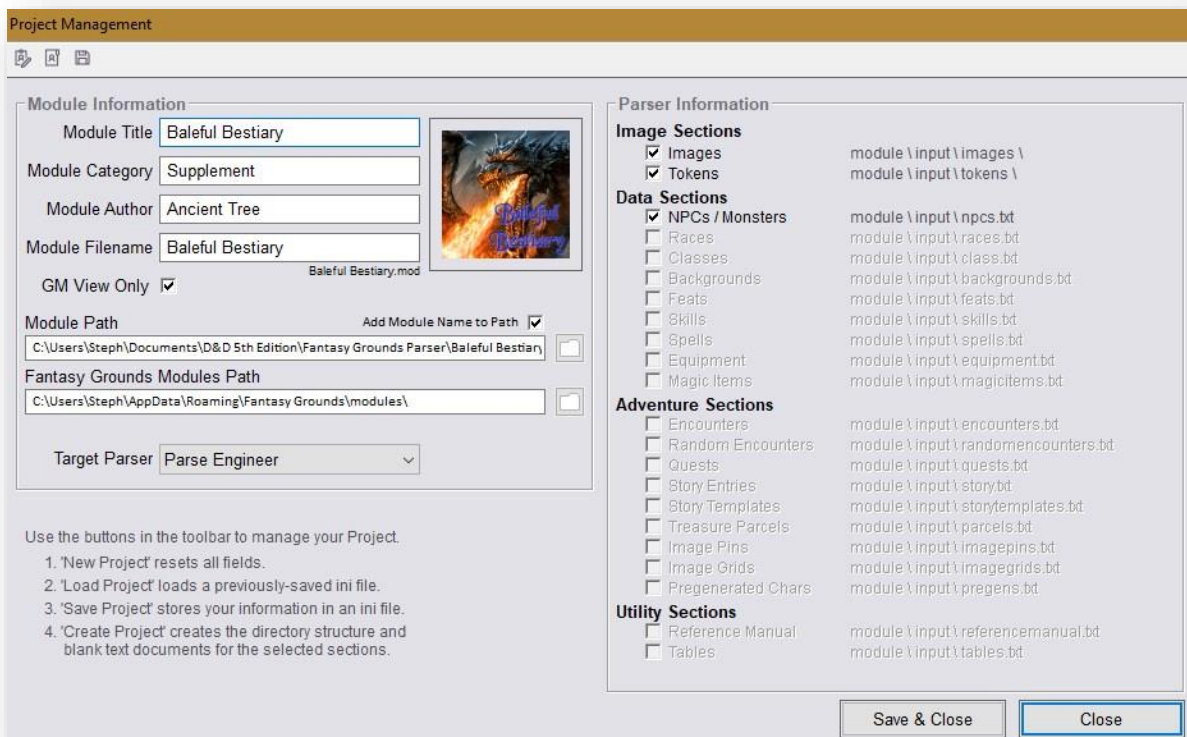
Tooltips are used extensively throughout NPC Engineer, and this should make it clear what each function is for. The menu system gives access to many commands not represented on the UI, and the toolbar keeps the most commonly used commands at your fingertips. A status bar along the bottom displays useful information at all times too.



Pressing Ctrl-J in any text box will strip extra linefeeds from the text. This is useful when information has been pasted in from a pdf source.

Project Management

Unless you intend saving a single NPC in XML format, you will need to set up a Project. Select 'manage project' from the file menu or button bar of the main screen. This will open the Project Management window.



The toolbar across the top of this window has 3 options – **New Project**, **Load Project**, and **Save Project**. The fields to the top and left allow you to enter a title for your project, along with the author. There are also fields for category (*Core*, *Supplement*, *Adventure*, *Bestiary* are suggestions for values) and a filename for the final *.mod file. This can be useful if the module title has characters that aren't suitable for a Windows filename. In many cases, it is fine to copy the module title in here as well.

You can click on the box to the right of this to choose a thumbnail for your module. This should be a PNG file, and Fantasy Grounds documentation suggests 100 x 100 pixels. Larger images appear to work fine, though. This image can be anywhere on your drive – it will be copied to the correct place and renamed as thumbnail.png when you click 'save project'.

Below this you can set the module to be for the GM's use only, or uncheck for open access by your players.

You can set the module's path on your computer, either by typing it in or clicking on the button to the right of the box. You can also add the module's name to the path – useful if you are creating a new project.

The Fantasy Grounds path should be set automatically from the computer's registry – if it is blank or wrong, you'll have to enter it or use the button to navigate to it as above.

The final option here is to select your target parser, as each has slightly different syntax. The options are Project: Par5e, FG 5E Parser, and NPC Engineer's own parser Parse Engineer. This is set by default and will offer the most seamless parsing experience as NPC Engineer controls all aspects of it.

The right side of this window allows you to set the sections that will be included in your module. For now, NPC Engineer will focus on NPCs (hence the name!) and so most options are disabled. When 'Save Project' is clicked, the directory structure required by parsers is created, along with the text file listed for the section.

Clicking 'Save and Close' at the bottom right will create your project (if required), save any changes, and return you to the main NPC Engineer window.

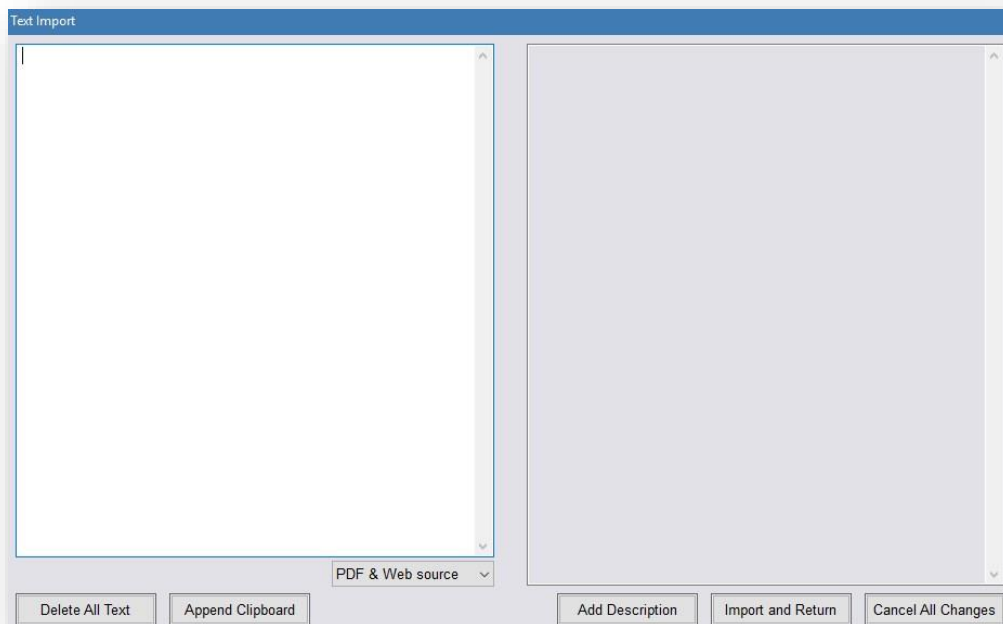
Entering NPCs

There are two ways to enter an NPC – Import, or generate by hand.

Import Text

You can launch the 'import text' module in three ways:

- Use the button on the main screen (bottom left of 'base stats' tab);
- Use the button on the main screen toolbar;
- Use the File menu option.



This opens a window that will allow you to build up an input file from PDFs, the web, etc. Use 'Append Clipboard' to paste the contents of the clipboard to the left-hand window. Source material may take several 'chunks' to copy properly. Copying and parsing from a scanned PDF needs a lot of care, and/or patience, to ensure you get all the text you need and no extra text from the page. This is an issue when there are column- or page-breaks, or text box callouts on the page. Please note – NPC Engineer empties the clipboard when you append it (either using the button or using <CTRL><V>) to avoid issues caused by 'double-pasting'.

The dropdown list beneath the left-hand window allows you to select the source material to ensure a seamless import. You should stick with the default 'PDF & Web source' unless you know for sure you are transcribing from one of the other sources. More information about each source can be found in **Appendix 1**. You can select this before appending text or after.

As you add text, the right-hand window will show the interpreted text. Many standard character recognition issues are caught and corrected automatically, and the input file is chopped up to put the correct values into the correct variables. If errors creep through, you can edit the information in the left-hand box.

When you return from this window using 'import and return', all your data should be in the correct place on each tab, and the output is properly formatted.

The other buttons on this screen should be self-explanatory.

Some Traits and Actions span more than one paragraph. This makes it difficult for NPC Engineer to know when a paragraph mark is a follow-on paragraph, and when it is a new trait/action. I have taken the view that new Traits/Actions tend to have short titles - anything over 4 words is treated as a follow-on paragraph. This is not an optimum solution, and may be revised in future.

Entering NPC Data Field by Field

Base Stats

Most the information on this page should be clear and entry should be self-explanatory. The tooltips should help if there is any confusion.

The screenshot shows the 'Base Stats' tab of the NPC Engineer application. It contains the following fields and sections:

- Base Stats Tab:** The active tab, with other tabs like 'Dmg Modifiers', 'Skills', 'Traits', 'Innate Casting', 'Spellcasting', 'Actions', and 'Description' visible in the background.
- NPC Information:**
 - NPC Name:
 - Gender: ☐ Unique ☐ Name
 - Size:
 - Type: Tag:
 - Alignment:
 - Armor Class:
 - Hit Points:
- Statistics:**
 - Ability Scores:** STR 18 (+4), DEX 8 (-1), CON 12 (+1), INT 5 (-3), WIS 10 (+0), CHA 2 (-4).
 - Saving Throws:** STR 0, DEX 0, CON 0, INT 0, WIS 0, CHA 0.
- Senses:**
 - Sense Ranges (ft.):** Blindsight 0, Darkvision 60, Tremorsense 0, Truesight 0, passive Perception 10.
 - Checkboxes: ☐ blind beyond (for Blindsight, Darkvision, Tremorsense, Truesight), ☐ Hover.
- Challenge/Experience:** Challenge Experience XP
- NPC Token:**

The 'unique' and 'name' toggles, and the 'gender' dropdown, are not standard parts of a D&D 5E character; rather, they will affect the descriptive text.

- Gender should be easily understood. Most generic monsters will be neutral. Bosses and NPCs will likely have a gender. Impressive monsters such as dragons may benefit from having a gender set. Making the NPC male or female will change the gender-specific pronouns appropriately (he/she, him/her, his/her, himself/herself).
- Tagging an NPC as 'unique' capitalises its name.
- Tagging an NPC as a 'name' means that its name is treated as a proper name. Only the first word of the name will be used in the descriptive text (so *Maasq Hammerheart* is referred to as *Maasq* throughout).
- Set both 'unique' and 'name' to capitalise a proper name.

Hit points can be calculated if you have text in the format ' $x dx + x$ '. You can calculate the mean value, such as is used in official D&D 5E products, or calculate the value as if dice were being rolled. You can also double-click on the 'hit points' box to open a new window that will help you create a properly-formatted hit point statement.

The check boxes for 'hover' and 'blind beyond' for senses will only apply to a very small subset of creatures.

- Check the 'hover' box if the creature hovers rather than flies.
- Check the 'blind beyond' box for a sense where the creature is blind beyond the maximum range.

Selecting a Challenge Rating will automatically select the correct experience value for the NPC. You can override this if you wish by typing a new value. Be aware that changing the Challenge Rating will also reset the XP.

You can select a token for the NPC from anywhere on your drive. It should be a PNG file. It will be renamed and copied to the parsing folder when you append the NPC. (The website <http://rolladvantage.com/tokenstamp/> is fantastic for making a token from an image and saving it to your drive as a PNG.)

Damage Modifiers

Use the checkboxes to select the damage types that the NPC is vulnerable, resistant, and/or immune to.

You can use the radio buttons to specify special cases such as magical, nonmagical, silvered or adamantite.

There is no checking for incompatible settings here (such as being both vulnerable and immune to a damage type) so enter values carefully!

The 'Condition Immunity' section at the bottom has all the conditions mentioned in the Monsters Manual and leaves one editable field for your own use.

The screenshot shows the 'Damage Modifiers' tab with the following sections:

- Damage Vulnerabilities:** Checkboxes for Acid, Cold, Fire (checked), Force, Lightning, Necrotic, Poison, Psychic, Radiant, Thunder, Bludgeoning, Piercing, Slashing.
- Damage Resistances:** Checkboxes for Acid, Cold, Fire, Force, Lightning, Necrotic, Poison, Psychic, Radiant, Thunder, Bludgeoning, Piercing, Slashing. Radio buttons for: No special weapon resistances (selected), Resistant to nonmagical weapons, Resistant to nonmagical weapons that aren't silvered, Resistant to nonmagical weapons that aren't adamantite, Resistant to magic weapons.
- Damage Immunities:** Checkboxes for Acid, Cold (checked), Fire, Force, Lightning, Necrotic, Poison (checked), Psychic, Radiant, Thunder, Bludgeoning, Piercing, Slashing. Radio buttons for: No special weapon immunities (selected), Immune to nonmagical weapons, Immune to nonmagical weapons that aren't silvered, Immune to nonmagical weapons that aren't adamantite.
- Condition Immunities:** Checkboxes for Blinded, Charmed (checked), Deafened, Exhaustion, Frightened (checked), Grappled, Incapacitated, Invisible, Paralyzed, Petrified, Poisoned (checked), Prone, Restrained (checked), Stunned, Unconscious, and an 'Other:' text field.

Skills

Skills are chosen using the list to the left of this tab. Type a value for any skill the NPC has, or use the up-down control to change the value. Leave a value of 0 for all skills that the NPC doesn't possess.

The main part of this screen allows the many languages mentioned in official 5E sources to be selected for your NPC. Again, a box entitled 'Other' allows you to add whatever you want to the language list. A set of radio buttons allows you to customise this further for constructs, undead, and mutes.

Finally, on this section you can indicate if your NPC has telepathy, and type in its range (include a unit – either feet (ft.) or miles).

The screenshot shows the 'Skills' tab with the following sections:

- Skill bonuses:** A list of skills with up-down controls: Acrobatics (0), Animal Handling (0), Arcana (0), Athletics (0), Deception (0), History (0), Insight (6), Intimidation (0), Investigation (0), Medicine (0), Nature (0), Perception (6), Performance (0), Persuasion (0), Religion (4), Sleight of Hand (0), Stealth (5), Survival (0).
- Languages spoken:**
 - Standard:** Checkboxes for Common (checked), Dwarvish, Elvish (checked), Giant, Gnomish, Halfling, Orc, Druidic, Thieves' cant, Infernal.
 - Exotic:** Checkboxes for Abyssal, Celestial, Draconic, Deep Speech, Primordial, Sylvan, Undercommon (checked).
 - Monstrous:** Checkboxes for Auran, Aquan, Bullywug, Gith, Gnoll, Grell, Grung, Hook horror, Ice toad, Ignan, Ixitxachitl, Modron, Otyugh, Sahuagin, Slaad, Sphinx, Terran, Thri-kreen, Tlincalli, Troglodyte, Umber hulk, Vegepygmy, Yeti.
 - Other:** A text field for additional languages.
- Other options:** Radio buttons for: No special conditions (selected), NPC speaks no languages, NPC speaks all languages, NPC speaks any languages it knew in life, NPC understands languages selected above but can't speak, NPC understands the languages of its creator but can't speak, NPC understands the languages it knew in life but can't speak, Alternative language text: (text field), and Telepathy (text field).

Traits

Traits are added using the white boxes at the bottom of the screen. Enter a name in the top box and a description of the trait in the bottom box. The trait name will be capitalised automatically, and any non-alphanumeric characters at the start and end will be removed. Traits are sorted alphabetically as they are added.

Note that 'spellcasting' and 'innate spellcasting' traits are dealt with separately in their own tabs; don't enter them here as well.

You can edit or delete an existing trait by selecting the appropriate button just under the trait's name. Editing the trait puts its information back into the two white boxes at the foot of the screen.

There is room for 6 traits on this screen, but adding further traits will still work. Some won't be visible on-screen, though. (It should be noted that, aside from 'spellcasting' and 'innate spellcasting', no existing creature has more than 4 or 5 traits!)

The screenshot shows the 'NPC Traits' tab in the NPC Engineer software. The tab is titled 'NPC Traits' and contains a list of traits for an NPC named 'Ankou'. The traits are: Awareness (The Ankou is never surprised due to its superior senses.), Detect Invisible (The Ankou detects hidden or invisible creatures within 60' in all light conditions.), and Dogged Pursuit (If an ankou's victim escapes alive, it will follow him at its slow, plodding pace for the rest of the night, until it either catches and dispassionately). Below the list are two empty boxes for 'Trait name' and 'Description', and an 'Add Trait to list' button.

Innate Casting

Check the 'include' checkbox to make this section appear in the NPC's statblock.

There is no error check yet - you can cause parsing to fail by entering the wrong text. Error checking will be added later. Ensure your spells are lower case, separated by a comma and space, and that the row doesn't have any extra commas or spaces at the end.

The boxes along the top should be self-explanatory, particularly if you are copying from source material. Not all innate casters have a 'Spell Hit Bonus', however – leave it at zero if this is the case for the NPC you are entering.

Spells should be entered separated by commas followed by a space, just as you would in a sentence.

The screenshot shows the 'Innate Casting' tab in the NPC Engineer software. The tab is titled 'Innate Casting' and contains a section for 'Include Innate Spellcasting' for the NPC. It includes a checkbox 'Include Innate Spellcasting' for NPC, a 'Caster Information' section with 'Spellcasting Ability' (a dropdown menu), 'Spell Save DC' (a numeric input field set to 0), and 'Spell Hit Bonus' (a numeric input field set to 0). Below this is a 'Spell Selection' section with a table for entering spells. The table has two columns: '# of Casts' and 'Spells'. The rows are: At will, 1/day each, 2/day each, 3/day each, 4/day each, and 5/day each.

Spellcasting

Check the 'include' checkbox to make this section appear in the NPC's statblock.

There is no error check yet - you can cause parsing to fail by leaving boxes blank in the upper part or entering the wrong text. Error checking will be added later. Ensure your spells are lower case, separated by a comma and space, and that the row doesn't have any extra commas or spaces at the end.

The data in the upper boxes should be self-explanatory, especially if you are copying from source material. Tooltips will provide further information. The 'Flavor Text' box can be left empty if desired.

For each level of spell, select the number of casts per day. You can then add spells as shown. Spells should be entered separated by commas followed by a space, just as you would in a sentence.

The screenshot shows the 'Spellcasting' tab in the NPC Engineer interface. At the top, there are tabs for 'Base Stats', 'Dmg Modifiers', 'Skills', 'Traits', 'Innate Casting', 'Spellcasting', 'Actions', and 'Description'. The 'Spellcasting' tab is active. Below the tabs, there is a checkbox labeled 'Include 'Spellcasting' section for NPC' which is checked. Under 'Caster Information', there are fields for 'Caster level' (set to 10th), 'Spellcasting Ability' (set to Wisdom), 'Spell Save DC' (set to 14), 'Spell Hit Bonus' (set to 6), and 'Spell Class' (set to cleric). There is also a 'Flavor Text' input box. Below this is the 'Spell Selection' section, which is a table with three columns: 'Spell Level', '# of Casts', and 'Spells'. The table lists spell levels from Cantrips to 9th level. For each level, a dropdown menu for the number of casts is shown, followed by a text box for the spells. The spells listed are: Cantrips (guidance, poison spray, resistance, spare the dying, thaumaturgy), 1st level (animal friendship, cure wounds, detect poison and disease, ray of sickness), 2nd level (lesser restoration, protection from poison, web), 3rd level (conjure animals (2 giant spiders), dispel magic), 4th level (divination, freedom of movement), 5th level (insect plague, mass cure wounds), 6th level (empty), 7th level (empty), 8th level (empty), and 9th level (empty).

Actions

The 'actions' tab is quite busy – there's a lot going on in this section. NPCs need actions to make them interesting! The tab is more of a summary screen for all of the Actions, Reactions, Legendary Actions and Lair Actions an NPC may have. Only the first 5 Actions are shown here – enough for most NPCs – and the first 4 of the other 3 categories. You can delete Actions, but to add new ones or update existing ones, you need to click one of the four buttons on display. Each will open a dedicated window as shown on the next page.

The screenshot shows the 'Actions' tab in the NPC Engineer interface. At the top, there are tabs for 'Base Stats', 'Dmg Modifiers', 'Skills', 'Traits', 'Innate Casting', 'Spellcasting', 'Actions', and 'Description'. The 'Actions' tab is active. Below the tabs, there is a section titled 'Actions' with a list of actions. Each action has a name in a box on the left and a description in a text box on the right. The actions listed are: Shortsword (Melee Weapon Attack: +5 to hit, reach 5 ft., one target. Hit: 6 (1d6+3) piercing damage.), Shortbow (Ranged Weapon Attack: +5 to hit, range 80/320 ft., one target. Hit: 6 (1d6+3) piercing damage.), Dagger (Melee or Ranged Weapon Attack: +5 to hit, reach 5 ft., or range 20/60 ft., one target. Hit: 5 (1d4+3) piercing, magic damage.), and Sneak Attack (Diana has the ability to strike subtly and exploit a foe's distraction. Once per turn, she can deal an extra 1d6 damage to one creature she hits with an attack if she has advantage on the attack roll. The attack). Each action has a delete button (X) to its right. Below the 'Actions' section is an 'Add / Edit Actions' button. At the bottom of the interface, there are three sections: 'Reactions', 'Legendary Actions', and 'Lair Actions'. Each section has a list of boxes for actions, with delete buttons (X) to the right of each box. Below each list is a button labeled 'Reactions', 'Legendary Actions', and 'Lair Actions' respectively.

1: Actions

The left-hand pane of this window lists up to 11 Actions. More can be added; they just won't be displayed. Individual Actions can be deleted here, as they can elsewhere. The Actions will be listed in a certain order: Multiattack first, if present, then Weapon Attacks alphabetically, then other Actions alphabetically. Each Action also has an 'edit' button to allow you to make changes to it. Although this should work with scanned items, be aware that source formatting may prove difficult to parse properly.

The right-hand side of this screen allows you to enter or edit Actions.

The top box allows you to add or remove the Multiattack action with a check box, and the descriptive text for this can be entered in the Description box. Some changes will be made if they are deemed necessary – the first letter will be capitalised, and a full stop added if none is present.

The next box down allows you to enter all the information required to construct a properly formatted Weapon Attack. As you make changes here, the box beside the 'Update' button will change to reflect them. When you are happy with the text you see, click the 'Update' button to add the Weapon Attack.

- Give your weapon Attack a name. This could be as simple as 'Shortsword' or natural weaponry such as 'Claws'.
You can use the dropdown menu to choose a weapon name, and the rest of the fields will populate automatically. However, this requires you to enter the data yourself as there would be copyright issues if NPC Engineer came with the information as part of it. You can use the menu setting '*Options/Manage weapons.json*' to do this. See details on this process in the '*Options*' section of the manual.
- Choose the type of attack – weapon or spell? Melee, range, or both? A javelin can be used for both melee and ranged, for example.
- Does the weapon have the 'magic' property? Check this box.
- 'To Hit' is the weapon's bonus to the 'to hit' dice roll. This should take into account strength/dexterity bonuses and any other bonuses.

- 'Reach' only applies to melee weapons. 5 ft. will be appropriate for many melee weapons, although ones with the **reach** property add 5 ft. to this. Natural weaponry may have a different reach depending on creature size.
- 'Range' only applies to ranged weapons. The first number – normal – is the maximum range for a normal attack. The second value – long – is the maximum range for a long-range attack. It is not possible to attack at a distance greater than this. Attacks at a distance between the two values are made at disadvantage.
- 'Target type' will usually be 'one target'.
- The damage for the weapon is entered next, including the damage type.
- Some weapons add further magical damage (radiant, for example). You can check the box on the final line to allow this, and then choose the damage and type as before.

If your NPC has other Actions that aren't weapon attacks, these can be entered or updated in the bottom section of this window. Again, a dropdown menu allows you to select from a list of Actions, or you can type in the name of the Other Action and its text. However, this requires you to enter the data yourself as there would be copyright issues if NPC Engineer came with the information as part of it. You can use the menu setting 'Options | Manage actions.json' to do this. See details on this process in the 'Options' section of the manual.

2. Reactions

The screenshot shows a software window titled "Add or Edit NPC Reactions". It is divided into two main sections. The left section, titled "Reactions", contains a table with five rows. Each row has a small red 'x' icon in a square on the left and a dropdown arrow on the right. The right section, titled "Add or Edit Reaction", contains a form with a "Reaction" text box and a "Description" text area. Below the form are two buttons: "Update" and "Accept and Close".

The Reactions box should be self-explanatory. Each Reaction is given a name, and a description, and then added using the 'update' button.

3. Legendary Actions

Add or Edit NPC Legendary Actions

Legendary Actions

Options:

New Legendary Action

Action:

Description:

Update

Accept and Close

Legendary actions consist of some text known as Options, followed by a list of possible Legendary Actions that the NPC can have. Consult the Monsters Manual for some examples of how these may work.

4. Lair Actions

Add or Edit NPC Lair Actions

Lair Actions

Options:

Ceiling Collapse

Fissure

Swarm of Insects

Options

On initiative count 20 (losing initiative ties), the dragon takes a lair action for one of the following effects; the dragon can't use the same effect two rounds in a row.

The ceiling collapses above one creature that the dragon can see within 120 feet of it. The creature takes 10 (3d6) bludgeoning damage and is knocked prone and restrained (by

A ten foot-wide, ten foot-long crack opens in the cavern floor where the dragon wishes. Any creature occupying that space must make a successful DC 15 Dexterity saving throw or fall 20

The dragon summons a swarm of insects as if it had cast insect plague, filling a 20-foot radius sphere within 90 feet of the dragon. Creatures that are in the affected space or that enter it

New Lair Action

Action:

Description:

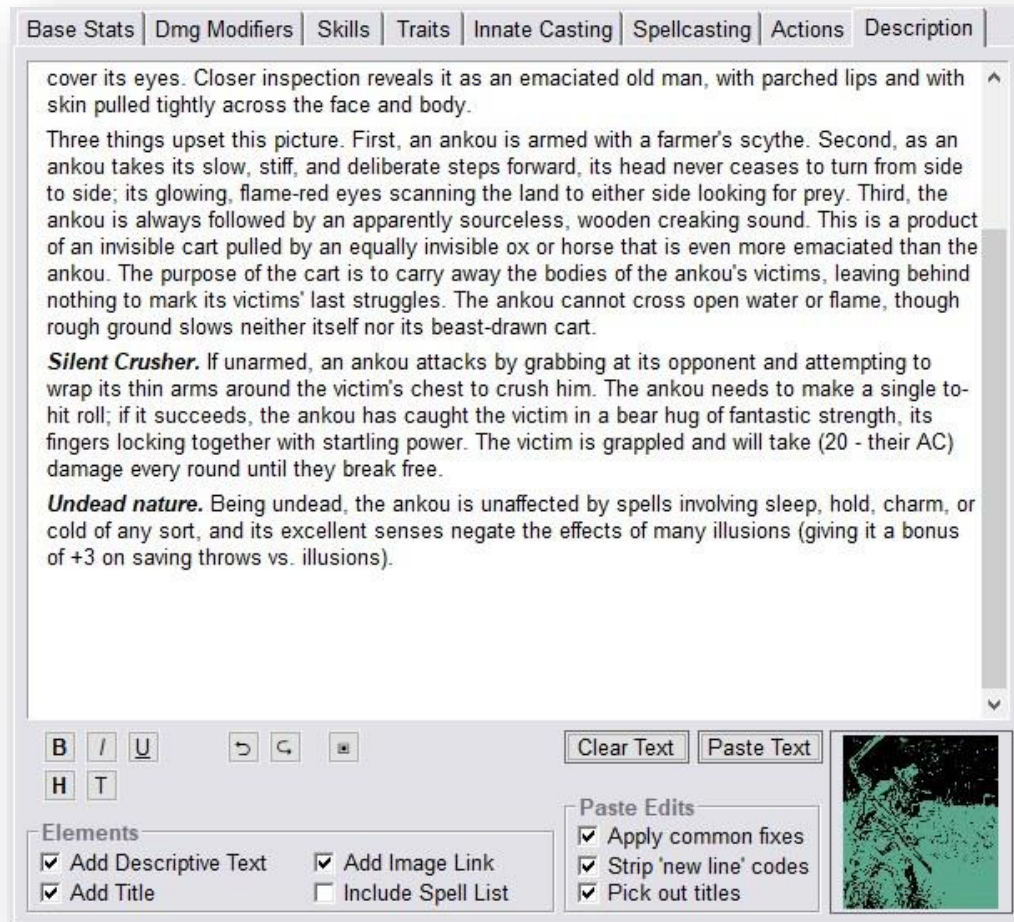
Update

Accept and Close

Lair actions consist of some text known as Options, followed by a list of possible Lair Actions that the NPC can have. Consult the Monsters Manual for some examples of how these may work. If imported, the NPC's Lair Actions will be called 'Lair Action 1' etc. You can rename the Lair Action on the left-hand side.

Description

The 'description' tab allows for importing or typing of descriptive text not contained in the statblock.



Toggle buttons allow you to apply **Bold**, *Italic* and Underlined formatting to highlighted text. Below these, two buttons change between 'heading' (H) and 'body text' (T) for any selected text. To the right, two arrows represent 'undo' and 'redo'. The fifth button on this row allows you to change the background text between white (default) and a colour similar to FG's character box to allow you to judge how your work looks.

You can paste text directly into this box, and various options will happen to it automatically depending on what you choose in the 'Paste Edits' area.

'**Apply common fixes**' allows common edits such as double spaces, ligatures and hard-to-OCR words fixed automatically;

'**Strip 'new line' codes**' allows linefeeds to be stripped to allow proper paragraph format (this applies particularly to PDF sources);

'**Pick out titles**' sees NPC Engineer make a stab at picking out the paragraphs that should have a bold first sentence in Fantasy Grounds. It makes a guess at this by looking for a short first sentence (4 words or less) and so may get some paragraphs wrong. It is easy to correct any it gets wrong.

The toggles in the 'Elements' box allow various options to be automatically added (add text, title, graphic). The default is to add these elements to an NPC. A fourth toggle in the box allows you to add formatted spell blocks in the 'other' tab of Fantasy Grounds too – this may be an easier way to read the spell list at a glance.

You may also add an image to your NPC in the bottom right of this tab. The image must be in JPG format, but it can be anywhere on your drive. It will be renamed and copied to the parsing folder when you append the NPC.

Output Options

The bottom right corner of the main window has three buttons to output the NPC when you are happy with it.

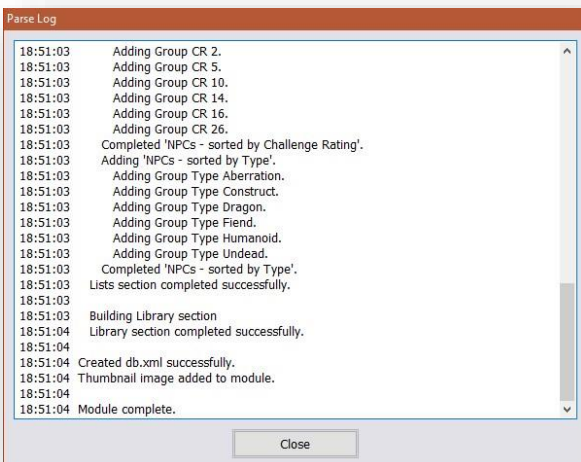
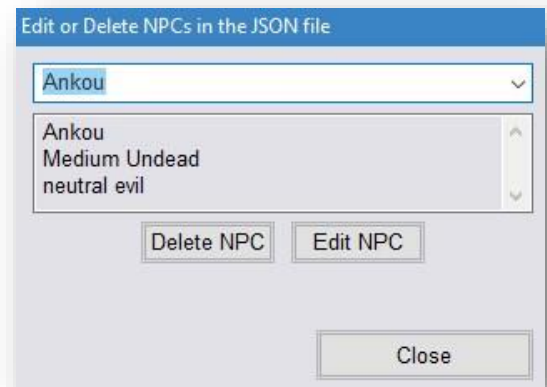
- The first copies the text to the clipboard, ready for pasting into another application.
- The second allows you to save your NPC as a *.npc file for future use with NPC Engineer.
- The third allows you to append the NPC to the npcs.txt file in your Project (or npcs.json in the case of NPC Engineer's own parser), in preparation for parsing. It will also copy the token to the 'tokens' directory & rename it appropriately for your NPC. If you do not have a project open, you will be prompted to create or open a project before proceeding.

If you wish to save the NPC as an XML or text file, use the 'save' options in the File menu.

Parsing Using NPC Engineer

NPC Engineer is part of a planned suite of programs that will feed into their own bespoke parser. This is known as 'Parse Engineer' for consistency. If this is selected as the parser at the project creation stage, some advanced options become available to you. Firstly, the master file used for parsing will be a JSON file – this allows saving, loading, and manipulating to be done on objects rather than text. This should eliminate most parsing errors, although time will tell!

More importantly at this stage, a menu option 'Manage npcs.json' is available in the 'Options' menu. This allows you to select NPCs from your project and delete them or reload them for editing.



You can run a parse by selecting the menu option or clicking on the dragon head icon on the toolbar. This will open a scrolling log that will give you information about what is going on during the parse. Please note that there isn't extensive error checking at this point, and so this output may be considered 'flimsy'.

This will produce a module in your Fantasy Grounds module directory, ready to be loaded and enjoyed.

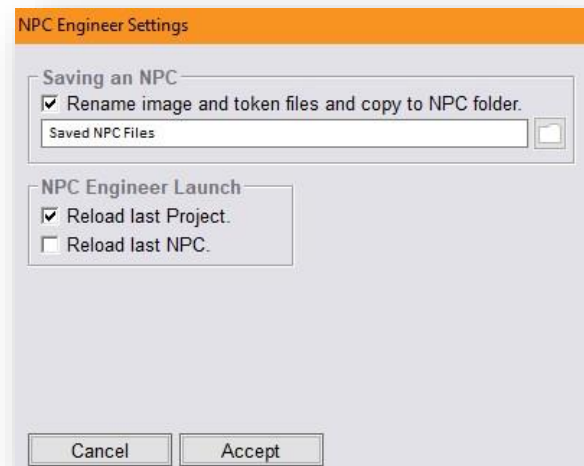
Other NPC Engineer Options

Settings Dialogue

Choosing 'settings' from the Options menu or pressing F11 will open the 'Settings' dialogue shown. This allows you to set default behaviours for the program.

You can set the program to save NPCs to a set folder. In doing this, pressing 'save NPC' will save the NPC with a filename based on its current name, rather than open a 'save NPC' dialogue. It will also copy and rename the NPC's token and image files, keeping all the relevant parts of the NPC together

You can also set NPC Engineer to load the project and/or NPC you were last working on when you shut down.

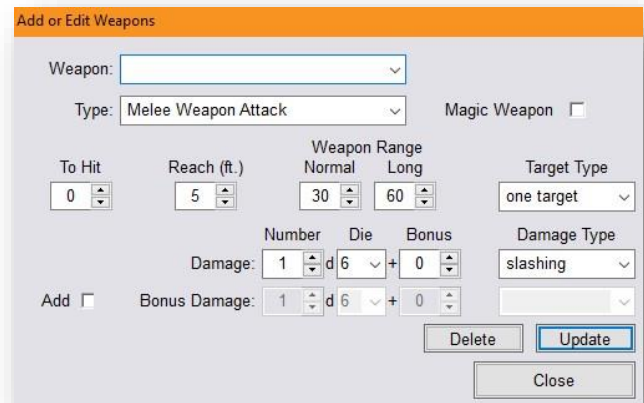


All of the options below can be found in the 'Options' menu of NPC Engineer.

Manage weapons.json

On the 'Actions' window, you can use a dropdown menu to choose a weapon name from a list and the rest of the fields will populate automatically. However, this requires you to have entered the data yourself previously (as there would be copyright issues if NPC Engineer came with the information as part of it).

You can use the menu setting '*Options/Manage weapons.json*' to do this. Some Gaelic weapons are included as examples - a bow (bogha-saighde), a sword (claidheamh) a knife (cuinnsear) and a club (steabhag).



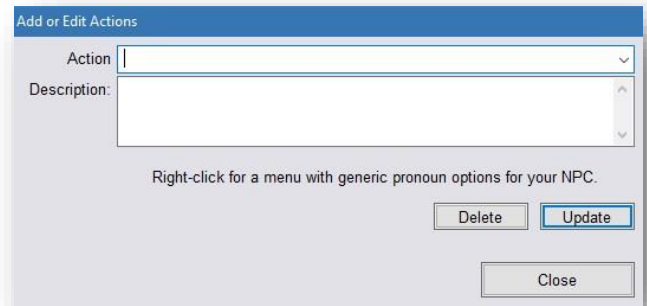
- Give your weapon a name. This could be as simple as 'Shortsword' or natural weaponry such as 'Claws'.
- Choose the type of attack – weapon or spell? Melee, range, or both? A javelin can be used for both melee and ranged, for example. Having said that, it is easier to enter melee and ranged as two separate Actions than to try to combine them in a single Action.
- 'To Hit' is the weapon's bonus to the 'to hit' dice roll. This should take into account strength/dexterity bonuses and any other bonuses.
- 'Reach' only applies to melee weapons. 5 ft. will be appropriate for many melee weapons, although ones with the **reach** property add 5 ft. to this. Natural weaponry may have a different reach depending on creature size.
- 'Range' only applies to ranged weapons. The first number – normal – is the maximum range for a normal attack. The second value – long – is the maximum range for a long-range attack. It is not possible to attack at a distance greater than this. Attacks at a distance between the two values are made at disadvantage.
- 'Target type' will usually be 'one target'.
- The damage for the weapon is entered next, including the damage type.
- Some weapons add further magical damage (radiant, for example). You can check the box on the final line to allow this, and then choose the damage and type as before.

Manage traits.json or actions.json

Choosing either of these options opens a very similar window. In this, you can add Actions/Traits to the dropdown menu elsewhere in the program.

The top box should be the name of the Action/Trait.

The 'Description' box can have text typed into it, or it can be set to take information from the NPC's gender/unique/proper name values when it is selected. To do this, use tags in place of the information you want to be autoreplaced. A right-click context menu gives you all the options. To summarise:



- <NU> Name, with initial capital, for the start of a sentence. This will include 'the ' if it is needed, so you don't need to type this.
- <NL> As above, but all lowercase for body text. The exception is for proper names and unique creatures – these will still be capitalised.
- <GU1> He / She / It will be inserted as needed.
- <GL1> He / She / It will be inserted as needed (lower case).
- <GU2> Him / Her / It will be inserted as needed.
- <GL2> him / her / it will be inserted as needed (lower case).
- <GU3> His / Her / Its will be inserted as needed.
- <GL3> his / her / its will be inserted as needed (lower case).
- <GU4> himself / herself / itself will be inserted as needed (lower case).

Sample Traits/Actions are included to see how these build up. As an example, entering and saving

"<NU> goes berserk if <GL3> teddy bear is stolen"

will become *"The ogre baby goes berserk if its teddy bear is stolen"* or *"Demogorgon goes berserk if his teddy bear is stolen"*.

Software

NPC Engineer is programmed in AutoHotKey v1.1.26 (<https://autohotkey.com>).

Fantasy Grounds (<https://www.fantasygrounds.com>) is a Virtual Tabletop (VTT) environment allowing for many role playing games to be played, including D&D 5E. NPC Engineer is designed to import creatures for the 5E ruleset only.

Credits

Many people helped get NPC Engineer up and running, both on the Fantasy Grounds side and on the programming side. I am deeply indebted to all their expertise. It is no lie to say that NPC Engineer wouldn't exist without it.

Fantasy Grounds

Zacchaeus for his boundless knowledge, endless patience, and encouragement.

KP9911 for his solidarity, hints, tips and humour.

L.R. Ballard and Laerun for their encouragement, bug-catching and feature suggestions.

Talyn for all the help with XML structures.

AutoHotKey Discord server

Runie, Nnnik, Cap'n Odin, Maestrith, Etherlord, EvilC, GeekDude, Delta for all the help with coding – whether that be discussion, teaching me new methods, offering suggestions on my spaghetti code, or offering me actual code snippets that made my task much easier.

Appendix 1: Input Translators

As explained on page 5, there are several options in the input window. These are known as 'input translators', and they correctly format input from widely-available sources to allow NPC Engineer to import them properly. Each one is tailored to a specific source and almost certainly won't work for any other source. The exception to this is the generic 'PDF and Web source' that is preselected at program launch. This section details the sources that have input translators written for them, including where to find the source and how best to capture the text for the NPC.

D&D Beyond

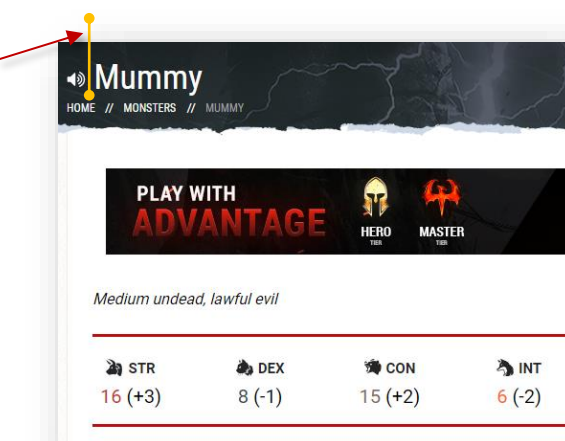
<https://www.dndbeyond.com>

The official D&D 5E site. This contains all the official creatures as well as a large homebrew section.

Select either 'Monster Listing' or 'Browse Homebrew Monster Listing' under the 'Monsters' button to the top right of the site. Choose a monster from the list. Click on it to open it in a new page – don't use the '+' to the right of its name in the listing.

Select from the start of the monster's name – just to the right of the speaker icon – and select all the monster's statblock. The translator will edit out the advertisement and any other extraneous information from the structure of the web page.

You will note that the D&D Beyond website doesn't display the statblock in the standard format. The translator addresses this too.

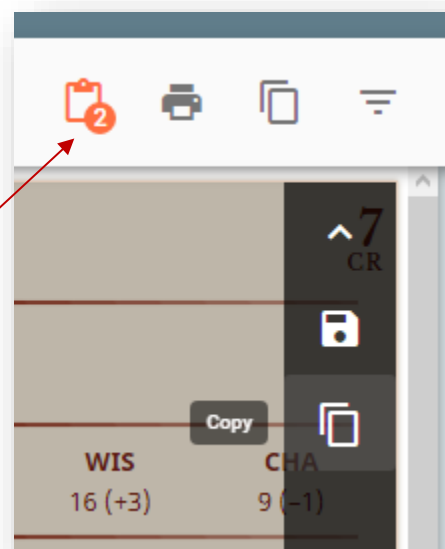


CritterDB

<http://www.critterdb.com>

This is a great homebrew creature resource for 5E. It can feel a little convoluted to capture the text on any creature not displayed on the home page. Follow these instructions:

1. Select the 'view' button on any bestiary.
2. Move the mouse over any creature; select the 'Copy' icon that shows to its right (as shown). This will cause an orange clipboard icon to appear.
3. Click on the clipboard icon.
4. Choose 'expand' for your creature.
5. Now you can highlight the text and use <CTRL><C> to copy it into the clipboard.



Donjon

<http://donjon.bin.sh/5e/monsters/>

The Donjon website contains a list of all official monsters; only those from the SRD have a statblock attached. This may expand to have homebrew content at some point but is mainly included for completeness.

RPG Tinker

<http://rpgtinker.com>

This is an excellent site by Bruno Freitas for producing NPCs on the fly using templates. It doesn't display a size or type for the NPC, so NPC Engineer will tag the NPC as a medium humanoid. If this is not correct, you can change it in the program once the NPC is imported.

D&D Wiki

<https://www.dandwiki.com/wiki/5e—Monsters>

An extensive homebrew site. The NPCs are well laid out here, and the translator only has to do a little work to format items properly.

MS Word table

Some documents found online are in MS Word format. The statblock is wrapped in a table for formatting purposes. This translator removes the formatting and performs some other transformations to correct a **particular** format used in MS Word. It will not necessarily work for all Word tables.