

GDB Debugger

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1 Setup

To compile a program with debug information we use the flag `-g`

It would look like this:

```
g++ main.cpp -o main -g
```

Now we can run gdb on our executable file

```
gdb ./main
```

Now that we are in the debugger, we can run the command

```
lay next
```

This gives us a view on the source code and a look at the assembly instructions

2 Analysis

We now have the option to run the program using the **run** command. This will run the program until it hits a breakpoint or terminates.

Before running the program, we can establish breakpoints. This pauses the program at a specific points of interest and allows us to perform step-by-step analysis on the code. We can setup break points like this:

```
break function-name
```

or

```
break line_number
```

Once we have established a break point, we can run the program by typing: **run**

Now the program will run and stop at the breakpoint. We can use the **next** command or **n** to execute the next program statement

Note:-

When programs print in gdb, it messes up the layout of the source code

To fix this use the **ref** command