Computer Architecture
CS-211

Spring 2017 | Recitation

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Agenda

- Programming Assignment 1
  - Matrix Multiplication
  - Binary Search Tree
- GDB – GNU Debugger

Matrix Multiplication

- In order to multiply two matrices, A and B, the number of columns in A must equal the number of rows in B. Thus, if A is an m x n (row X col) matrix and B is an p x q matrix, n = p.

- Resultant matrix will be m x q

- Help : http://www.math.nyu.edu/~neylon/linalgfall04/project1/dj/propofmatrix.htm

GDB

- Provides extensive facilities for tracing program execution
  - –Step through program line at a time
  - –Monitor / modify internal variables
- You need **to compile** your code with **–g**

```
$ gcc –g foo.c –o foo.o
```

GDB Commands 1

- Use gdb after compiling : $ gdb [executable program name]
- Debug : (gdb) run
- End debugging : (gdb) q or quit
- Observe source code : (gdb) list or list 10
- Change the number of lines : (gdb) set listsize [num]
- Setting breakpoints :
  - (gdb) break [function name]
  - (gdb) break [line num]
- Clearing breakpoints
  - (gdb) clear [function name]
  - (gdb) clear [line num]
  - clearing all breakpoints : (gdb) delete

GDB Commands 2

- Printing variables
  - (gdb) print [variable]
  - (gdb) display [variable]
- Going step by step
  - (gdb) next
- Using GUI
  - gdb –tui [executable file]
- Complete Example
  - https://www.youtube.com/watch?v=Z6zMxp6r4mc

Thanks!

Any questions?