


Chapter 6



More about Program Structures

Card.cpp

```
char color[] = { 6, 3, 4, 5};  
char value[] = { '2', '3', '4', '5', '6',  
    '7', '8', '9', 'T', 'J', 'Q', 'K', 'A' };
```

```
    for (i=0; i<4; i++)  
        cout << color[i];  
cout << endl;                ♠♥♦♣
```

```
    for (i=0; i<13; i++)  
        cout << value[i];  
cout << endl;                23456789TJQKA
```

print_card()

```
❑ void print_card(int n)
❑ {
❑     int c, v;
❑     c = n / 13;
❑     v = n % 13;
❑     cout << color[c] << value[v];
❑ }
```

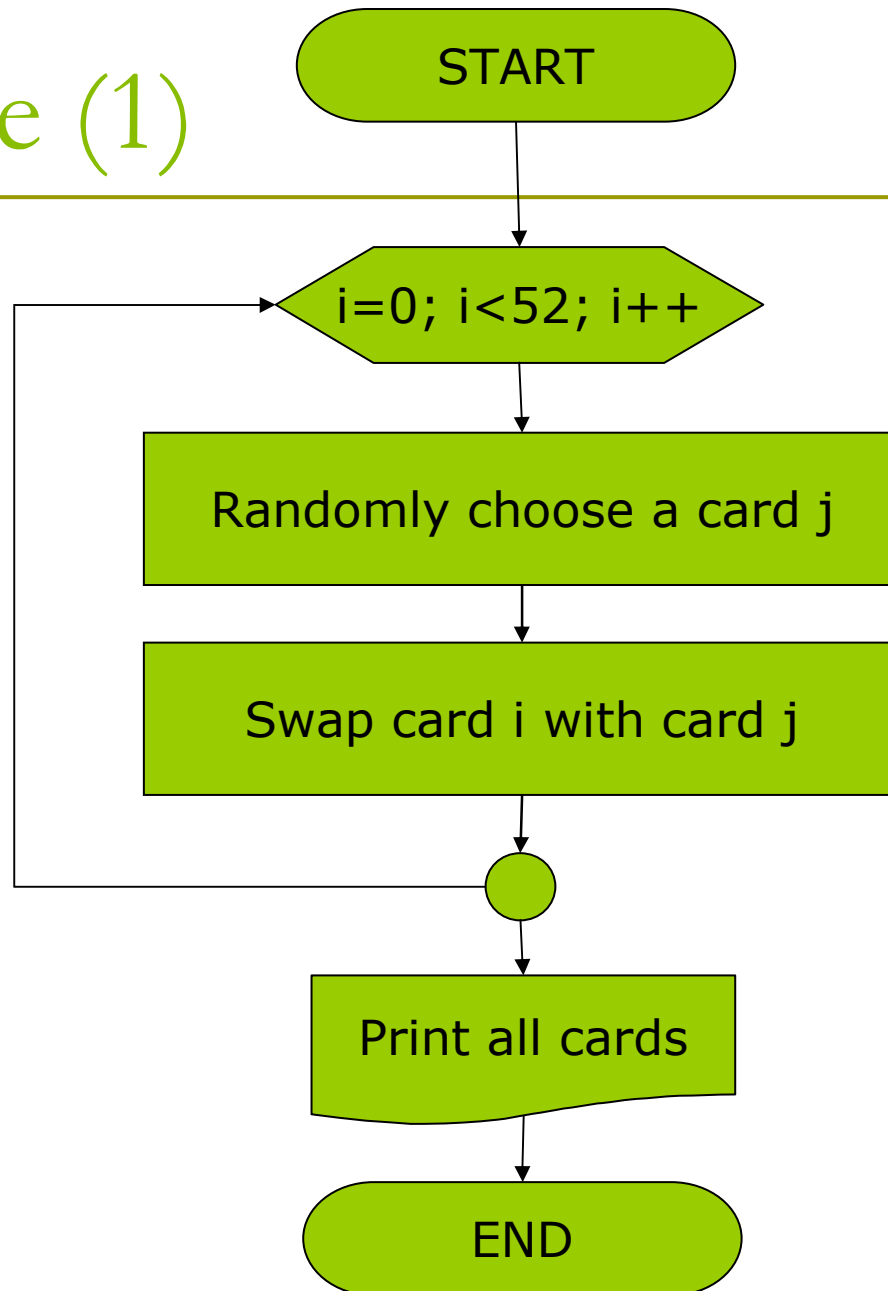
```
❑ print_card(0);           ♠ 2
❑ print_card(6);          ♠ 8
❑ print_card(25);         ♥ A
❑ print_card(26);         ♦ 2
```

Print All Cards

- `for (i=0; i<52; i++)`
- `card[i] = i;`

- `for (i=0; i<52; i++)`
- `print_card(card[i]);`
- `cout << endl;`

Shuffle (1)



rand()

- ❑ #include <stdlib.h>
- ❑ #include <time.h>
- ❑ // Print 5 random numbers.
- ❑ srand((unsigned)time(NULL));
- ❑ for (int i = 0; i < 5; i++)
- ❑ cout << rand() << endl;

Swap Cards

```
for (i=0; i<52; i++)
    card[i] = i;

srand((unsigned)time(NULL));
for (i=0; i<3; i++)
{
    int j, temp;
    j = rand() % 52;
    cout << "SWAP card " << i << " and card " << j << endl;
    temp = card[i];
    card[i] = card[j];
    card[j] = temp;
}

for (i=0; i<52; i++)
    print_card( card[i] );
cout << endl;
```

Decimal -> Octal

□ $23_{10} \rightarrow 27_8$

□ $88_{10} \rightarrow 130_8$

88 % 8

oct(88 / 8)

□ $128_{10} \rightarrow 200_8$

octal()

```
❑ void octal(int n)
❑ {
❑     if (n >= 8)
❑     {
❑         octal(n / 8);
❑         cout << (n % 8);
❑     }
❑     else
❑     {
❑         cout << n;
❑     }
❑ }
```

Calling the Recursive Function `octal()`

```
int main(void)
{
    int i;
    cout << "Please input an integer -- ";
    cin >> i;
    while (i>0)
    {
        octal(i);
        cout << endl;
        cout << "Please input an integer -- ";
        cin >> i;
    }
}
```