

```

/*
TITLE: ch8_p5.C
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REVISION HISTORY:
    0    Initial issue.
DESCRIPTION:
    Program to Demonstrate the output of each of the functions in
    the character handling library
*/

/* PREPROCESSOR DIRECTIVES */
#include <stdio.h>
#include <stdlib.h>
#include <string.h>
#include <ctype.h>

/* FUNCTION PROTOTYPES */

/* MAIN FUNCTION */
int main(void)
{

    /* VARIABLE DECLARATIONS */

    int test_char;
    int test_result;
    int Ralph;

    /* MAIN BODY OF PROGRAM */

    printf("Enter a character to be tested:");
    scanf("%c", &test_char);

    /* Function isdigit: Returns a true value if c is a digit and 0 (false) otherwise.*/
    test_result = isdigit(test_char);
    printf("isdigit equals: %d\n", test_result);

    if (test_result != 0)
    {
        printf("It's a digit!\n");
    }
}

```

```
else
{
    printf("It is not a digit!\n");
}
```

```
/*Function isalpha: Returns a true value if c is a letter
and 0 (false) otherwise.*/
```

```
test_result = isalpha(test_char);
printf("isalpha equals: %d\n", test_result);
```

```
if (test_result != 0)
{
    printf("It's a letter!\n");
}
else
{
    printf("It is not a letter!\n");
}
```

```
/*Function isalnum: Returns a true value if c is a digit or a letter
and 0 (false) otherwise.*/
```

```
test_result = isalnum(test_char);
printf("isalnum equals: %d\n", test_result);
```

```
if (test_result != 0)
{
    printf("It's a letter or a number!\n");
}
else
{
    printf("It is not a letter or a number.\n");
}
```

```
/*Function isxdigit: Returns a true value if c is a hexadecimal digit
character and 0 (false) otherwise.*/
```

```
test_result = isxdigit(test_char);
printf("isxdigit equals: %d\n", test_result);
```

```
if (test_result != 0)
{
    printf("It's a hexadecimal digit!\n");
}
else
{
    printf("It is not a hexadecimal digit!\n");
}
```

```
/*Function islower: Returns a true value if c is a lowercase letter
and 0 (false) otherwise.*/
```

```
test_result = islower(test_char);
printf("islower equals: %d\n", test_result);
```

```
if (test_result != 0)
{
    printf("It's a lowercase letter!\n");
}
else
{
    printf("It is not a lowercase letter!\n");
}
```

```
/*Function isupper:Returns a true value if c is an uppercase letter
and 0 (false) otherwise.*/
```

```
test_result = isupper(test_char);
printf("isupper equals: %d\n", test_result);
```

```
if (test_result != 0)
{
    printf("It's an uppercase letter!\n");
}
else
{
    printf("It is not an uppercase letter!\n");
}
```

```
/*Function isspace: Returns a true value if c is a whitespace newline('\n'), space (' '),
form feed ('\f'), carriage return ('\r'), horizontal tab ('\t'), or
vertical tab ('\v') - and 0 (false) otherwise.*/
```

```
test_result = isspace(test_char);
printf("isspace equals: %d\n", test_result);
```

```
if (test_result != 0)
{
    printf("It's a space!\n");
}
else
{
    printf("It is not a space!\n");
}
```

```
/*Function iscntrl: Returns a true value if c is a control character
and 0 (false) otherwise.*/
```

```
test_result = iscntrl(test_char);
```

```
printf("isctrl equals: %d\n", test_result);
```

```
if (test_result != 0)
{
    printf("It's a control letter!\n");
}
else
{
    printf("It is not a control letter!\n");
}
```

*/*Function ispunct: Returns a true value if c is a printing character other than a space, a digit, or a letter and 0 (false) otherwise.*/*

```
test_result = ispunct(test_char);
printf("ispunct equals: %d\n", test_result);
```

```
if (test_result != 0)
{
    printf("It's a printing character!\n");
}
else
{
    printf("It is not a printing character!\n");
}
```

*/*Function isprint: Returns a true value if c is a printing character including space, and 0 (false) otherwise.*/*

```
test_result = isprint(test_char);
printf("isprint equals: %d\n", test_result);
```

```
if (test_result != 0)
{
    printf("It's a printing character!\n");
}
else
{
    printf("It is not a printing character!\n");
}
```

*/*Function isgraph:Returns a true value if c is a printing character other than a space, and 0 (false) otherwise.*/*

```
test_result = isgraph(test_char);
printf("isgraph equals: %d\n", test_result);
```

```
if (test_result != 0)
{
    printf("It's a space!\n");
}
else
{
```

```
    printf("It is not a space!\n");  
}
```

```
/*Function tolower: If c is an uppercase letter, returns c as a lowercase letter, otherwise  
returns c unchanged.*/
```

```
printf("Lowercase:\t%c\n", tolower(test_char));
```

```
/*Function toupper: If c is an lowercase letter, returns c as a uppercase letter, otherwise  
returns c unchanged.*/
```

```
printf("Uppercase:\t%c\n", toupper(test_char));
```

```
printf("Enter 0 and carriage return to exit:\n");
```

```
scanf("%d", &Ralph);
```

```
return 0;
```

```
}
```

```
/* FUNCTION DEFINITIONS */
```