Appendix E Common C Functions

This appendix lists the function prototypes contained in each of the header files supplied with most C compilers. Functions that have an asterisk after them were covered in this book.
The functions are listed alphabetically. Following each name and header file is the complete prototype. Notice that the header file prototypes use a notation different from that used in this book. For each parameter a function takes, only the type is given in the prototype; no parameter name is included. Here are two examples:

```
int func1(int, int *);
int func1(int x, int *y);
```

Both declarations specify two parameters--the first a type int, and the second a pointer to type int. As far as the compiler is concerned, these two declarations are equivalent.

Table E.1. Common C functions listed in alphabetical order.

Function	Header File	Function Prototype
abort*	STDLIB.H	void abort(void);
abs	STDLIB.H	int abs(int);
acos*	MATH.H	double acos(double);
asctime*	TIME.H	char *asctime(const struct tm *);
asin*	MATH.H	double asin(double);
assert*	ASSERT.H	void assert(int);
atan*	MATH.H	double atan(double);
atan2*	MATH.H	double atan2(double, double);
atexit*	STDLIB.H	int atexit(void (*)(void));
atof*	STDLIB.H	double atof(const char *);
atof*	MATH.H	double atof(const char *);
atoi*	STDLIB.H	int atoi(const char *);
atol*	STDLIB.H	long atol(const char *);
bsearch*	STDLIB.H	void *bsearch(const void *, const void *, size_t, size_t, int(*) (const void *, const void *));
calloc*	STDLIB.H	void *calloc(size_t, size_t);
ceil*	MATH.H	double ceil(double);
clearerr	STDIO.H	void clearerr(FILE *);
clock*	TIME.H	clock_t clock(void);
cos*	MATH.H	double cos(double);
cosh*	MATH.H	double cosh(double);
ctime*	TIME.H	char *ctime(const time_t *);
difftime	TIME.H	double difftime(time_t, time_t);
div	STDLIB.H	div_t div(int, int);
exit*	STDLIB.H	void exit(int);
exp*	MATH.H	double exp(double);
fabs*	MATH.H	double fabs(double);

fclose*	STDIO.H	int fclose(FILE *);
fcloseall*	STDIO.H	int fcloseall(void);
feof*	STDIO.H	int feof(FILE *);
fflush*	STDIO.H	int fflush(FILE *);
fgetc*	STDIO.H	int fgetc(FILE *);
fgetpos	STDIO.H	int fgetpos(FILE *, fpos_t *);
fgets*	STDIO.H	char *fgets(char *, int, FILE *);
floor*	MATH.H	double floor(double);
flushall*	STDIO.H	int flushall(void);
fmod*	MATH.H	double fmod(double, double);
fopen*	STDIO.H	FILE *fopen(const char *, const char *);
fprintf*	STDIO.H	int fprintf(FILE *, const char *, ...);
fputc*	STDIO.H	int fputc(int, FILE *);
fputs*	STDIO.H	int fputs(const char *, FILE *);
fread*	STDIO.H	size_t fread(void *, size_t, size_t, FILE *);
free*	STDLIB.H	void free(void *);
freopen	STDIO.H	FILE *freopen(const char *, const char *, FILE *);
frexp*	MATH.H	double frexp(double, int *);
fscanf*	STDIO.H	int fscanf(FILE *, const char *, ...);
fseek*	STDIO.H	int fseek(FILE *, long, int);
fsetpos	STDIO.H	int fsetpos(FILE *, const fpos_t *);
ftell*	STDIO.H	long ftell(FILE *);
fwrite*	STDIO.H	size_t fwrite(const void *, size_t, size_t, FILE *);
getc*	STDIO.H	int getc(FILE *);
getch*	STDIO.H	int getch(void);
getchar*	STDIO.H	int getchar(void);
getche*	STDIO.H	int getche(void);
getenv	STDLIB.H	char *getenv(const char *);
gets*	STDIO.H	char *gets(char *);
gmtime	TIME.H	struct tm *gmtime(const time_t *);
isalnum*	CTYPE.H	int isalnum(int);
isalpha*	CTYPE.H	int isalpha(int);
isascii*	CTYPE.H	int isascii(int);
iscntrl*	CTYPE.H	int iscntrl(int);
isdigit*	CTYPE.H	int isdigit(int);
isgraph*	CTYPE.H	int isgraph(int);
islower*	CTYPE.H	int islower(int);
isprint*	CTYPE.H	int isprint(int);

ispunct*	CTYPE.H	int ispunct(int);
isspace*	CTYPE.H	int isspace(int);
isupper*	CTYPE.H	int isupper(int);
isxdigit*	CTYPE.H	int isxdigit(int);
labs	STDLIB.H	long int labs(long int);
ldexp	MATH.H	double ldexp(double, int);
ldiv	STDLIB.H	ldiv_t div(long int, long int);
localtime*	TIME.H	struct tm *localtime(const time_t *);
log*	MATH.H	double log(double);
log10*	MATH.H	double log10(double);
malloc*	STDLIB.H	void *malloc(size_t);
mblen	STDLIB.H	int mblen(const char *, size_t);
mbstowcs	STDLIB.H	size_t mbstowcs(wchar_t *, const char *, size_t);
mbtowc	STDLIB.H	int mbtowc(wchar_t *, const char *, size_t);
memchr	STRING.H	void *memchr(const void *, int, size_t);
memcmp	STRING.H	int memcmp(const void *, const void *, size_t);
memcpy	STRING.H	void *memcpy(void *, const void *, size_t);
memmove	STRING.H	void *memmove(void *, const void*, size_t);
memset	STRING.H	void *memset(void *, int, size_t);
mktime*	TIME.H	time_t mktime(struct tm *);
modf	MATH.H	double modf(double, double *);
perror*	STDIO.H	void perror(const char *);
pow*	MATH.H	double pow(double, double);
printf*	STDIO.H	int printf(const char *, ...);
putc*	STDIO.H	int putc(int, FILE *);
putchar*	STDIO.H	int putchar(int);
puts*	STDIO.H	int puts(const char *);
qsort*	STDLIB.H	void qsort(void*, size_t, size_t, int (*)(const void*, const void *));
rand	STDLIB.H	int rand(void);
realloc*	STDLIB.H	void *realloc(void *, size_t);
remove*	STDIO.H	int remove(const char *);
rename*	STDIO.H	int rename(const char *, const char *);
rewind*	STDIO.H	void rewind(FILE *);
scanf*	STDIO.H	int scanf(const char *, ...);
setbuf	STDIO.H	void setbuf(FILE *, char *);
setvbuf	STDIO.H	int setvbuf(FILE *, char *, int, size_t);
sin*	MATH.H	double sin(double);
sinh*	MATH.H	double sinh(double);

sleep*	TIME.H	void sleep(time_t);
sprintf	STDIO.H	int sprintf(char *, const char *, ...);
sqrt*	MATH.H	double sqrt(double);
srand	STDLIB.H	void srand(unsigned);
sscanf	STDIO.H	int sscanf(const char *, const char *, ...);
strcat*	STRING.H	char *strcat(char *,const char *);
strchr*	STRING.H	char *strchr(const char *, int);
strcmp*	STRING.H	int strcmp(const char *, const char *);
strcmpl*	STRING.H	int strcmpl(const char *, const char *);
strcpy*	STRING.H	char *strcpy(char *, const char *);
strcspn*	STRING.H	size_t strcspn(const char *, const char *);
strdup*	STRING.H	char *strdup(const char *);
strerror	STRING.H	char *strerror(int);
strftime*	TIME.H	size_t strftime(char *, size_t, const char *, const struct tm *);
strlen*	STRING.H	size_t strlen(const char *);
strlwr*	STRING.H	char *strlwr(char *);
strncat*	STRING.H	char *strncat(char *, const char *, size_t);
strncmp*	STRING.H	int strncmp(const char *, const char *, size_t);
strncpy*	STRING.H	char *strncpy(char *, const char *, size_t);
strnset*	STRING.H	char *strnset(char *, int, size_t);
strpbrk*	STRING.H	char *strpbrk(const char *, const char *);
strrchr*	STRING.H	char *strrchr(const char *, int);
strspn*	STRING.H	size_t strspn(const char *, const char *);
strstr*	STRING.H	char *strstr(const char *, const char *);
strtod	STDLIB.H	double strtod(const char *, char **);
strtok	STRING.H	char *strtok(char *, const char*);
strtol	STDLIB.H	long strtol(const char *, char **, int);
strtoul	STDLIB.H	unsigned long strtoul(const char*, char **, int);
strupr*	STRING.H	char *strupr(char *);
system*	STDLIB.H	int system(const char *);
tan*	MATH.H	double tan(double);
tanh*	MATH.H	double tanh(double);
time*	TIME.H	time_t time(time_t *);
tmpfile	STDIO.H	FILE *tmpfile(void);
tmpnam*	STDIO.H	char *tmpnam(char *);
tolower	CTYPE.H	int tolower(int);
toupper	CTYPE.H	int toupper(int);
ungetc*	STDIO.H	int ungetc(int, FILE *);

va_arg*	STDARG.H	(type) va_arg(va_list, (type));
va_end*	STDARG.H	void va_end(va_list);
va_start*	STDARG.H	void va_start(va_list, lastfix);
vfprintf	STDIO.H	int vfprintf(FILE *, constchar *, ...);
vprintf	STDIO.H	int vprintf(FILE*, constchar *, ...);
vsprintf	STDIO.H	int vsprintf(char *, constchar *, ...);
wcstombs	STDLIB.H	size_t wcstombs(char *, const wchar_t *, size_t);
wctomb	STDLIB.H	int wctomb(char *, wchar_t);