

```
//fwn/typedefs.h
#include <stdio.h>
#include <stdlib.h>
```

```
typedef size_t st$      typedef st$ nst$    st stl, nstl$
typedef div_t dt$      typedef dt$ ndt$    st dtl, ndtl$
typedef clock_t ct$    typedef ct$ nct$    st ctl, nctl$
typedef FILE$ fd$      typedef fd$ nfd$    st fdl, nfdl$
typedef void$ p$       typedef p$ np$      st pl, npl$
typedef void n$
```

2 nc is used as the type name for a standard C-style string.

s is used in String.h as a type name for a string with more functionality. ¢/
typedef char c\$ typedef c\$ nc\$ st cl, ncl\$

```
typedef unsigned char$ b$    typedef b$ nb$    st bl, nbl$
typedef int d$              typedef d$ nd$    st dl, ndl$
typedef int tf$             typedef tf$ ntfl$   st tfl, ntfl$
typedef unsigned int u$     typedef u$ nu$    st ul, nul$
typedef long ld$            typedef ld$ nld$   st ldl, nldl$
typedef unsigned long lu$   typedef lu$ nlu$   st lul, nlul$
typedef double f$           typedef f$ nf$    st fl, nfl$
typedef long double lf$     typedef lf$ nlf$   st lfl, nlfl$
```

```
#define Typedefs_Q \
    stl = sizeof(st)$ nstl = sizeof(nst)$ \
    \
    dtl = sizeof(dt)$ ndtl = sizeof(ndt)$ \
    ctl = sizeof(ct)$ nctl = sizeof(nct)$ \
    fdl = sizeof(fd)$ nfdl = sizeof(nfd)$ \
    pl = sizeof(p)$ npl = sizeof(np)$ \
    \
    cl = sizeof(c)$ ncl = sizeof(nc)$ \
    bl = sizeof(b)$ nbl = sizeof(nb)$ \
    dl = sizeof(d)$ ndl = sizeof(nd)$ \
    tfl = sizeof(tf)$ ntfl = sizeof(ntf)$ \
    ul = sizeof(u)$ nul = sizeof(nu)$ \
    ldl = sizeof(nd)$ nldl = sizeof(nld)$ \
    lul = sizeof(lu)$ nlul = sizeof(nlu)$ \
    fl = sizeof(f)$ nfl = sizeof(nf)$ \
    lfl = sizeof(lf)$ nlfl = sizeof(nlf)$
```

```
#define begin d main(d argc, nc$ argv){ Typedefs_Q
#define end }
#define m(a) malloc(a)
#define f(p) free(p)
#define tstr typedef struct
```