

CS 101 Computer Programming and Utilization

Lecture 21

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Revision

- structures
 - composite types
 - bundles of multiple values
- arrays of structures can be created
- values of structures can be dynamically created
- C style procedural programming:
 - structures, functions
 - values in structure are public
 - primitive values and structures as parameters (input and output)
- object oriented programming
 - member functions
 - classes can hold values as private
 - don't have to pass these values as parameters
- switch statement
 - multi-way branching as opposed to two way branching in if-else
- linking
 - useful in dynamic data structures
 - example of linking structures for linked list
 - pointers used inside structure
 - a structure holds data values and also a pointer to the next structure
 - how to append at the end in a linked list
 - how to insert in the list from front
 - how to delete a node from a list
 - how to locate a node inside a linked list

Random numbers

```
#include <iostream>
```

```
#include <cstdlib>
```

```
#include <ctime>
```

```
using namespace std;
```

```
int main (int argc, char *argv[]) {
```

```
    srand (time(NULL));    // randomize seed
```

```
    cout << random()%100 << endl;
```

```
        // print a random number between 0 and 99
```

```
}
```

Monte Carlo Method

- statistical approach
- use of random no. generator
- we will use a uniform random no. sequence, and compute the value of π
 - Over to demo
 - why It works?

Review of Shell Commands

- `.`
- `..`
- making directories
- present working directory
- changing present working directory
- searching through files

Review of Shell

- environment variables
- removing files
- copying files
- copying directories
- piping on command line

Projects

- Teams
- Statement submissions
- Evaluation Scheme
- Intention and Motivation

Reading C++ Online Pages

- how to go through manual pages
- how to search the information you want
- protocols
 - classes
 - member functions
 - c-style functions