random points can be used to estimate the area of an object (Monte Carlo integration).

structure: custom made variable type with multiple pieces of data

- ex. define 60 element array called "state"

```
struct 
{
    int population;
    double income;
    double area;

    state[60];
}
```

- state[0].population = 12345

assigns first state slot value for population

can use typedef to use new variable type (ex. "census") to define variables like int or double (ex. census country 1001)

"-7" can be used to refer to variables in a structure, used for pointers

- reuse code with #include "filename.cpp"

- has to compile code every time, not as efficient

- reuse code with object file:

```
g++ -O -Wall -c sqrtn.cpp
```

this creates sqrtn.o, use with #include sqrtn.hpp

type sqrtn.o after compiling other file
- build your own library using archive command:

    ar -csr lib<name>.a file1.o file2.o

- for program test_hist.cpp, build program as follows:

    g++ -o -Wall test_hist.cpp -o test_hist -L -l(name)