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Single Document Based

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Abstract: **The Event object keeps track and lets you react to keyboard and mouse events, such as when a particular keyboard or mouse button is pressed. This is realized through 4 event handlers and a few Event object properties.I n previous lessons, we have only learned how to trigger events or control program flow by clicking the mouse. In this chapter, you will learn how to use the keyboard to trigger an event using the keyboard beside using the mouse. When the user presses a key on the keyboard, it will trigger an event or a series of events. These events are called the keyboard events. In Visual Basic, the three basic event procedure to handle the keyboard events are KeyPress, Keydown and KeyUp**

I. KEYBOARD HANDLING:

- STEP 1: In this program we are going to create an application which takes the user input i.e. text from the keyboard and display it on the screen.
- Step 2:start VC++

Go to file -> new -> select MFCAppWizard (exe).

Write the project name as key specify the location and click ok .

- Next we select the single document and click next button.
- Select database support as none and click finish.
  The four classes will be created automatically are:-
  - CKeyApp
  - CMainFrame
  - CKeyView
  - CKeyDoc

II. SETTING UP STORAGE FOR OUR DATA

Go to fileview -> header files -> keyDoc.h(double click)->

Write

```
Class CKeyDoc::public CDocument

{

Protected:

CKeyDoc();

DECLARE_DYNCREATE(CKeyDoc)

CString d;
```

Here d is a variable in which we will store the characters that the user will type from the keyboard we have declared the "d" variable with the class CString.

CString is an in built class that handles text string. we have stored the "d" variablein the documents header file KeyDoc.h

- Go to fileview -> source files -> keyDoc.cpp (double click -> write in the constructor

```
CKeyDoc:: CKeyDoc()
{
        D=" ";
}
```

Here we have initialized the d vriable to null.

III. READING KEYSTROKES

- Go to view -> class wizard message maps -> select CKeyView class in the name box -> select WM_CHAR in the messages box (double click on it) -> Edit code

Here we have opened class wizard from the view menu and we have selected the message WM_CHAR now whenever a user types or presses a key from the keyboard , windows will generate this msg WM_CHAR and will pass this msg WM_CHAR and will pass this message to the application .the application will then call the function OnChar() according to the message . this is known as message passing.
Make sure that the class CKeyView is selected in the class name box.
Now we will write the code for OnChar() function.

```
Void CkeyView :: OnChar(UINT nChar
,UINT nFlags,UINT nRepCnt)
{
CKey *  pDoc= GetDocument();
```

```
ASSERT_VALID(pDoc);
pDoc->d+=nChar;
Invalidate();
}
```

Onchar() is the method that will be called everytime the user types a character from the keyboard .eventually the characters will get stored automatically in variable OnChar . we have to store the characters from nchar to our variable "d".

The first two lines of code written to connect you to the document object.

pDoc is an inbuilt pointer of the document class . GetDocument() is a function which is linking view to the document .

ASSERT VALID() is a function which is confirming that pDoc document is created.

Invalidate() function is used to save the data .

- Go to class -> select the class CKeyView -> OnDraw()(double click)
- Void CKeyView: :OnDraw(CDc*pDC)

```
{
CKeyDoc * pDoc = GetDocument ();
ASSERT_VALID(pDoc)
PDC->TextOut(0,0,pDoc-> d);
```

OnDraw() is a function which is used to display data on the screen

TextOu() is a function of view class which is used to draw text string on the screen.

(0,0) are the screen coordinates i.e.(x,y) coordinates pDc is an inbuilt pointer of view class.

To run the program go to built -> execute

- Go to Build -> Execute

IV. SUMMARY:

In Visual Basic, we can write codes for handling events triggered by input from the keyboard. When the user presses a key on the keyboard, it will trigger an event or a series of events. These events are called the keyboard events. In Visual Basic, the three basic event procedure to handle the keyboard events are KeyPress, Keydown and KeyUp

The keyboard event occurs when the user presses any key that corresponds to a certain alphanumeric value or an action such as Enter, spacing, backspace and more. Each of those value or action is represented by a set of code known as the ASCII . ASCII stands for American Standard Code for Information Interchange. ASCII stands for American Standard Code for Information Interchange. Computers can only understand numbers, so an ASCII code is the numerical representation of a character such as 'a' or '@' or an action of some sort. ASCII was developed a long time ago and now the non-printing characters are rarely used for their original purpose.In order to write code for the Keyboard events , we need to know the ASCII and the corresponding values