**GDB Practice session**

Typographical conventions

We use the following conventions in this guide:

vi The name of a specific command or file

file You should replace file with a specific name

(gdb)help quit at the gdb prompt, type the command help quit, then press the <ENTER> key

Exit gdb Output that you see on the screen

**Getting Started**

1. Login into the Linux server with your login Ids. Open two terminals, one to work in gdb prompt and the other to work on the shell.

2. Create a new directory called gdb in your home directory <home>

mkdir gdb

3. Go inside the directory you have created in (2) /<home>/gdb

cd gdb

4. Copy the following files from the path as mentioned by the trainer:

a. gdb\_sample\_pointer\_1\_0.c

b. gdb\_sample\_core\_1\_0.c

c. bugs\_wall.c

d. first\_fit\_bugs.c

e. gdb\_practice\_array.c

5. Although all commands in gdb are full words, you can type any unambiguous prefix. For instance, p instead of print.

6. Use the help command in gdb for a list of topics. Then type help topic for information on a specific topic. help cmd gives help on the command cmd e.g. help print will give information about the print command. For comprehensive coverage of gdb, read the Info pages. At the shell prompt, type info. When info starts, type mgdb<ENTER>.

(Please note that the info command is not present on the server 10.203.161.9)

Compilation

7. Compile the file gdb\_sample\_pointer\_1\_0.c and put the output in the executable file called sample

gcc –o sample –g gdb\_sample\_pointer\_1\_0.c

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Execution with gdb

8. Execute the file sample with gdb

gdb sample

(gdb) r

9. Execute the file again, this time redirecting the output of the program to another file

(gdb) r > output

Quit gdb

(gdb) q

A computer screen shot of a program

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View the Output file

cat output

A screenshot of a computer

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10. To have a look at the source code at any point in time

gdb sample

(gdb) list

By default the number of lines displayed is 10, to change the number of lines to be displayed

(gdb) set listsize 20

(gdb) list

A screenshot of a computer program

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Breakpoints

11. Before executing the program this time, put a breakpoint

(gdb) b main

(gdb) r

Breakpoints can be put using either:

· the function name or

· the line number or

· source file name: line number

Try putting the breakpoint using all the above ways

12. Information of all the set breakpoints can be seen

(gdb) info b

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The first column shows the id of the breakpoint

13. Delete all the breakpoints except the one on function main

(gdb) d id1 id2 …

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14. Now run the program and observe that the execution stops at the first breakpoint that is encountered. Now the control of the program is with gdb and each statement can be executed one at a time using the command:

(gdb) n

Run the n command till the statement before the call to function display is executed

15. Step inside the function display

(gdb) s

16. Let the program continue on its own

(gdb) c

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