

COMP1022Q

Introduction to Computing with Excel VBA

Different Types of Variable in VBA

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Variables

We have seen this before

- You can think of a variable as a box
- There are different types of box which hold different things
- In computers, 'string' means 'text'
- Here is some VBA code which stores some text:

David
Name

*Then we
store the
result of the
input box in it*

```
Dim Name As String  
Name = InputBox("What is your name?")
```

*First we make
the text variable*

Different Types of Variable

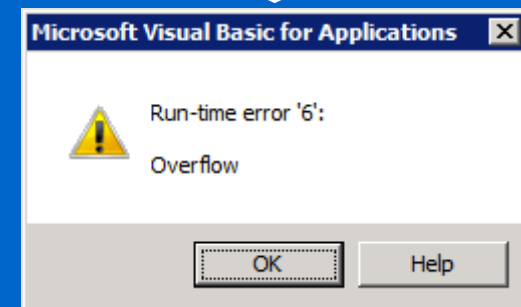
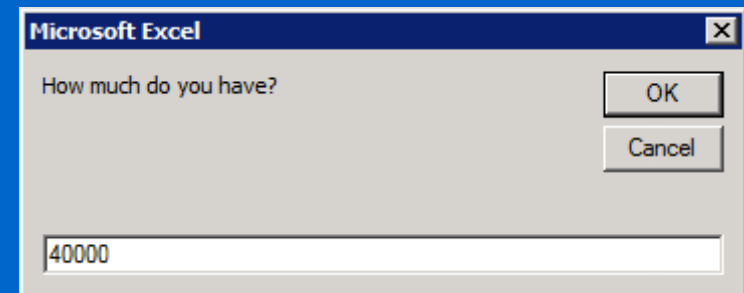
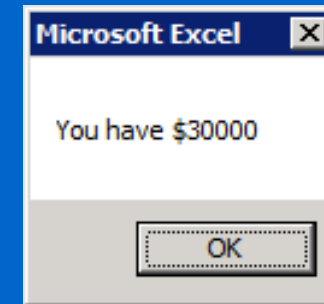
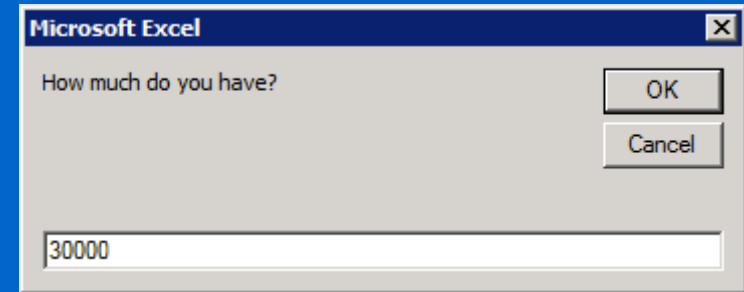
- In addition to the *String* variable which stores text, there are many other types of variable for storing other things
- In this presentation, we look at these types of variables:
 1. *Integer* for storing (small) integer numbers
 2. *Long* for storing (large) integer numbers
 3. *Single* for (less accurate) storing of decimal numbers
 4. *Double* for (more accurate) storing of decimal numbers
- These are not the only types of variable, we may look at other types later

Integer Variable

- If you want to store an integer number in VBA, you can use an *Integer* variable, i.e.

```
Dim money As Integer  
money = InputBox("How much do you have?")  
MsgBox "You have $" & money
```

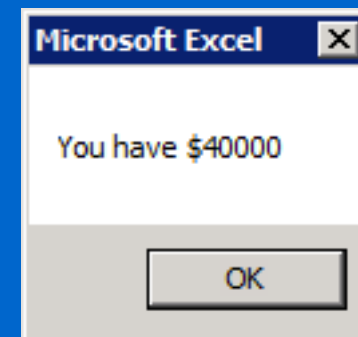
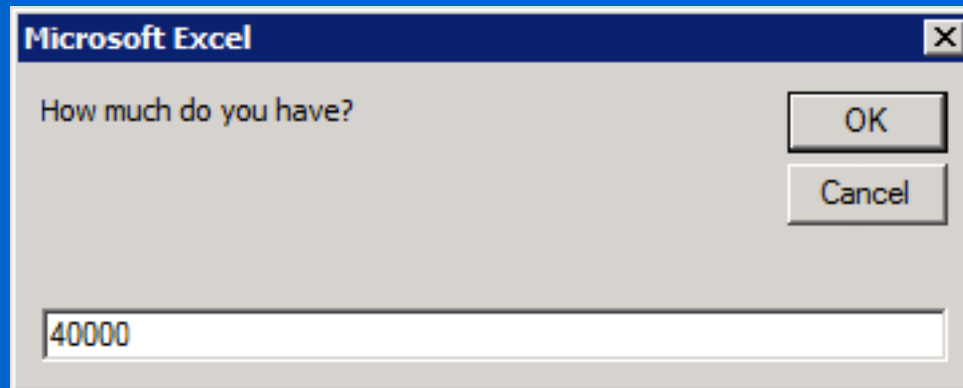
- An integer variable can only handle a number in the range -32,768 to 32,767
- If you try to put a number that is outside that range into an Integer variable, the code will show an error



Long Variable

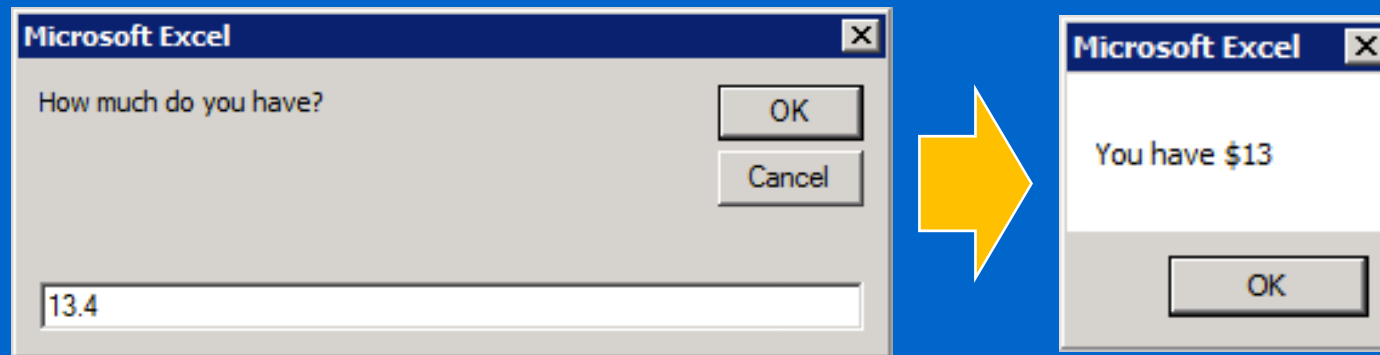
- If you want to store a number larger than 32,767 or smaller than -32,768, use a *Long* variable
- A Long variable can store a number in the range -2,147,483,648 to 2,147,483,647

```
Dim money As Long  
money = InputBox("How much do you have?")  
MsgBox "You have $" & money
```



Using a Number Which has a Decimal Place

- If you try to enter a number which has a decimal place (such as 13.4) in the previous two examples, the decimal place is dumped and the number is automatically rounded up or down i.e.

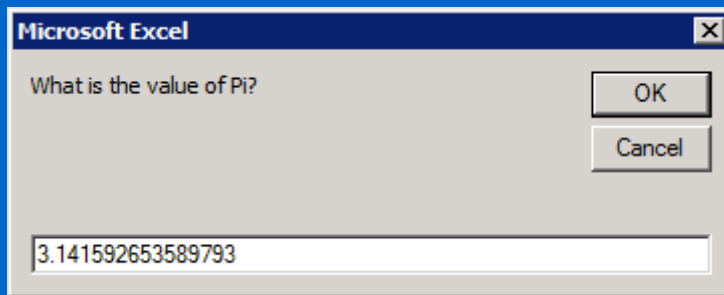


- If you want to keep the decimal place, you need to use a variable type which can handle it, see next slide

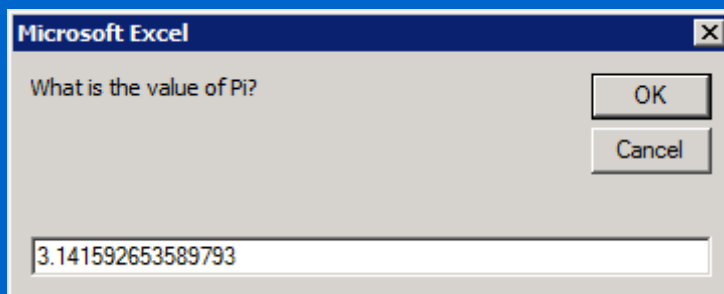
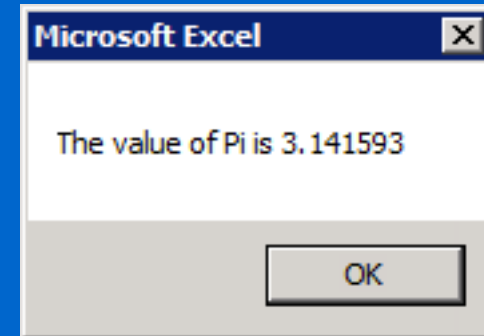
Single and Double

- Single and Double can both handle a decimal place, but Double has more accuracy

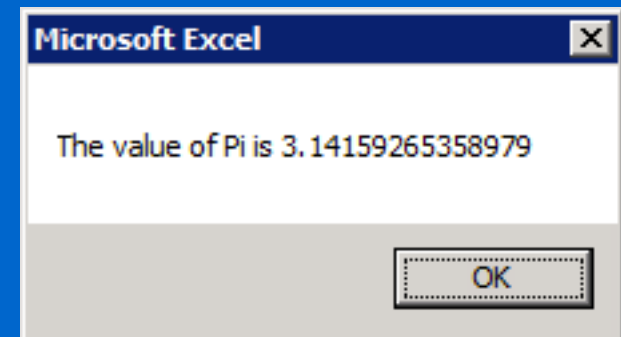
```
Dim pi As Single  
pi = InputBox("What is the value of Pi?")  
MsgBox "The value of Pi is " & pi
```



Single



Double



```
Dim pi As Double  
pi = InputBox("What is the value of Pi?")  
MsgBox "The value of Pi is " & pi
```