# Exercise 1: HiLo

Write a program that picks a random number from 1 to 100 and prompts the player to guess it. With each guess the program prints “higher” or “lower” allowing the user to home in on the secret number.

Use these two lines to generate a random number from 1 to 100:

srand(time(0));

int number = (rand()%100)+1;

You must include <time.h>:

#include <time.h>

Work this first exercise in small pieces adding functionality little by little.

Suggestions:

1. Start with a file “hilo.cpp” with a “main” that prints HelloWorld.
2. Add local variables in “main” for “number” and “guess”.
3. Make an “if” check in “main” to compare the two numbers and print “higher” or “lower” or “equal”. Initialize the two variables with test values and test each “if” case.
4. Add “cin” to get the “guess”. Print a prompt before getting the number. Test the cases again.
5. Put the whole input/output code in an infinite loop. Add a “break” statement in the “equals” case.
6. Add the code fragment to make “number” random.
7. Spruce up the game if you want with some of the following:
   1. Add a “Guess count” to keep score.
   2. Add random “higher” and “lower” wording.
   3. Print directions at the start of the game.

## Step 1

#include <iostream>

using namespace std;

void main() {

cout << "Hello World" << endl;

}

## Step 2

void main() {

int number = 20;

int guess = 1;

cout << "Hello World" << endl;

}

## Step 3

void main() {

int number = 20;

int guess = 1;

if(guess<number) {

cout << "Higher!" << endl;

}

if(guess>number) {

cout << "Lower!" << endl;

}

if(guess==number) {

cout << "You got it!" << endl;

}

}

## Step 4

int number = 20;

int guess;

cout << "Your guess: ";

cin >> guess;

if(guess<number) {

cout << "Higher!" << endl;

}

...

## Step 5

while(true) {

cout << "Your guess: ";

cin >> guess;

if(guess<number) {

cout << "Higher!" << endl;

}

...

}

## Step 6

#include <iostream>

#include <time.h>

using namespace std;

void main() {

srand(time(0));

int number = (rand()%100)+1;

int guess;

while(true) {

cout << "Your guess: ";

cin >> guess;

if(guess<number) {

cout << "Higher!" << endl;

}

if(guess>number) {

cout << "Lower!" << endl;

}

if(guess==number) {

cout << "You got it!" << endl;

break;

}

}

}