```c
/* WERTEB.C */

/* Bestimmung der maximalen und minimalen Werte von unsigned bzw. signed -
*\
\* Typen von char, short, int, long                                    */

#include <stdio.h>

int main(void){
     unsigned char  uc=(unsigned char)~0U;
     unsigned short us=(unsigned short)~0U;
     unsigned int   ui=~0U;
     unsigned long  ul=~0UL;
     unsigned long long ull=~0ULL;
     char     scu=1<<(sizeof(char)*8-1), sco=~scu;
     short    ssu=1<<(sizeof(signed short)*8-1), sso=~ssu;
     int      siu=1<<(sizeof(signed int)*8-1), sio=~siu;
     long     slu=1L<<(sizeof(signed long)*8-1), slo=~slu;
     long long sllu=1LL<<(sizeof(signed long long)*8-1), sllo=~sllu;

     printf("\n\nAusgabe der Zahlbereichsgrenzen            dezimal");
     printf("           hexadezimal\n\n");
     printf("max. unsigned char-Wert     = %20d  %20X\n",uc,uc);
     printf("min. unsigned char-Wert     = %20d  %20X\n\n",0U,0U);
     printf("max. unsigned short-Wert    = %20u  %20X\n",us,us);
     printf("min. unsigned short-Wert    = %20u  %20X\n\n",0U,0U);
     printf("max. unsigned int-Wert      = %20u  %20X\n",ui,ui);
     printf("min. unsigned int-Wert      = %20u  %20X\n\n",0U,0U);
     printf("max. unsigned long-Wert     = %20lu  %20lX\n",ul,ul);
     printf("min. unsigned long-Wert     = %20lu  %20lX\n\n",0UL,0UL);
     printf("max. signed char-Wert       = %20d  %20X\n",sco,sco);
     printf("min. signed char-Wert       = %20d  %20X\n\n",scu,scu);
     printf("max. signed short-Wert      = %20d  %20X\n",sso,sso);
     printf("min. signed short-Wert      = %20d  %20X\n\n",ssu,ssu);
     printf("max. signed int-Wert        = %20d  %20X\n",sio,sio);
     printf("min. signed int-Wert        = %20d  %20X\n\n",siu,siu);
     printf("max. signed long-Wert       = %20ld  %20lX\n",slo,slo);
     printf("min. signed long-Wert       = %20ld  %20lX\n\n",slu,slu);
     printf("max. unsigned long long Wert = %20llu  %20llX\n",ull,ull);
     printf("min. unsigned long long Wert = %20llu  %20llX\n\n",
                                            0ULL,0ULL);
     printf("max. signed long long Wert   = %20lld  %20llX\n",sllo,sllo);
     printf("min. signed long long Wert   = %20lld  %20llX\n\n",
                                            sllu,sllu);
     getc(stdin);
     return 0;
}
```

```
/*
Ausgabe der Zahlbereichsgrenzen              dezimal          hexadezimal

max. unsigned char-Wert       =                    255                   FF
min. unsigned char-Wert       =                      0                    0

max. unsigned short-Wert      =                  65535                 FFFF
min. unsigned short-Wert      =                      0                    0

max. unsigned int-Wert        =             4294967295             FFFFFFFF
min. unsigned int-Wert        =                      0                    0

max. unsigned long-Wert       =             4294967295             FFFFFFFF
min. unsigned long-Wert       =                      0                    0

max. signed char-Wert         =                    127                   7F
min. signed char-Wert         =                   -128             FFFFFF80

max. signed short-Wert        =                  32767                 7FFF
min. signed short-Wert        =                 -32768             FFFF8000

max. signed int-Wert          =             2147483647             7FFFFFFF
min. signed int-Wert          =            -2147483648             80000000

max. signed long-Wert         =             2147483647             7FFFFFFF
min. signed long-Wert         =            -2147483648             80000000

max. unsigned long long Wert = 18446744073709551615     FFFFFFFFFFFFFFFF
min. unsigned long long Wert =                      0                    0

max. signed long long Wert   =  9223372036854775807     7FFFFFFFFFFFFFFF
min. signed long long Wert   = -9223372036854775808     8000000000000000
*/
```