

# Hotend

**Feature Name:** Hotend

**Feature Name in Annotation:** HotEnd

## Source of Information

Domain knowledge, Code comment, Source Code, G-code documentation

## Strategy Used:

Through 3D printer construction, we learned that there are hotends that sit at the down end of extruders. Then we started from the largest and most central logic file MarlinMain.cpp, and browsing through the code comment and source code for whether the comments, variables and method names contain keywords such as “hotend”. Method and variable names related to resetting the position of the hotend and controlling its temperature are also counted as part of the feature. Lastly, we used the G-code to find the code entry points of the feature. According to G-code documentation, G-code M218 is directly related to settings for the Hotend.

**Feature Description:** This feature is mandatory for Marlin, hotends are metals that sit at the down ends of extruders. The extruders are responsible for pushing the materials forward, however it is at the hotend where the materials are heated and squeezed out for printing. Temperature sensors are usually found at the hotends to control the heating process.

**Time spent:** This feature is one of 18 features that were located by manually going through all code files of Marlin using our source code method. It took one person 25 hours to identify all 18 features.

## Feature Characteristics:

Feature Name	LoFC	NoFL	TD	Completely Wrapped by ifdef
Hotend	355	7	16	No

## Ratios of sources (%)

RL	PR	CM	Ifdef	DK	CC	SC	GD
0	0	0	5	50	5	35	5

**RL:** Release Log; **PR:** Pull Request; **CM:** Commit, **Ifdef:** Ifdef Expression; **DK:** Domain Knowledge; **CC:** Code Comment; **SC:** Source Code; **GD:** G-Code Documentation.