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xxxfor - Transforms input longitude and latitude to Easting and Northing for the xxx projection

SYNTAX

FUNCTION xxxfor (lon, lat, x, y)

```
double lon;
double lat;
double *x;
double *y;
```

PARAMETERS

lon (input, double)

Input longitude. Value given in radians.

lat (input, double)

Input latitude. Value given in radians.

x (output, double)

Easting value. Value given in meters.

y (output, double)

Northing value. Value given in meters.

DESCRIPTION

xxxfor() converts input longitude and latitude to the corresponding Easting and Northing for the xxx projection (xxx is replaced by the abbreviation of the projection). The following subroutines follow this general format:

```
utmfor(lon, lat, x, y)      -- Universal Transverse Mercator (UTM)
stplnfor(lon, lat, x, y)    -- State Plane
alberfor(lon, lat, x, y)    -- Albers
lamccfor(lon, lat,x, y)     -- Lambert Conformal Conic
merfor(lon, lat, x, y)      -- Mercator
psfor(lon, lat, x, y)       -- Polar Stereographic
```

```
polyfor(lon, lat, x, y)    -- Polyconic
eqconfor(lon, lat, x, y)   -- Equidistant Conic
tmfor(lon, lat, x, y)      -- Transverse Mercator (TM)
sterfor(lon, lat, x, y)    -- Stereographic
lamazfor(lon, lat, x, y)   -- Lambert Azimuthal
azimfor(lon, lat, x, y)    -- Azimuthal Equidistant
gnomfor(lon, lat, x, y)    -- Gnomonic
orthfor(lon, lat, x, y)    -- Orthographic
gvnspfor(lon, lat, x, y)   -- General Near Side Perspective
sinfor(lon, lat, x, y)     -- Sinusoidal
equifor(lon, lat, x, y)    -- Equirectangular
millfor(lon, lat, x, y)    -- Miller
vandgfor(lon, lat, x, y)   -- Van der Grinten
omerfor(lon, lat, x, y)    -- Hotine Oblique Mercator (HOM)
robfor(lon, lat, x, y)     -- Robinson
somfor(lon, lat, x, y)     -- Space Oblique Mercator (SOM)
alconfor(lon, lat, x, y)   -- Alaska Conformal
goodfor(lon, lat, x, y)    -- Goode
molwfor(lon, lat, x, y)    -- Mollweide
imolwfor(lon, lat, x, y)   -- Interrupted Mollweide
hamfor(lon, lat, x, y)     -- Hammer
wivfor(lon, lat, x, y)     -- Wagner IV
wviifor(lon, lat, x, y)    -- Wagner VII
obleqfor(lon, lat, x, y)   -- Oblated Equal Area
```

init_for() must be called once before calling any of the above subroutines. For example, if *utmfor()* is to be called, *init_for()* must be called setting the UTM projection, UTM zone, and ellipsoid. Then *utmfor()* may be called as many times as needed even if *init_for()* is called initializing another projection. The only exception is if *init_for()* is called initializing UTM with another zone or ellipsoid, then *init_for()* must be called again to perform the original conversion.

RETURN VALUE

```
E_SUCC (0)    --> Successful completion
ERROR  (!= 0) --> An error was encountered
```

SPECIAL CONSIDERATIONS:

The *xxxfor()* call is for C only.