

VBA basics

Objectives

What does VBA mean?

Basic Macro Recording

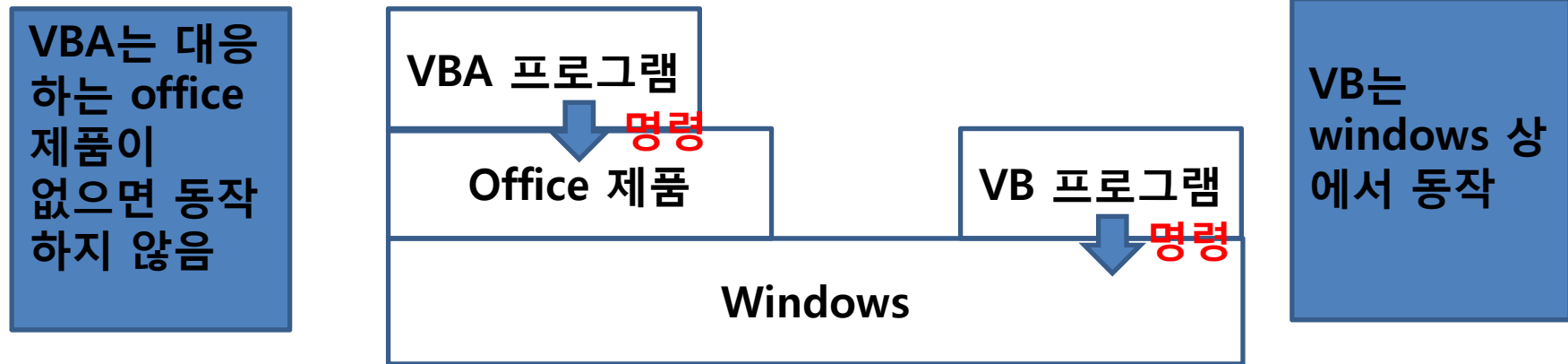
Examining and Changing Properties

Copying and Clearing cells

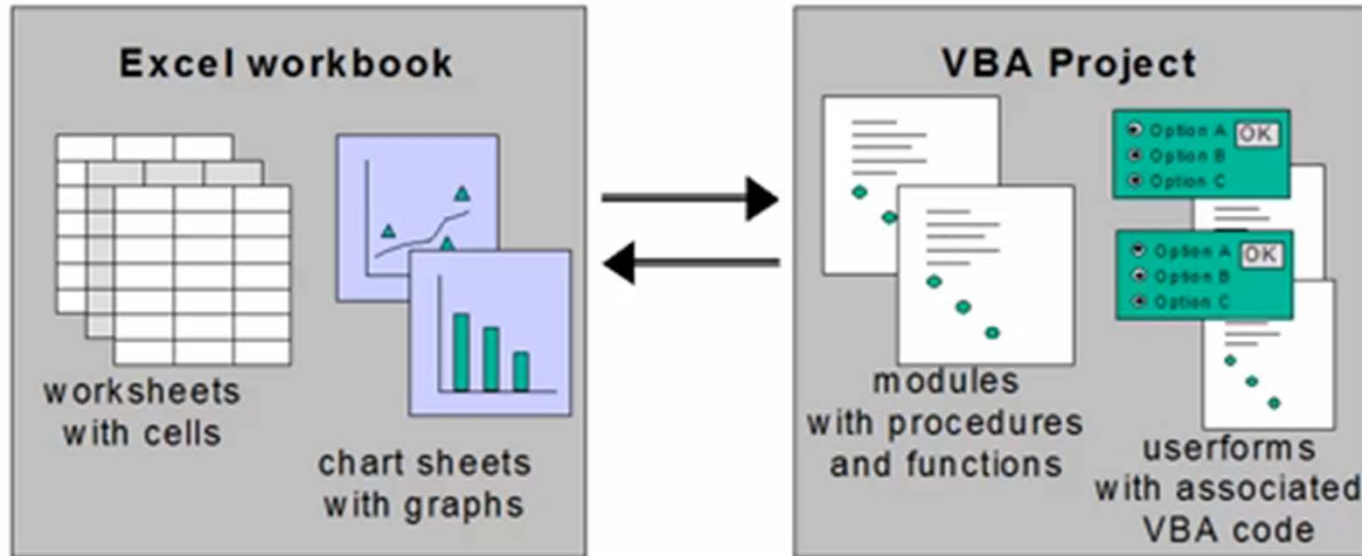
What does VBA mean?

What does Visual Basic for Applications(VBA) mean?

: 엑셀이나 워드, 파워포인트 같은 응용프로그램에서 사용할 수 있도록 미국 마이크로소프트사에서 그래픽 사용자 인터페이스(GUI) 사용해서 만든 프로그래밍 언어(어플리케이션의 조작과 처리 자동화 위한 프로그램 만드는 언어)



What does VBA mean?



Excel Application

Spreadsheet
Environment
- "spreadsheet world"

VBA
Environment
- "VBA world"

Basic Macro Recording

-How does VBA code get created?

(VB 문법따라 작성된 프로그램)

1) Excel writes VBA code automatically
when you run the macro recorder

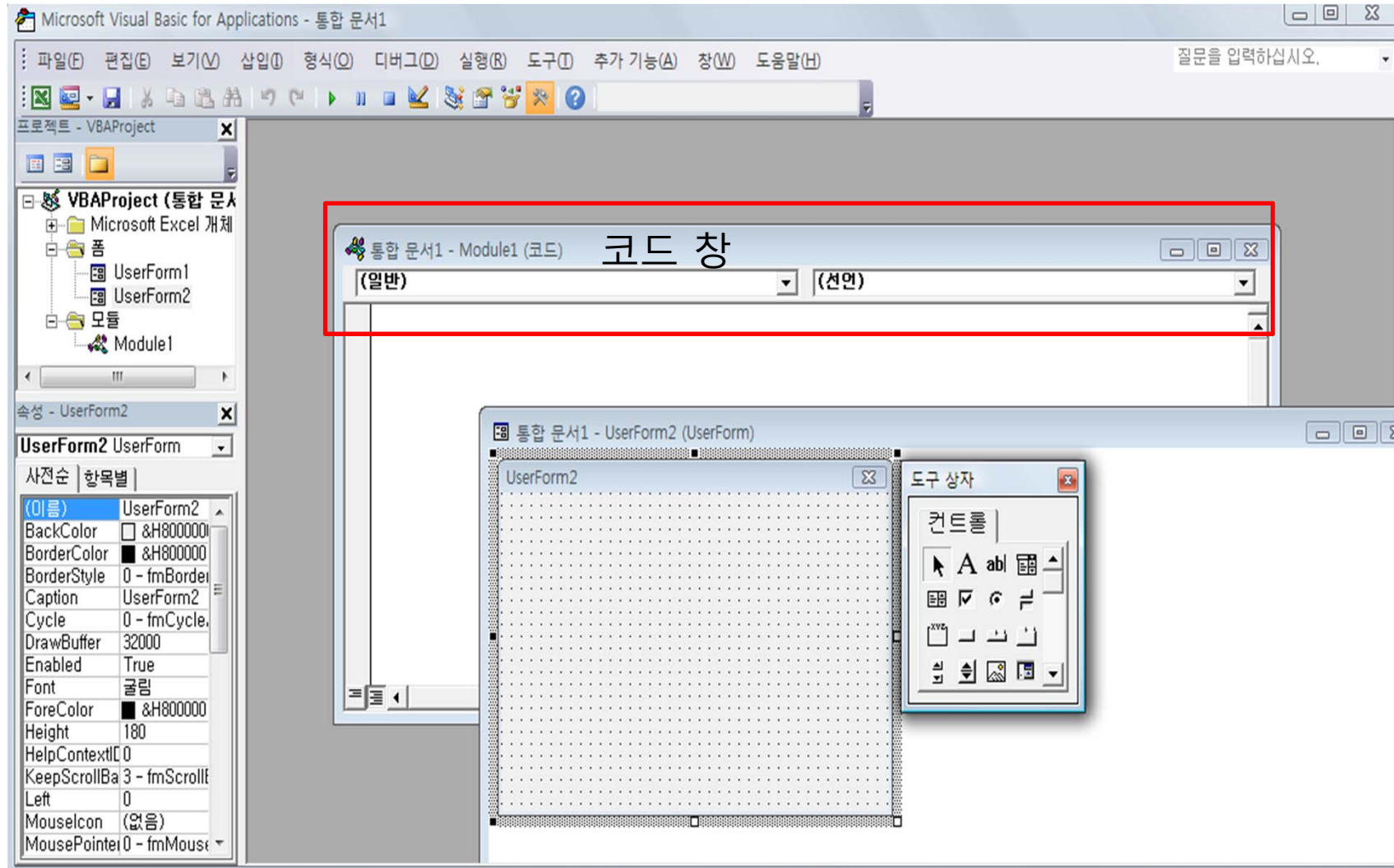
-> then you usually use the VBE to clean up
and modify the automatically-written code

2) You write it from scratch with the VBE

Basic Macro Recording

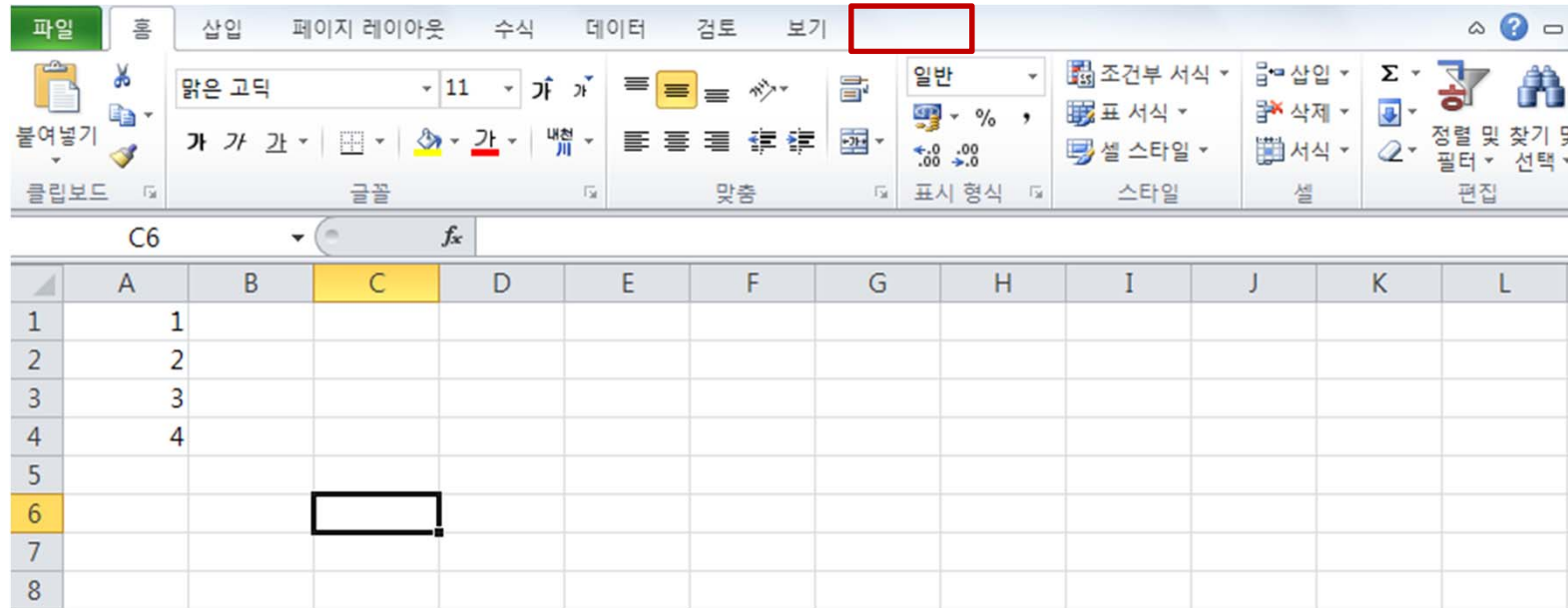
-How does VBA code get created?

* VBE=Visual Basic editor



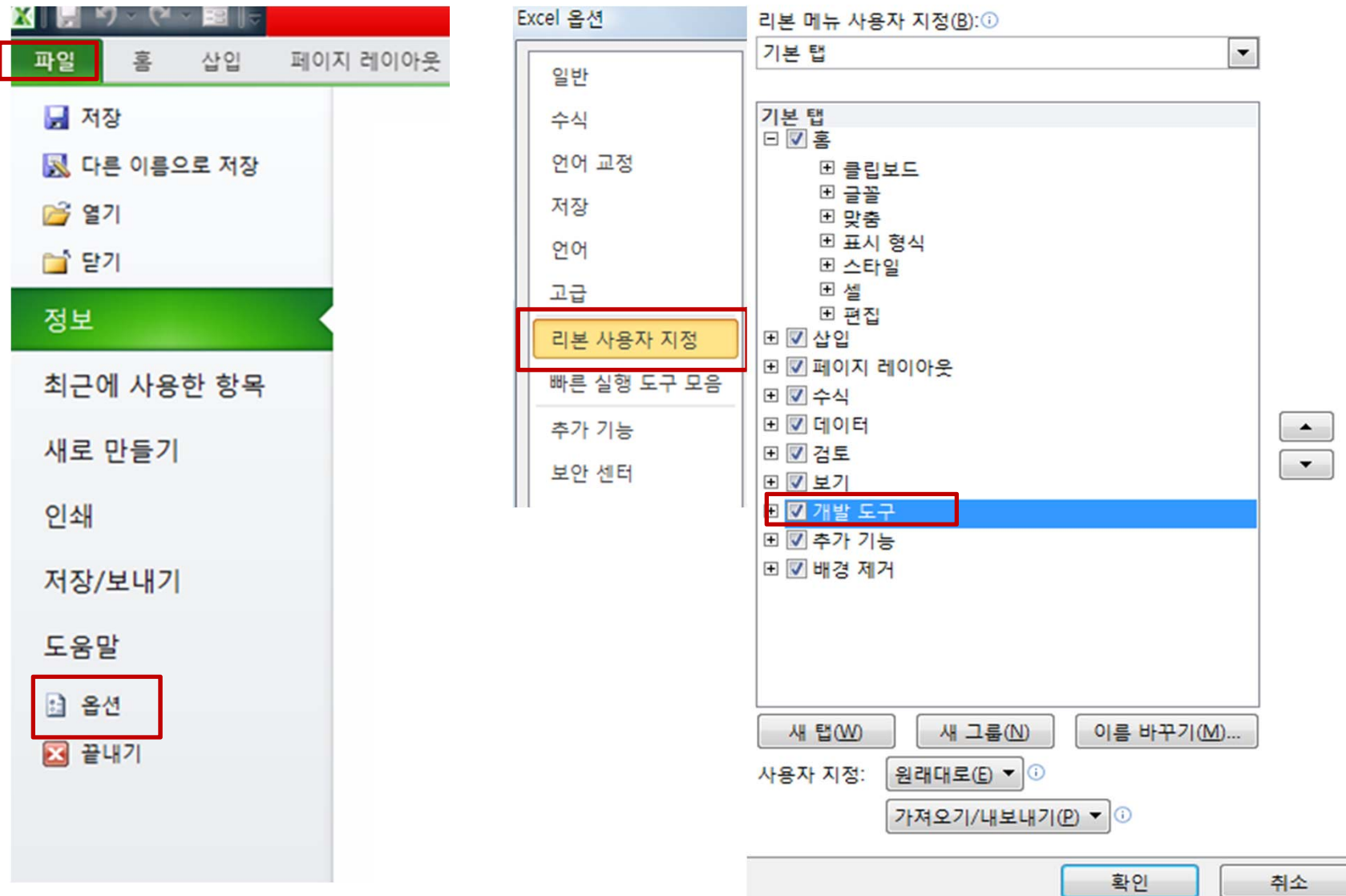
Basic Macro Recording

-How does VBA code get created?



Basic Macro Recording

-How does VBA code get created?



Basic Macro Recording

-How does VBA code get created?

The image consists of two screenshots of the Microsoft Excel interface, illustrating the steps to start macro recording.

Top Screenshot: Shows the 'Home' tab. The 'Home' tab name is highlighted with a red box. The 'Text to Columns' button (6) and the 'Merge and Center' button (6) are highlighted with red boxes. The formula bar shows 'a very long label'.

Bottom Screenshot: Shows the 'Developer' tab (7) selected. The 'Record Macro' button (8) is highlighted with a red box. The 'a very long label' cell from the previous screenshot is visible in the background.

The following table represents the data visible in the Excel spreadsheet across both screenshots:

| | A | B | C | D | E | F | G | H |
|---|---|---|-------------------|---|---|---|---|---|
| 1 | 1 | | | | | | | |
| 2 | 2 | | | | | | | |
| 3 | 3 | | | | | | | |
| 4 | 4 | | a very long label | | | | | |

Basic Macro Recording

-How does VBA code get created?

The screenshot displays the Microsoft Visual Basic for Applications (VBA) editor. The main window shows the VBA code for 'Module1 (코드)'. The code is as follows:

```
Sub 매크로1()  
    ' 매크로1 매크로  
    ' 바로 가기 키: Ctrl+Shift+F  
    With Selection  
        .HorizontalAlignment = xlGeneral  
        .VerticalAlignment = xlBottom  
        .WrapText = False  
        .Orientation = 0  
        .AddIndent = False  
        .IndentLevel = 0  
        .ShrinkToFit = False  
        .ReadingOrder = xlContext  
        .MergeCells = False  
    End With  
    With Selection  
        .HorizontalAlignment = xlGeneral  
        .VerticalAlignment = xlBottom  
        .WrapText = True  
        .Orientation = 0  
        .AddIndent = False  
        .IndentLevel = 0  
        .ShrinkToFit = False  
        .ReadingOrder = xlContext  
        .MergeCells = False  
    End With  
    With Selection  
        .HorizontalAlignment = xlCenter  
        .VerticalAlignment = xlBottom  
        .WrapText = True  
        .Orientation = 0  
        .AddIndent = False  
        .IndentLevel = 0  
        .ShrinkToFit = False  
        .ReadingOrder = xlContext  
        .MergeCells = False  
    End With  
End Sub
```

The left-hand pane shows the 'VBAProject (VBA 바)' tree with 'Module1' selected. The right-hand pane shows the Excel spreadsheet with a tooltip for the 'Alt + F11' keyboard shortcut. The tooltip text reads: '기록 중지' (Stop Recording), '매크로를 기록합니다.' (Recording the macro), and '실행하는 각 명령이 매크로에 저장되어 나중에 다시 실행할 수 있습니다.' (Each command you execute is saved to the macro so you can run it again later). The keyboard shortcut 'Alt + F11' is highlighted in a blue box. Below the tooltip, the text 'a very long label' is displayed in a black box.

Basic Macro Recording

-How does VBA code get created?

| | A | B | C | D | E | F |
|---|---|---|-------------------|---|--------------------|---|
| 1 | 1 | | | | | |
| 2 | 2 | | | | | |
| 3 | 3 | | | | | |
| 4 | 4 | | a very long label | | another long label | |

 **Alt** + **Shift** + **W**

| | A | B | C | D | E | F |
|---|---|---|-------------------|---|--------------------|---|
| 1 | 1 | | | | | |
| 2 | 2 | | | | | |
| 3 | 3 | | | | | |
| 4 | 4 | | a very long label | | another long label | |

Basic Macro Recording

-How does VBA code get created?

2) write it from scratch with the VBE

Alt + F11

Microsoft Visual Basic for Applications - 통합 문서1

삽입(I) 형식(O) 디버그(D) 실행(R) 도구(T) 추가 기능(A) 창(W) 도움말(H)

프로시저(P)... 사용자 정의 품(U) 모듈(M) 클래스 모듈(C) 파일(L)...

파일에 있는 모든 변수를 명시적으로 강제 선언

변수 선언..

변수 선언 문법 Dim 문
Dim 변수이름 as 데이터형식
Integer - 정수의미

MsgBox = message box의미

매트랩에서 inputf 역할

속성 조합

프로시저 이름

```

[일반] ChangeColorCode
Option Explicit
Dim ColorCode As Integer
Sub ShowColorCode()
ColorCode = Selection.Interior.ColorIndex
MsgBox ColorCode
End Sub
Sub ChangeColorCode()
ColorCode = InputBox("Enter Color code, then Click OK")
Selection.Interior.ColorIndex = ColorCode
End Sub
    
```

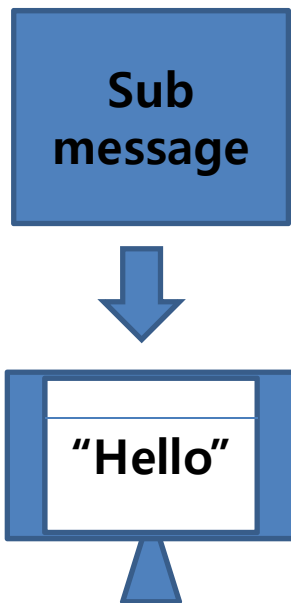
Basic Macro Recording

-How does VBA code get created?

프로시저:

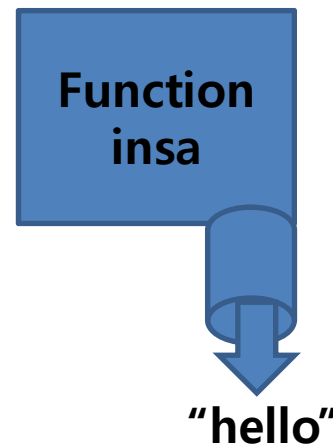
sub 와 End sub 혹은 function or End function 사이에 기술한 코드 집합

```
Sub message( )  
    MsgBox "Hello"  
End sub
```



특정한 동작을 실행

```
Function insa( )  
    insa = "hello"  
End function
```

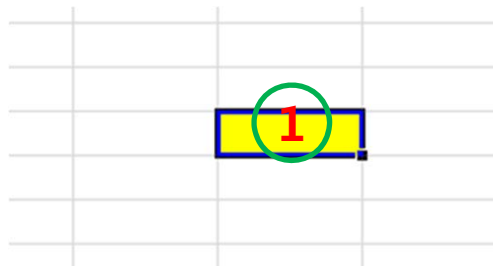
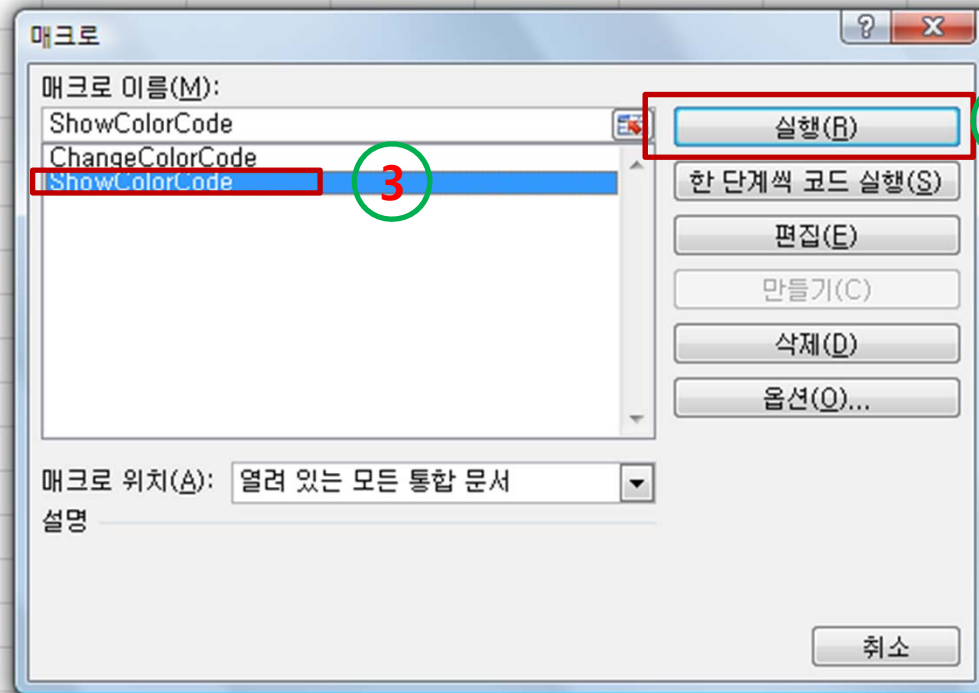


특정한 계산을 수행하고
그 결과값을 돌려줌

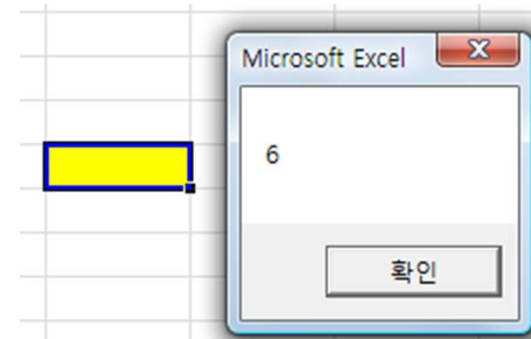
Examining and Changing Properties

Alt + F8

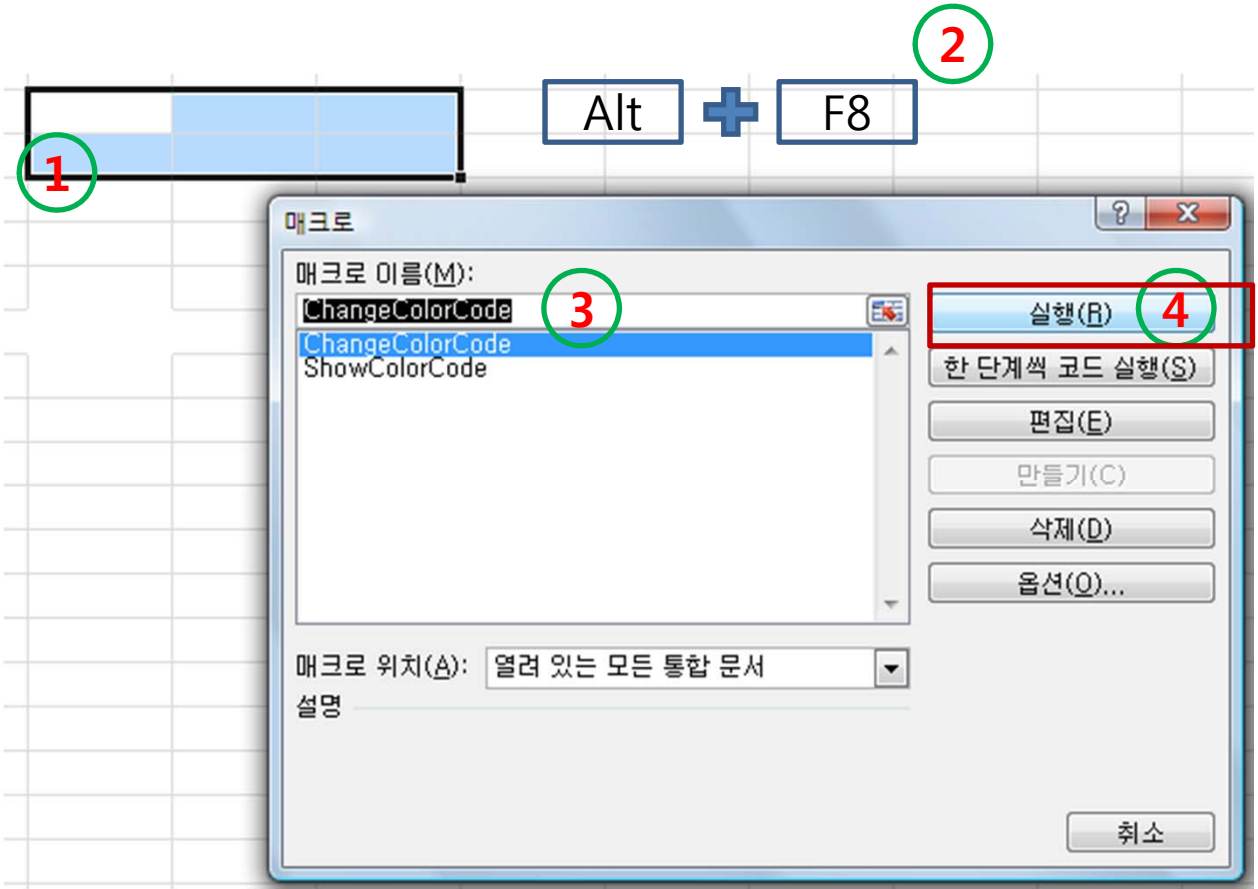
2



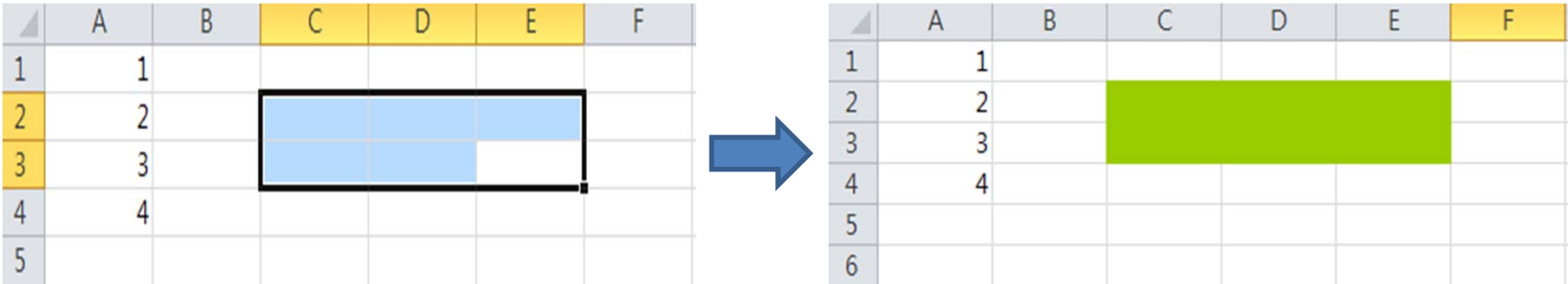
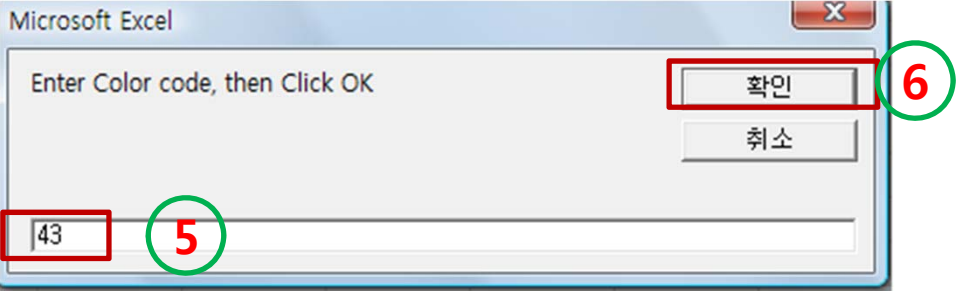
실행



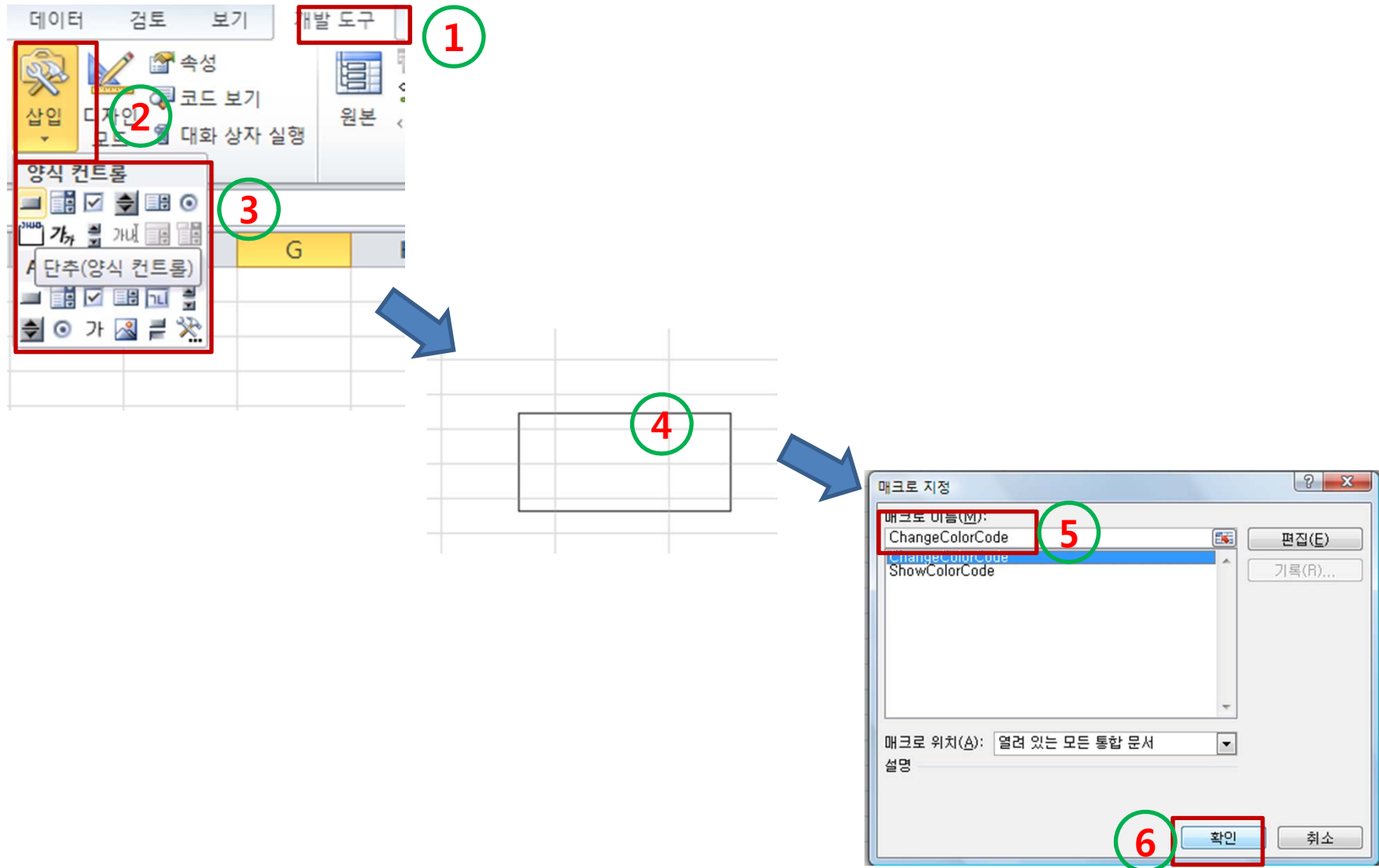
Examining and Changing Properties



Examining and Changing Properties



Examining and Changing Properties



Examining and Changing Properties

The image illustrates the process of changing a cell's color in Microsoft Excel. It shows a dialog box titled "Microsoft Excel" with the instruction "Enter Color Code, Then Click OK". The dialog box contains a text input field with the value "4" and two buttons: "확인" (OK) and "취소" (Cancel). A red box highlights the "확인" button, and a red box highlights the input field. A red circle with the number "7" is next to the dialog box, a red circle with "8" is next to the input field, and a red circle with "9" is next to the "확인" button. A blue arrow points from the dialog box to the cell C3, which now contains the text "단추 1" and is highlighted in green.

| | A | B | C | D | E |
|---|---|---|------|---|---|
| 1 | 1 | | | | |
| 2 | 2 | | | | |
| 3 | 3 | | 단추 1 | | |
| 4 | 4 | | | | |
| 5 | | | | | |
| 6 | | | | | |
| 7 | | | | | |
| 8 | | | | | |
| 9 | | | | | |

| | A | B | C | D | E | F |
|---|---|---|------|---|---|---|
| 1 | 1 | | | | | |
| 2 | 2 | | | | | |
| 3 | 3 | | 단추 1 | | | |
| 4 | 4 | | | | | |
| 5 | | | | | | |
| 6 | | | | | | |
| 7 | | | | | | |
| 8 | | | | | | |
| 9 | | | | | | |

Copying and Clearing cells

VBA basics : Using VBA to Modify contents of cells

Copy/Paste :

Range("C1").Copy Range("D1")

복사 범위 명령어 붙일 범위

코드 형태 1

Range("C1:D4").Select

복사 범위 명령어
Selection.Copy : 선택한 부분 복사

코드 형태 2

Range("A1").Select

붙일 범위 명령어

ActiveSheet.Paste : 선택한 부분에 복사한 부분 붙임

Copying and Clearing cells

VBA basics.xlsx - Module2 (코드)

(일반) Clearcells

Option Explicit

```
Sub CopyCells()  
Range("A1:A4").Copy Range("C1:C4")  
End Sub
```

→ A1:A4를 copy -> C1:C4

```
Sub Clearcells()  
Selection.Clear  
End Sub
```

→ 선택한 부분 clear

| | A | B | C |
|---|---|---|---|
| 1 | 1 | | |
| 2 | 2 | | |
| 3 | 3 | | |
| 4 | 4 | | |

Copying and Clearing cells

VBE에서 F5 누르거나
엑셀에서 Alt + F8 누르면 매크로 실행

```

Option Explicit

Sub CopyCells()
Range("A1:A4").Copy Range("C1:C4")
End Sub

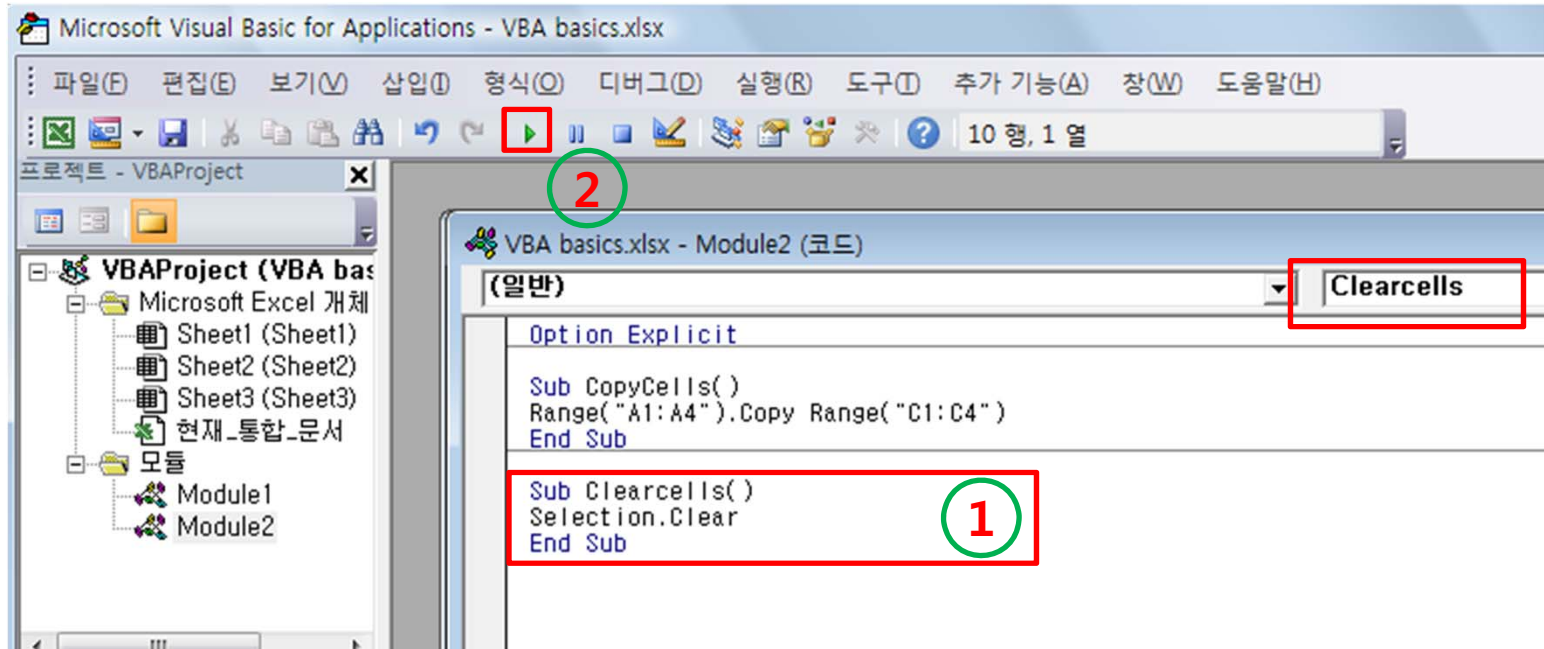
Sub Clearcells()
Selection.Clear
End Sub
    
```

| | A | B | C |
|---|---|---|---|
| 1 | 1 | | |
| 2 | 2 | | |
| 3 | 3 | | |
| 4 | 4 | | |



| | A | B | C |
|---|---|---|---|
| 1 | 1 | | 1 |
| 2 | 2 | | 2 |
| 3 | 3 | | 3 |
| 4 | 4 | | 4 |

Copying and Clearing cells



| | A | B | C |
|---|---|---|---|
| 1 | 1 | | 1 |
| 2 | 2 | | 2 |
| 3 | 3 | | 3 |
| 4 | 4 | | 4 |



| | A | B | C |
|---|---|---|---|
| 1 | 1 | | 1 |
| 2 | 2 | | 2 |
| 3 | 3 | | 3 |
| 4 | 4 | | 4 |

Summary

VBA란 : 엑셀이나 워드, 파워포인트 같은 응용프로그램에서 사용할 수 있도록 미국 마이크로소프트사에서 그래픽 사용자 인터페이스(GUI) 사용해서 만든 프로그래밍 언어

VBA 관련 툴 사용 -> 개발도구 탭 부분 필요

개발도구 탭 보이기 : 파일-> 옵션 -> 리본 사용자 지정 -> 개발도구 박스에 체크 -> 확인

VBA 코드 작성 방법

1. Macro recorder 이용

2. VBE에서 직접쓰기 -> 창 여는 단축키 : Alt+F11

변수 선언 문법 : dim 이름 as 데이터형식

프로시저 : sub 와 End sub 혹은 function or End function 사이에 기술한 코드 집합

만든 매크로 사용 하려면:

1) 엑셀에서 Alt+F8 누르고 매크로 지정 2) VBE에서 원하는 매크로 클릭 후 F5

만든 매크로 쉽게 사용 위해 단추 만들기: 개발도구->양식->매크로 지정->확인

셀 복사, 붙여 넣기, 지우기