Getting Started with SOF for GSoC 2025

1. Understand the Project Requirements

Visit the Sound Open Firmware GSoC 2025 project page to understand the project goals, requirements, and expected outcomes.

2. Set Up Your Development Environment

Because Sound Open Firmware is using Zephyr RTOS, you will need to setup Zephyr development environment.

Follow Build SOF with Zephyr guide in order build SOF firmware.

3. Build Sound Open Firmware

TASK1: Follow Build SOF with Zephyr guide and obtain sof-imx8m.ri firmware corresponding to i.MX8MP platform. Briefly explain the steps done in order to get the firmware.

Next step would to load this on a real platform and test it. But since most likely you wont have a hardware platform at hand lets build the SOF plugin firmware and test it.

4. SOF plugin

Follow **sof/tools/plugin/README.md** instruction from SOF repository.

TASK2: Using README.md file above build the **sof-pipe** daemon and then test aplay and arecord on your Linux machine. Briefly document the output of the commands you have tried.

TASK2b (bonus, for advanced users) Test OpenVino noise supression model with SOF plugin

5. SOF testbench

Follow **sof/tools/testbench/README.md** instructions from SOF repository.

TASK3: Build and execute testbench using instructions from the README above. Briefly document the output of the commands you have tried.

6. Create a SOF Pull Request

TASK4: Find a small issue, spelling error, style error or any thing that you can spot while working for previous tasks and create a Pull request to fix it. For example use ./scripts/checkpatch.pl in order to find a small style warning or error and send a Pull Request to fix it.

Before starting on creating this Pull Request please confirm with the Mentors that the change you are working on is indeed fitted to be merged in the SOF project.

For example:

```
$  ./scripts/checkpatch.pl -f --strict src/ipc/*.c

CHECK: Blank lines aren't necessary after an open brace '{'
#36: FILE: src/ipc/dma-copy.c:36:
+       for (i = 0; i < host_sg->elem_array.count; i++) {
+
```

A small improvement for the code here would be to remove the braches. Create a git commit and then a Pull Request for this. For creating a good commit message read https://cbea.ms/git-commit/
The commit to fix the above checkpatch warning should be as follows:

```
    ipc: dma-copy: Remove unnecesary blank line

    Remove unnecesasry blank line as reported by checkpatch.pl script.
    This makes code more compact.

    Signed-off-by: Daniel Baluta <daniel.baluta@nxp.com>


diff --git a/src/ipc/dma-copy.c b/src/ipc/dma-copy.c
index beac3f3b3..bfad63347 100644
--- a/src/ipc/dma-copy.c
+++ b/src/ipc/dma-copy.c
@@ -33,7 +33,6 @@ static struct dma_sg_elem *sg_get_elem_at(struct dma_sg_config *host_sg,

        /* find host element with host_offset */
        for (i = 0; i < host_sg->elem_array.count; i++) {
-
                host_sg_elem = host_sg->elem_array.elems + i;
```