

C9X Revision Proposal
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Title: String Classification and Coverision Functions
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Proposal Category:
 ___ Editorial change/non-normative contribution
 ___ Correction
 XX New feature
 ___ Addition to obsolescent feature list
 ___ Addition to Future Directions
 ___ Other (please specify)
Area of Standard Affected:
 ___ Environment
 ___ Language
 ___ Preprocessor
 XX Library
 ___ Macro/typedef/tag name
 XX Function
 ___ Header
 ___ Other (please specify)
Prior Art: Microsoft C and others
Target Audience: All C programmers

Related Documents (if any):

Proposal Attached: XX Yes ___ No, but what's your interest?
Abstract: The Standard C Library does not declare
___ functions useful for testing and mapping of strings.

Proposal:

Problem Statement -- The header <ctype.h> declares several functions useful for testing and mapping characters. However, no equivalent functions exist in the Standard C Library for the testing and mapping of strings.

Conceptual Model -- The additional functions, proposed herein, for the classification and conversion of strings behave much the same as the existing functions declared in <ctype.h>. Since the Standard also reserves all external names beginning with the letters "is" or "to", the names of the additional functions are the same as the existing functions with the letter 's' appended: "isalnum", "isalphas", "iscntrl", "isdigits", "isgraphs", "islowers",

"isprints", "ispuncts", "isspaces", "isuppers", "isxdigits",
"tolowers", and "toupers".

Syntax, Synopsis, Keywords, Tokens, Operators, Directives --

```
"int isalnums(const char *s);"
```

The function returns zero if any character of "s" (except the terminating null character) causes "isalnum" to return zero.

```
"int isalphas(const char *s);"  
"int iscntrls(const char *s);"  
"int isdigits(const char *s);"  
"int isgraphs(const char *s);"  
"int islower(const char *s);"  
"int isprints(const char *s);"  
"int ispuncts(const char *s);"  
"int isspace(const char *s);"  
"int isuppers(const char *s);"  
"int isxdigits(const char *s);"
```

```
"char *tolowers(char *s);"
```

The function stores "(char)tolower" for each character of "s" (except the terminating null character) and returns "s".

```
"char *toupers(char *s);"
```

Implementation Issues -- A sample definition of "isdigit":

```
#include <ctype.h>  
  
int (isdigit)(const char *s)  
{  
    while (*s)  
        if (!isdigit(*s++))  
            return 0;  
    return 1;  
}
```

A sample definition of "tolower":

```
#include <ctype.h>  
  
char *(tolower)(char *s)  
{  
    char *p;  
  
    for (p = s; *p; p++)  
        *p = (char)tolower(*p);  
    return s;  
}
```