

C listing: MF2C.C

```

/*****
/*
/*-----**/
/*   Task:           : Demonstrates key read from MF-II keyboards.  */
/*-----**/
/*   Author          : Michael Tischer                             */
/*   Developed on    : 01/01/92                                     */
/*   Last update     : 04/07/95                                     */
*****/

/*== Add include files =====*/

#include <stdio.h>
#include <dos.h>

/*== Type definitions =====*/

typedef unsigned char BYTE;                               /* Create a byte */
typedef unsigned int WORD;

/*== Constants =====*/

#define TRUE  ( 0 == 0 )                                  /* Constants make reading */
#define FALSE ( 0 == 1 )                                  /* program code easier    */

/*== Screen routines (Microsoft C) =====*/

#ifndef __TURBOC__                                         /* Microsoft C? */

/*****
/* Gotoxy           : Places cursor.                             */

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/* Input      : Cursor coordinates          */
/* Output     : None                        */
/*****

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void gotoxy( int x, int y )

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{
    union REGS regs;          /* Register variables for interrupt call */

    regs.h.ah = 0x02;         /* Function number for interrupt call */
    regs.h.bh = 0;            /* Color */
    regs.h.dh = y - 1;
    regs.h.dl = x - 1;
    int86( 0x10, &regs, &regs );          /* Interrupt call */
}

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/*****
/* clrscr     : Clears the screen.          */
/* Input      : None                        */
/* Output     : None                        */
/*****

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void clrscr( void )

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{
    union REGS regs;          /* Register variables for interrupt call */

    regs.h.ah = 0x07;         /* Function number for interrupt call */
    regs.h.al = 0x00;
    regs.h.ch = 0;
    regs.h.cl = 0;
    regs.h.dh = 24;
    regs.h.dl = 79;
    int86( 0x10, &regs, &regs );          /* Interrupt call */
}

```

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    gotoxy( 1, 1 );                                /* Set cursor */
}

#endif

/*****
/* HexByte : Changes a byte into a two-digit hex string.      */
/* Input   : BVAL = Byte to be converted                      */
/* Output  : Two-digit hex string                             */
*****/

char *HexByte( BYTE bval )
{
    char HexDigits[16] = "0123456789ABCDEF";
    static char dummy[3] = "00";

    dummy[0] = HexDigits[ bval >> 4 ];                /* Convert both */
    dummy[1] = HexDigits[ bval & 0x0F ];              /* nibbles to hex */
    return dummy;
}

/*****
/* TestMF: Tests whether the extended BIOS functions for reading the */
/*         MF-II keyboard are available.                               */
/* Input   : None                                                    */
/* Output  : TRUE if the functions are available, otherwise FALSE    */
*****/

int TestMF( void )
{
    union REGS regs;                /* Register variables for interrupt call */

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regs.x.ax = 0x1200; /* Extended status function for MF-II keyboards */
int86( 0x16, &regs, &regs );
return ( regs.x.ax != 0x1200 );      /* AX=0x1200 : Function absent */
}

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/*****
/* GetMFKey : Reads a key using extended keyboard function 10H.      */
/* Input   : None                                                    */
/* Output  : The returned keycode                                    */
*****/

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WORD GetMFKey( void )

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{
    union REGS regs;          /* Register variables for interrupt call */

    regs.h.ah = 0x10;         /* Extended read function for MF-II keyboards */
    int86( 0x16, &regs, &regs );
    return regs.x.ax;         /* Return keycode */
}

```

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/*****
/*                               M A I N   P R O G R A M                               */
*****/

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void main( void )

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{
    WORD pdkey;

    clrscr();
    printf( "MF2C - (c) 1992 by Michael Tischer\n\n" );
    if ( TestMF() )
    {

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printf( "BIOS functions implemented for MF-II keyboards.\n\n" \
        "Press any key or combination to display key codes.\n\n" \
        "Press <Esc> to end the program.\n\n" );

do
    /* Input loop */
    {
        pdkey = GetMFKey();
        printf( "Scan : %s ", HexByte((BYTE) (pdkey >> 8)) ); /* Get key */
        printf( "ASCII: %s", HexByte((BYTE) (pdkey & 255)) );
        if ( ((pdkey & 255) == 0xe0) && ((pdkey & 65280) != 0) )
            printf( " <---- MF-II key" );
        printf( "\n" );
    }
    while ( pdkey != 0x011b ); /* Repeat until user presses <ESC> */
    printf( "\n\n" );
}
else
    printf( "No BIOS extensions available for MF-II keyboards!");
}

```