MS Office 2010 (MS Word 2010 & MS Excel 2010)

Lesson 02 : Understanding Cell Reference

Lesson Objectives

- Using Cell References
- Types of cell references
- Relative Reference
- Absolute Reference
- Mixed Reference
- Cell reference to another worksheet
- Cell reference to another workbook

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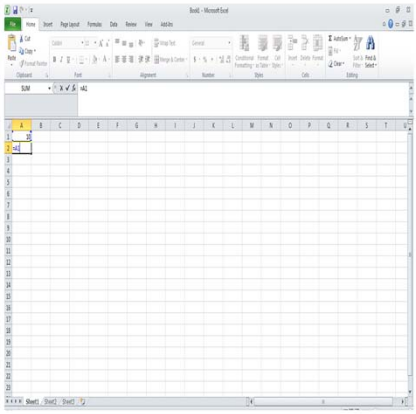
Using Cell References

- Most formulas you create include references to cells or ranges.
- These references enable your formulas to work dynamically with the data contained in those cells or ranges.
- A “cell reference” means the cell to which another cell refers.
- For example, if in cell A1 you have =A2. Then A1 refers to A2.



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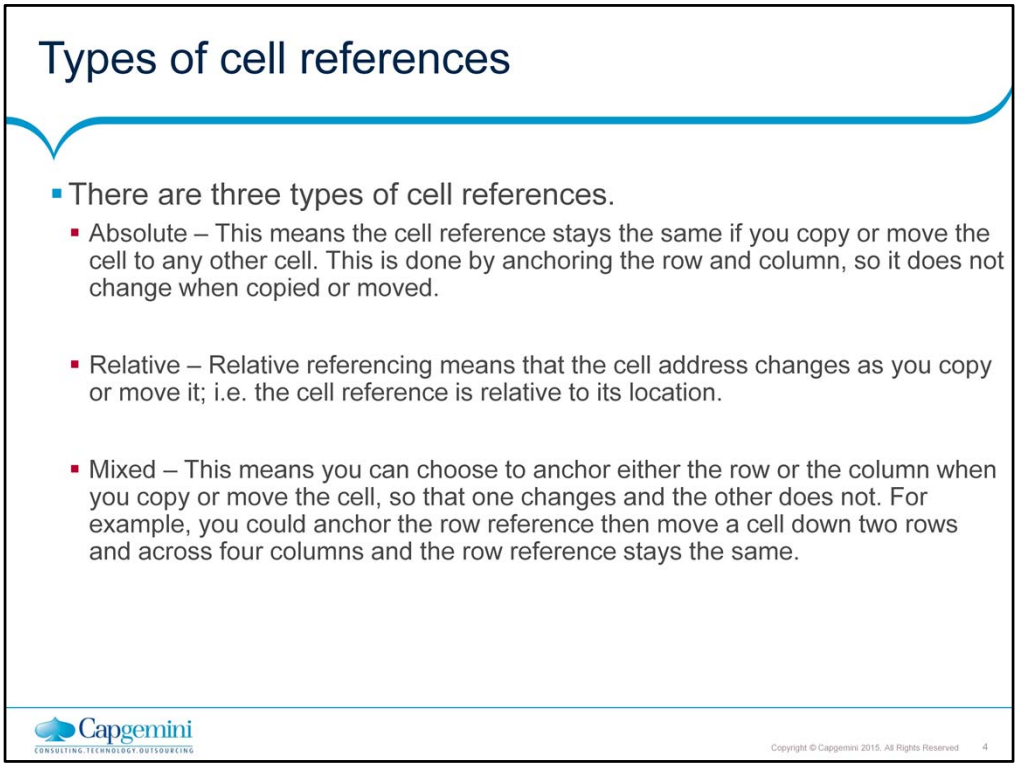

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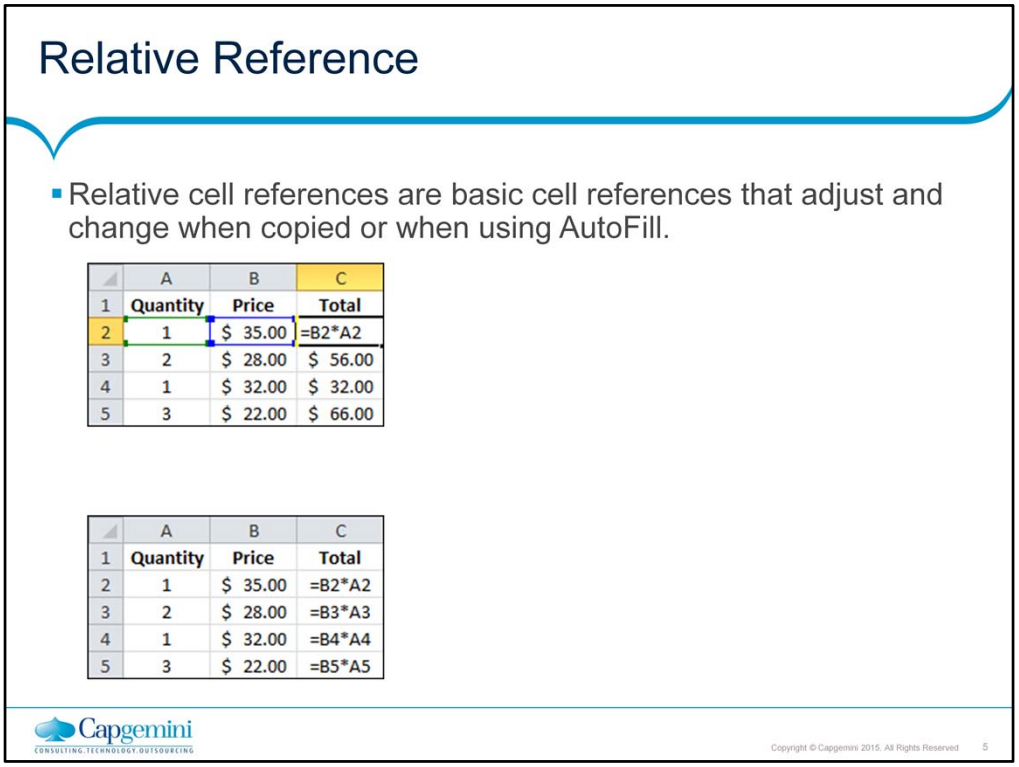
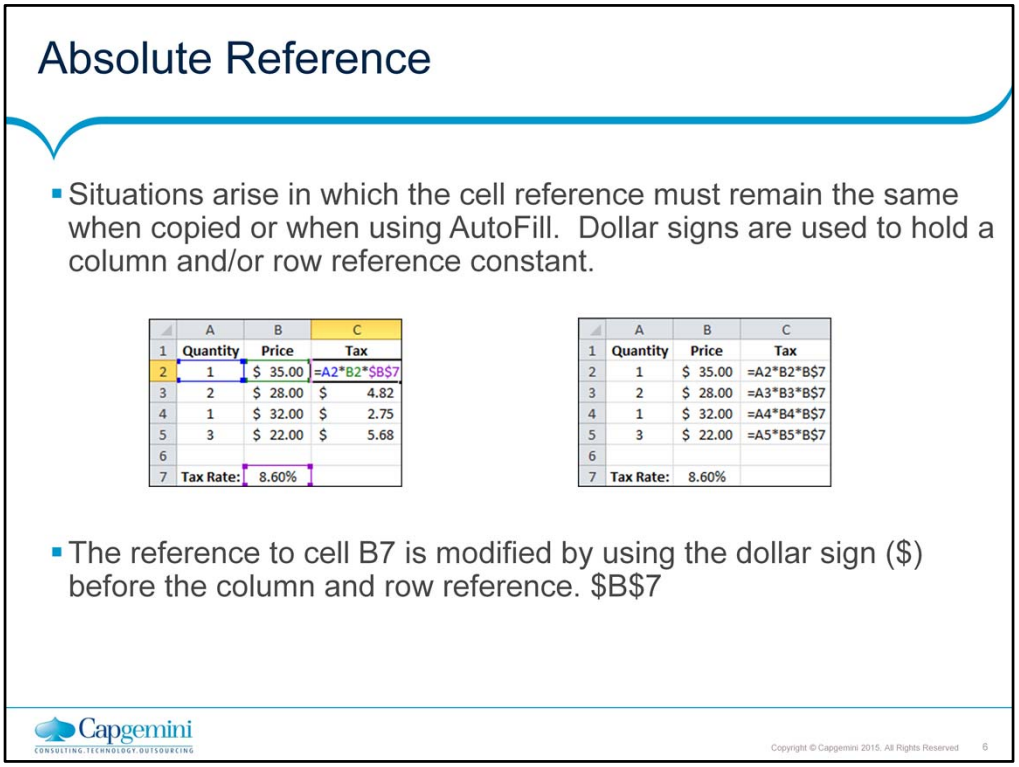


Figure 1 :

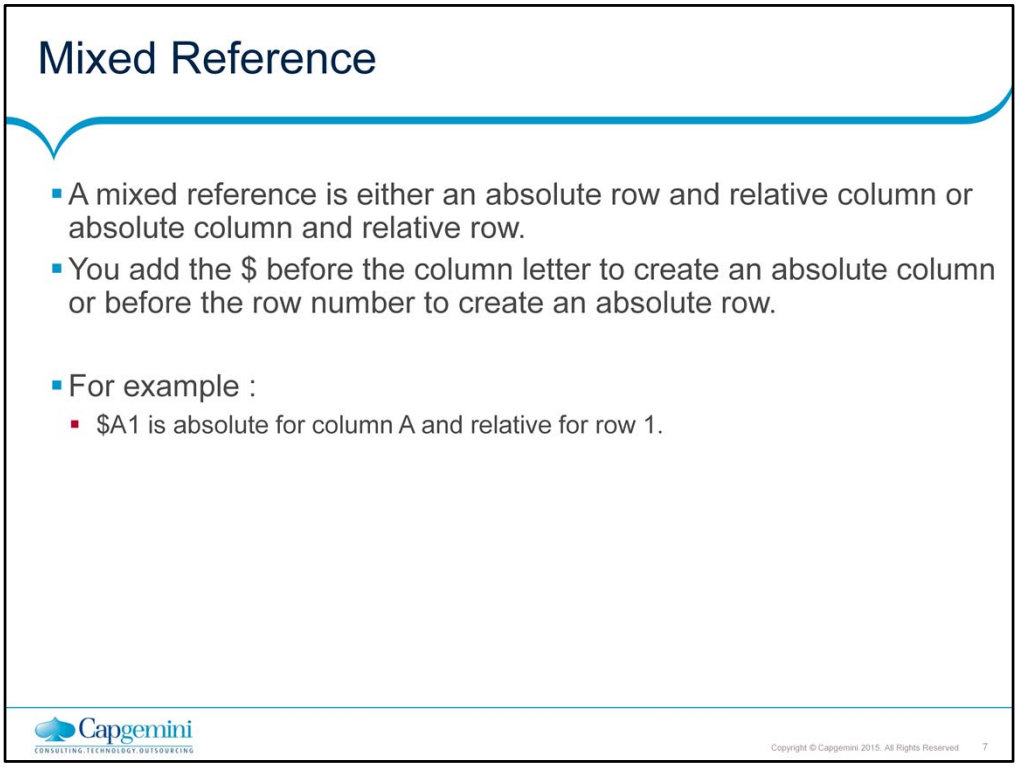
- The first example is a worksheet with data for Quantity, Price, and Total. The formula in cell C2 is Price times Quantity, or**=B2*A2**.
- There are two cell references in this formula, B2 and A2. Both have a ***column reference*** (B and A) and a ***row reference*** (2).

Figure 2 :

- You'll notice that B2 changes to B3, B4, B5, and A2 changes to A3, A4, A5 when copied down.
- As we copy the formula in cell C2 all the way down to cell C5, both of these cell references change automatically. They are***relative*** references. ***Copying down changes the row reference***.



- The above relative cell reference example is changed to calculate the Tax for Quantity times Price.
- The Tax Rate is located in cell B7.
- The formula for Tax in cell C2 is Quantity times Price times Tax Rate, or **=A2*B2*B7**.
- The cell reference for B7 is an ***absolute reference***, which is needed because the Tax Rate is fixed in one place.
- The reference to cell B7 is modified by using the ***dollar sign ($) before the column and row reference***. By doing so, B7 will remain constant as I copy the formula down to C3, C4, C5.
- The other two cell references are still relative references and change as the formula is copied down. Although, if you'll notice, neither of the column references change, they're still A and B.
- This means is that the reference to cell B7 needs only an ***absolute row reference*** for this formula to work. As you see below, **B$7** is now the cell reference and row 7 will not change when you copy the formula down.



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Cell reference to another worksheet

- Cells that are on other worksheets by appending the name of the worksheet followed by an exclamation point (!) to the start of the cell reference.
- In the following example, the worksheet function named AVERAGE calculates the average value for the range B1:B10 on the worksheet named Marketing in the same workbook.

- Reference to a range of cells on another worksheet in the same workbook
  - Refers to the worksheet named Marketing
  - Refers to the range of cells between B1 and B10, inclusively
  - Separates the worksheet reference from the cell range reference

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Cell reference to another workbook

- To refer to a cell or range from another workbook follow the below :

```
=[filename.xls]SheetName!$Column$Row
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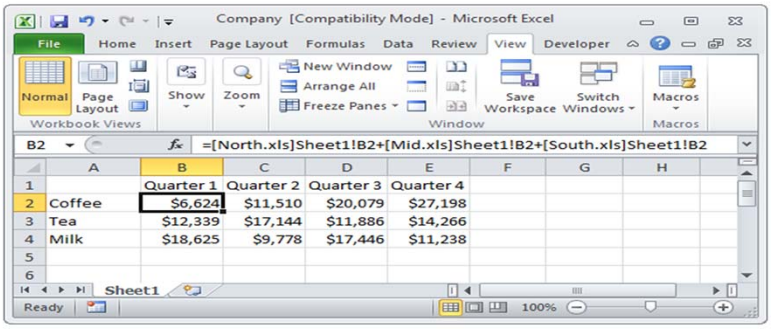

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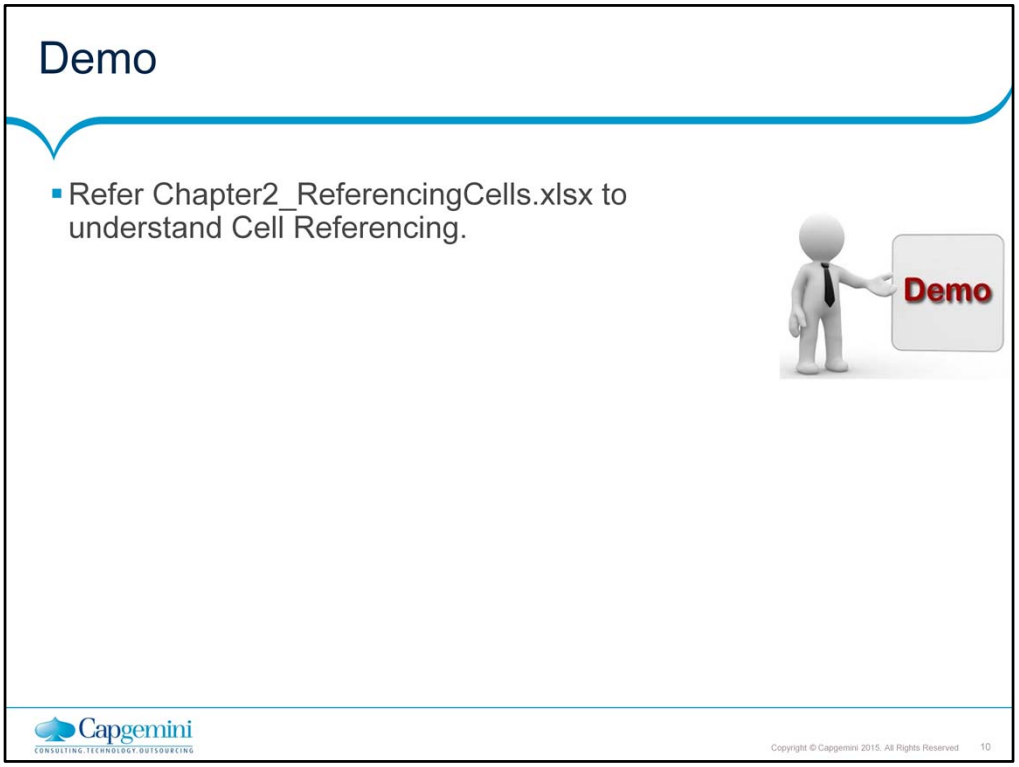
 9



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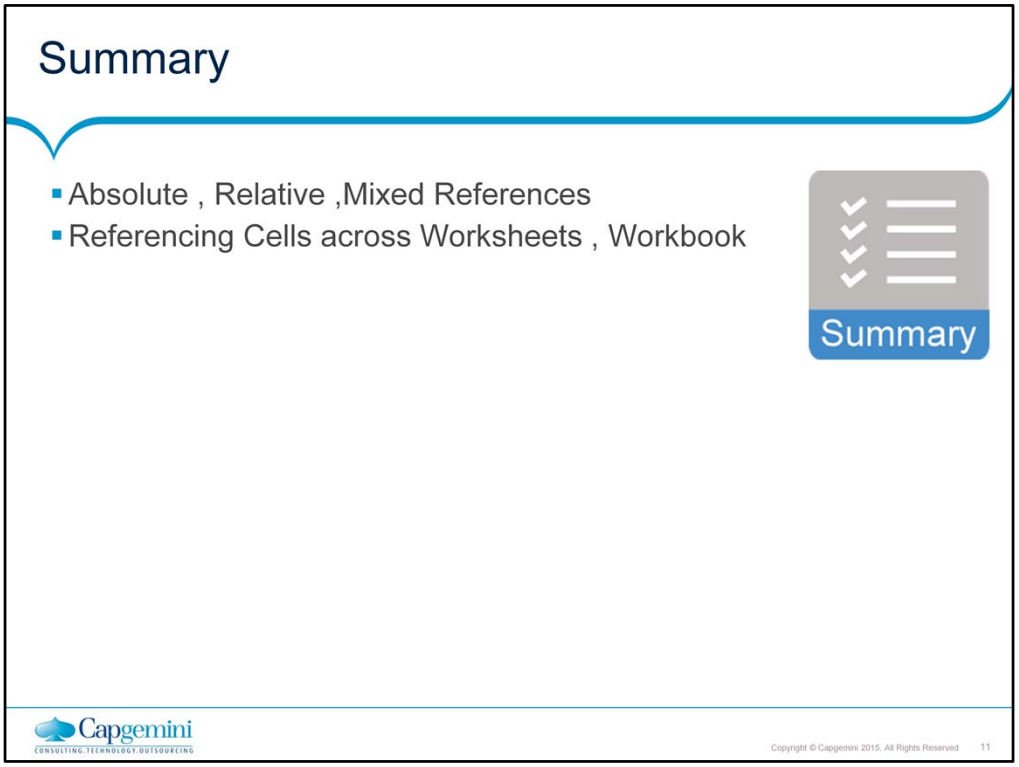

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Review Question

- Question 1 : How to specify cell range from A9 to A99 in Excel?
  - (A9, A99)
  - (A9 to A99)
  - (A9 : A99)
  - (A9 – A99)

- Question 2 : If the cell B1 contains the formula = A1, which of the following statements is true.
  - There is a relative reference to cell A1
  - There is an absolute reference to cell A1
  - Further changes in value of A1 will not affect the value of B1
  - Further changes in value of B1 will affect the value of A1.

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 12

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