Common mistakes in makefile and Debugging

Before trying with makefile check the guidelines below

- Ensure that the code is free from compile/linking errors with gcc at command line and exe can be generated.
- Ensure that you have added a clean target and its commands are correct and working fine from command line.
- Delete all *.o and executable in ./obj and ./bin .
- Ensure that .c and .h files are in respective directories and there are no .o files in the source directories i.e ./src , ./inc
- Check and ensure that the spelling of all the macros in definition and in substitution are same.
- Ensure that the path in macros for directories are w.r.t to make directory location.
- Ensure that makefile is named as makefile and make is run from make directory.
- Check if the target and dependencies are specified correctly.
- Ensure that -f option is used in clean target.

Use the following hints to fix issue on your own

1. Is the error "Nothing to be done for all"?
   Try run either clean target
   OR
   manually delete the *.o and executable
   OR
   run touch on all source files. Then run make again.

2. Is the error "Missing tab separator….?"
   Edit makefile, before every makerule/command, insert a tab (remove spaces if any used earlier) and try again.

3. Is the code compiling using gcc at commandline and problem with makefile only?
   Issue could be w.r.t to macro substitution i.e incorrect path or incorrect macro name. For this use -n option in makefile and check the command lines for proper macro substitution. This option will show the command lines with macros substituted in the order in which they will be executed (but without executing).

```
make -n  all
```

Pick the line after which there is an error. Check for error. Fix the error, try the command at command line and confirm. On success update makefile, repeat the steps to fix remaining errors.