

“Guess the Number”

Using C

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Introduction

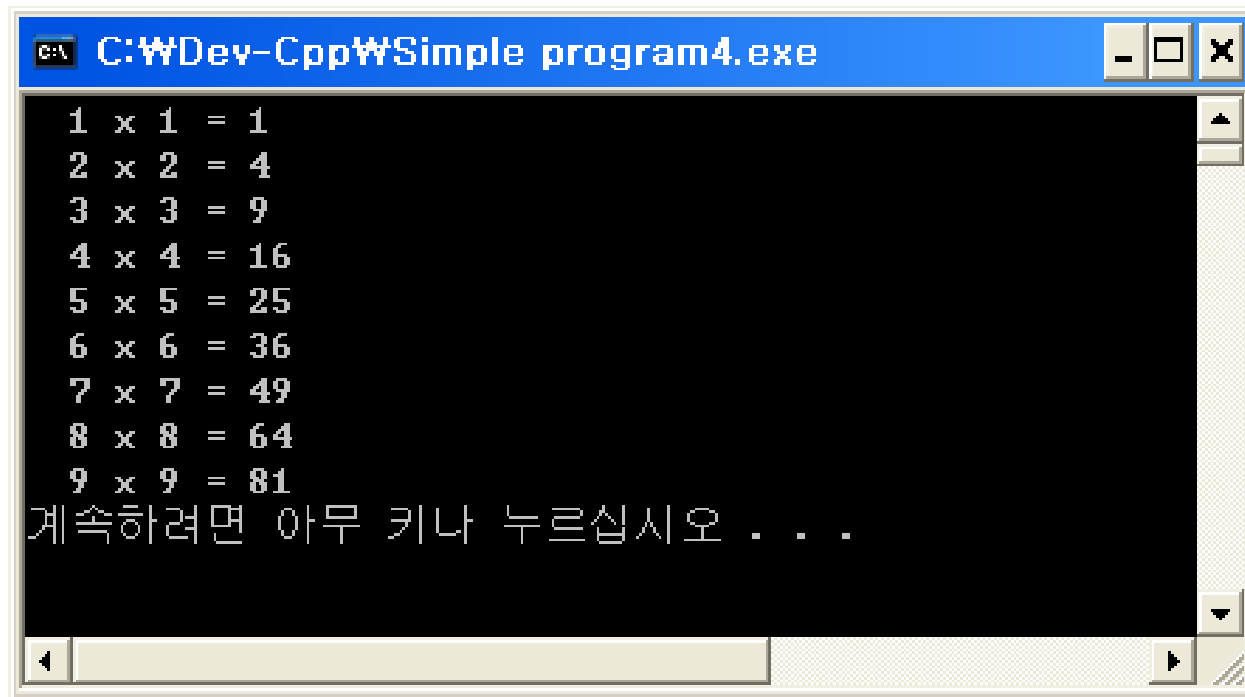
■ The “Guess the Number” Game

- Simple program 1
 - `while` statements
- Simple program 2
 - `if` statements
- Simple program 3
 - `rand()` function



A Simple Example of C programming

■ Simple program1



```
C:\WDev-Cpp\Simple program4.exe  
1 x 1 = 1  
2 x 2 = 4  
3 x 3 = 9  
4 x 4 = 16  
5 x 5 = 25  
6 x 6 = 36  
7 x 7 = 49  
8 x 8 = 64  
9 x 9 = 81  
계속하려면 아무 키나 누르십시오 . . .
```

A Simple Example of C programming

■ Simple program1

- **Source code:** while loops

```
/* Simple program(4) */
```

```
#include <stdio.h>
```

```
#include <stdlib.h>
```

```
int main(void) {
```

```
    int num = 1;
```

```
    while (num < 10) {
```

```
        printf("    %d x %d = %d\n", num, num, num*num);
```

```
        num = num + 1;
```

```
    }
```

```
    system("PAUSE");
```

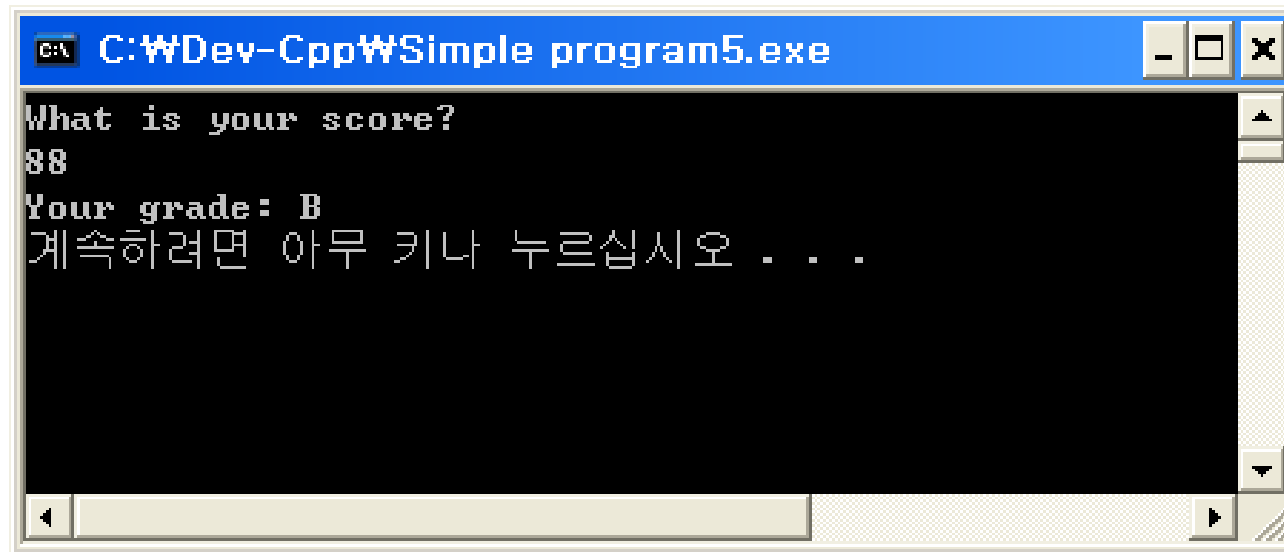
```
    return 0;
```

```
}
```

- Here, do not use system("PAUSE");
- PAUSE is a non-standard command only for Windows

A Simple Example of C programming

■ Simple program2



```
C:\WDev-Cpp\Simple program5.exe  
What is your score?  
88  
Your grade: B  
계속하려면 아무 키나 누르십시오 . . .
```

A Simple Example of Dev-C++

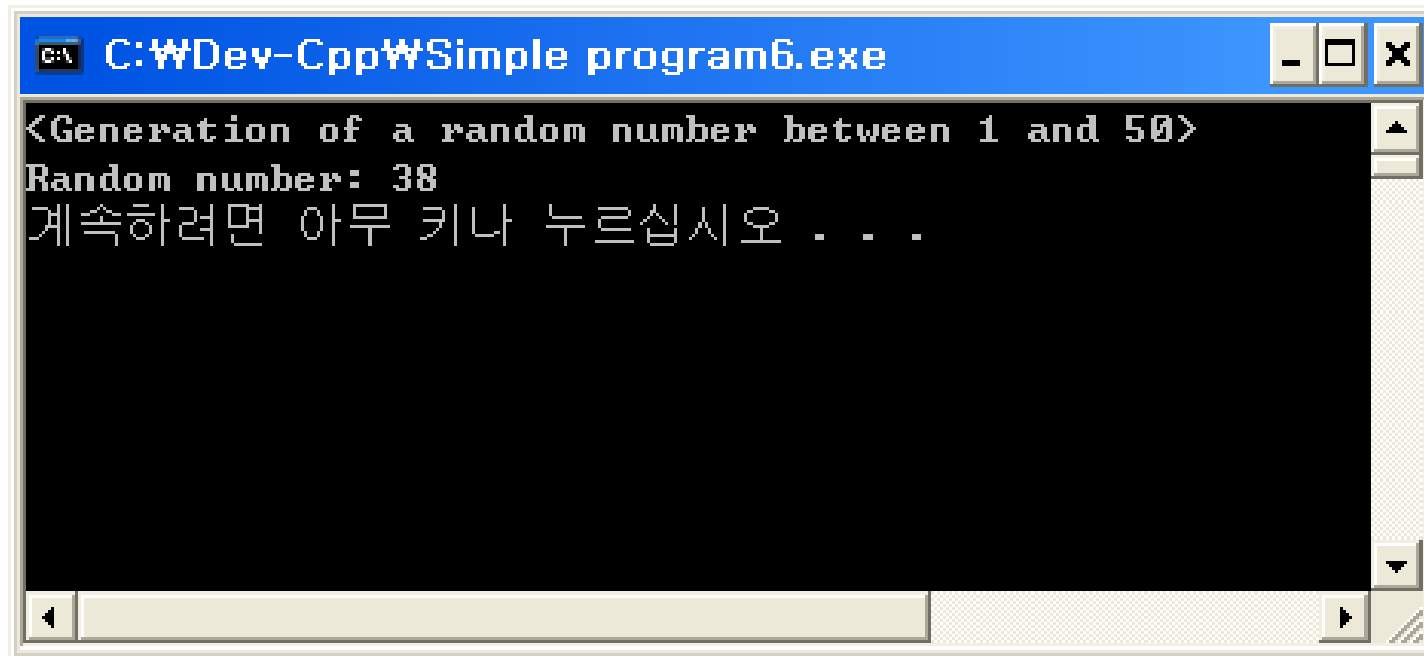
■ Simple program2

- **Source code:** if statements

```
/* Simple program(5) */  
  
#include <stdio.h>  
#include <stdlib.h>  
  
int main(void) {  
    int score;  
    printf("What is your score?\n");  
    scanf("%d", &score);  
    if(score >= 90)  
        printf("Your grade: A\n");  
    if(score < 90 && score >= 80)  
        printf("Your grade: B\n");  
    if(score < 80 && score >= 70)  
        printf("Your grade: C\n");  
    if(score < 70 && score >= 60)  
        printf("Your grade: D\n");  
    if(score < 60)  
        printf("Your grade: F\n");  
  
    system("PAUSE");  
    return 0;  
}
```

A Simple Example of Dev-C++

■ Simple program3



The screenshot shows a console window titled "C:\Dev-Cpp\Simple program6.exe". The window contains the following text:

```
<Generation of a random number between 1 and 50>  
Random number: 38  
계속하려면 아무 키나 누르십시오 . . .
```

The text is displayed in a monospaced font on a black background. The window has standard Windows XP-style window controls (minimize, maximize, close) in the title bar and a scrollbar on the right side.

A Simple Example of Dev-C++

■ Simple program3

- **Source code:** rand() functions

```
/* Simple program(6) */
```

```
#include <stdio.h>
#include <stdlib.h>
#include <time.h>
```

```
int main(void) {
    int num;
```

```
    srand(time(NULL));
    num = (rand() % 50) + 1;
```

```
    printf("<Generation of a random number between 1 and 50\n");
    printf("Random number: %d\n", num);
```

```
    system("PAUSE");
    return 0;
```

```
}
```


The “Guess the Number” Game with Dev-C++



■ Python program “Guess the Number”

```
Hello! What is your name?
```

```
Albert
```

```
Well, Albert, I am thinking of a number between 1 and 20.  
Take a guess.
```

```
10
```

```
Your guess is too high.
```

```
Take a guess.
```

```
2
```

```
Your guess is too low.
```

```
Take a guess.
```

```
4
```

```
Good job, Albert! You guessed my number in 3 guesses!
```

The “Guess the Number” Game with Dev-C++



■ Dev-C++ program “Guess the Number”

```
C:\Dev-Cpp\guessthenumber.exe
Well, Albert, I am thinking of a number between 1 and 20
Take a guess.
10
Your guess is too low.
Take a guess.
15
Your guess is too low.
Take a guess.
17
Your guess is too high.
Take a guess.
16
Good job, Albert! You guessed my number in 4 guesses!
계속하려면 아무 키나 누르십시오 . . .
```

The “Guess the Number” Game with Dev-C++

- Python source code

```
# This is a guess the number game.  
import random  
  
guessesTaken = 0
```

- Dev-C++ source code

```
/* Guess the Number */  
  
#include <stdio.h>  
#include <stdlib.h>  
#include <time.h>  
  
int main(void) {  
    char name[10];  
    int guessesTaken, guess, number;  
  
    guessesTaken = 0;
```

The “Guess the Number” Game with Dev-C++

- **Python source code**

```
print'Hello! What is your name?'
myName = raw_input()

number = random.randint(1, 20)
print'Well, ' + myName + ', I am thinking of a number between 1 and 20.'
```

- **Dev-C++ source code**

```
srand(time(NULL));
number=(rand()%20)+1;

printf("Hello! What is your name?\n");
scanf("%s", name);

printf("Well, %s, I am thinking of a number between 1 and 20\n", name);
```

The “Guess the Number” Game with Dev-C++

- Python source code

```
while guessesTaken < 6:  
    #print 'Take a guess.'  
    guess = raw_input('Take a guess.\  
    guess = int(guess)  
  
    guessesTaken = guessesTaken + 1  
  
    if guess < number:  
        print 'Your guess is too low.'  
  
    if guess > number:  
        print 'Your guess is too high.'  
  
    if guess == number:  
        break
```

- Dev-C++ source code

```
while (guessesTaken < 6){  
    printf("Take a guess.\n");  
    scanf("%d", &guess);  
    guessesTaken = guessesTaken + 1;  
  
    if (guess < number)  
        printf("Your guess is too low.\n");  
    if (guess > number)  
        printf("Your guess is too high.\n");  
    if (guess == number)  
        break;  
}
```

The “Guess the Number” Game with Dev-C++

- Python source code

```
if guess == number:
    guessesTaken = str(guessesTaken)
    print 'Good job, ' + myName + '! You guessed my number in ' +
    + guessesTaken + ' guesses!'

if guess != number:
    number = str(number)
    print 'Nope. The number I was thinking of was ' + number
```

- Dev-C++ source code

```
if (guess == number)
    printf("Good job, %s! You guessed my number in %d guesses!\n", name, guessesTaken);
if (guess != number)
    printf("Nope. The number I was thinking of was %d\n", number);

system("PAUSE");
return 0;
}
```

The “Guess the Number” Game with Dev-C++

- **Dev-C++ source code (1/2)**

```
/* Guess the Number */
```

```
#include <stdio.h>
```

```
#include <stdlib.h>
```

```
#include <time.h>
```

```
int main(void) {
```

```
    char name[10];
```

```
    int guessesTaken, guess, number;
```

```
    guessesTaken = 0;
```

```
    srand(time(NULL));
```

```
    number=(rand() %20)+1;
```

```
    printf("Hello! What is your name?\n");
```

```
    scanf("%s", name);
```

```
    printf("Well, %s, I am thinking of a number between 1 and 20\n", name);
```

The “Guess the Number” Game with Dev-C++

- **Dev-C++ source code (2/2)**

```
while (guessesTaken < 6){  
    printf("Take a guess.\n");  
    scanf("%d", &guess);  
    guessesTaken = guessesTaken + 1;  
  
    if (guess < number)  
        printf("Your guess is too low.\n");  
    if (guess > number)  
        printf("Your guess is too high.\n");  
    if (guess == number)  
        break;  
}  
  
if (guess == number)  
    printf("Good job, %s! You guessed my number in %d guesses!\n", name, guessesTaken);  
if (guess != number)  
    printf("Nope. The number I was thinking of was %d\n", number);  
  
system("PAUSE");  
return 0;  
}
```


The “Guess the Number” Game with Dev-C++

- **Dev-C++ source code – if else**

```
while (guessesTaken < 6){  
    printf("Take a guess.\n");  
    scanf("%d", &guess);  
    guessesTaken = guessesTaken + 1;  
  
    if (guess < number)  
        printf("Your guess is too low.\n");  
    else if (guess > number)  
        printf("Your guess is too high.\n");  
    else  
        break;  
}  
  
if (guess == number)  
    printf("Good job, %s! You guessed my number in %d guesses!\n", name, guessesTaken);  
else  
    printf("Nope. The number I was thinking of was %d\n", number);  
  
system("PAUSE");  
return 0;  
}
```