Useful ArcInfo Workstation commands

Start ArcInfo through the Start menu

Start ArcInfo

Start ArcInfo Help (ArcDoc)

In ArcDoc you can find an alphabetical listing of all ArcInfo and Grid commands and functions.
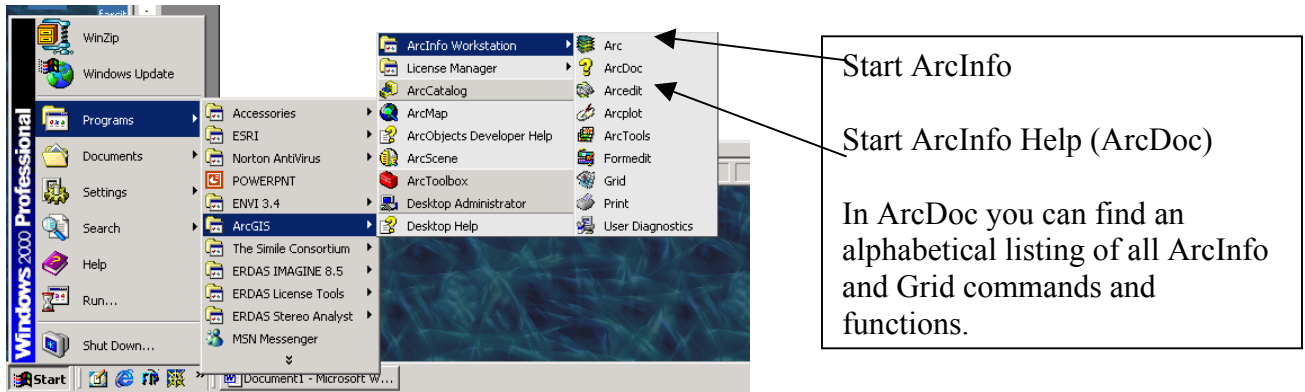
Survival ArcInfo commands (type the command at the Arc prompt)

Arc Command	Action
w	Returns the workspace you are in
w *c:/nr504*	Takes you to the workspace (folder) nr504
lc	Lists the coverages in the workspace you are in
lg	Lists the grids in the workspace you are in
describe *cover*	Describes the coverage (or grid) *cover* Describe gives you information about map projection, geographic extent and feature class (point, line, poly or grid) for the dataset. Reports cell size for grids.
copy *cov1 cov2*	Makes a copy of cov1 (coverage or grid) to a coverage or grid called cov2. You can use paths in front of the coverage name. For example: **copy cov1 d:\cov2** copies cov1 from the current workspace to the d-drive

Arc Command	Action
kill *cov1* all	Permanently deletes coverage or grid named *cov1* and all its associated files.
list *cover.pat*	Lists the polygon attribute file (.pat) for the coverage cover Polygon and point coverages has a .pat file (polygon attribute file) Line coverages has a .aat file (arc attribute file) Grids have a .vat file (value attribute file All these files are INFO files **Warning! Never remove the first four attributes in an attribute table**
shapearc	Converts a shape file to a coverage
build build *cover* poly build *cover* point	Builds topology in a coverage and updates the attribute table. Be sure to use the correct feature class (point, line or poly) when building a coverage – the default is *poly*
clip	extracts those features from an input coverage that overlap with a clip coverage (the clip coverage works as a 'cookie-cutter')
export	converts a coverage or grid to an interchange file (.e00 file) for transfer to another platform running ARC/INFO.
import	converts an ARC/INFO export interchange file (.e00 file) to a coverage or grid
generate	Generates points, lines or polygons from GPS coordinates
polygrid	Converts a polygon coverage to a grid based on one of the polygon attributes in the .pat file

Arc Command	Action
intersect	computes the geometric intersection of two coverages. **Only those features in the area common to both coverages** will be preserved in the output coverage. The attributes from both coverages will appear in the output attribute table.
union	computes the geometric intersection of two polygon coverages. **All** polygons from both coverages will be split at their intersections and preserved in the output coverage. The attributes from both coverages will appear in the output attribute table.
project	converts a geographic data set between two coordinate systems. You will need to input information about input and output coordinate system (UTM, Geographic, State Plane, Albers etc.)
reselect	extracts map features from the input coverage based on their attribute values.

GRID basics

- GRIDS are raster based datasets with a defined cell size (pixel size)

- Integer GRIDS have Value Attribute Tables (.vat) with at least two numeric attributes: VALUE and COUNT.

  VALUE expresses the value of the grid cell (For example elevation in an elevation grid, vegetation type (numeric code) in a vegetation grid, soil type in a soils grid).
  COUNT tells you how many cells there are of the VALUE.

- The area for each VALUE category can be calculated by the formula:

  Area = cellsize * cellsize * COUNT

  The area will be expressed in the same units as the cell size squared

- Floating point grids do not have a .vat, for example slope and aspect grids

- Grids can be added, subtracted, multiplied or divided – grid algebra

Note: Never remove the VALUE or COUNT attributes from a GRID!

Floatingpoint Grids

Floatingpoint grids are grids where the value is a decimal number. Slope and aspect are examples of floatingpoint grids. The slope for a pixel is rarely an integer number such as 5, but more often a decimal number such as 5.13523. Floating point grids do not have tables, because as you can imagine this would require a truncation of the decimals. You can display histograms for floatingpoint grids and you can also reclassify them into discrete classes.
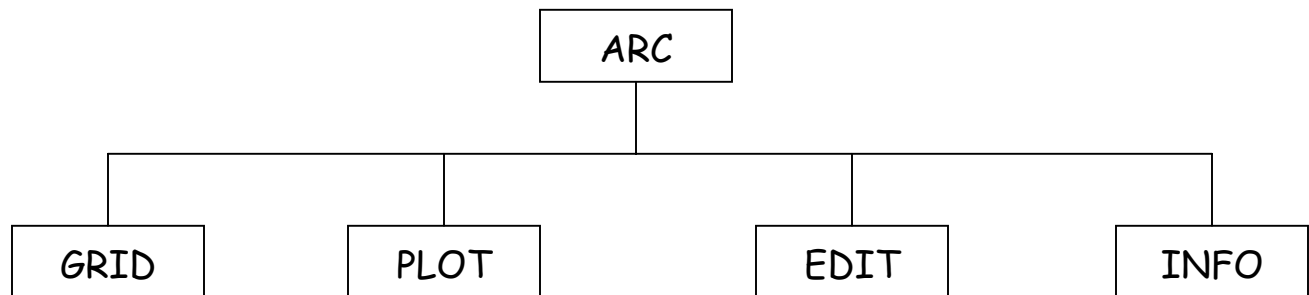
Useful GRID functions

GRID function	Action
sample	creates an ASCII file listing the x and y coordinates of cells selected in a <mask_grid>, or of points from the <point_file> and the respective cell values of grids specified in the command line. Example: You have x and y locations for wildlife observations. By using sample you can get an output listing of the x and y coordinate and the values from other specified grids at the x and y locations (for example slope, elevation, aspect, landcover….) output.asc = sample(pointgrid, elevation, slope, aspect, veg) where: *output.asc* is the output ascii file containing x and y location as well as the elevation, slope, aspect and vegetation values at the locations *pointgrid* is the name of a grid (mask grid) for the x and y locations to be analyzed elevation, slope, aspect and veg are input grids
polygrid	Converts a polygon coverage to a grid based on one of the polygon attributes in the .pat file

GRID function	Action
con	performs one or more conditional if/else evaluations on a cell-by-cell basis within the analysis window. CON(<condition>, <true_expression>, {false_expression}) outgrid = con(ingrid > 500, 1, 0) 1 = true expression 0 = false expression If the value of the input grid (ingrid) is greater than 500 the output grid will be 1 – otherwise it will be 0
regiongroup	The cells in the input grid are grouped into according to their connectivity. Adjacent cells with the same cell value belongs to the same group. Connectivity can be defined according to the rule of FOUR or EIGHT cell connectivity. FOUR - defines connectivity between cells of the same value only if the cells are directly to the right or left, or above or below each other the four nearest neighbors. If two cells with the same value are diagonal from one another, they are not considered connected. EIGHT - defines connectivity between cells of the same value if they are within the immediate 8-cell neighborhood (eight nearest neighbors) of each other. This includes if they are to the right or left, above or below, or are diagonal to each other. The VALUE of the output grid represents the number of grid cells in the group. The COUNT tells you how many groups there are with this particular value.
setnull	returns NODATA if the evaluation of the input condition is 'TRUE'; if it 'FALSE', returns the value specified by the grid outgrid = setnull(ingrid == 0, 1) Returns NODATA in the output grid if the ingrid = 0, else it will be 1

GRID function	Action
slope	Creates slope from an elevation grid slopegrid = slope(elevationgrid) You can specify if you want the slope in percent or degrees. ArcView returns the slope in degrees)
aspect	Creates aspect from an elevation grid aspectgrid = aspect(elevationgrid) - Aspect is expressed in positive degrees from 0 to 360, measured clockwise from the north. - Cells in the input grid of zero slope (flat) are assigned an aspect of -1. - If the center cell in the immediate neighborhood is NODATA, the output is NODATA. - If any neighborhood cells are NODATA, they are assigned the value of the center cell then the aspect is computed.

ArcInfo is structured in a tree with ARC as the basis.

```
                          ┌─────────┐
                          │   ARC   │
                          └─────────┘
                               │
      ┌──────────────┬─────────┴─────────┬──────────────┐
┌──────────┐   ┌──────────┐        ┌──────────┐   ┌──────────┐
│   GRID   │   │   PLOT   │        │   EDIT   │   │   INFO   │
└──────────┘   └──────────┘        └──────────┘   └──────────┘
```

It's sometimes helpful to visualize ArcInfo as a human body where:

    ARC = skeleton
        The backbone of ArcInfo.
    GRID = muscle
        Where all the heavy analysis occurs.
    EDIT = fat
        Where any structural changes take place.
    PLOT = skin
        Where the "beautifying" occurs.
    INFO = brain
        The spatial/aspatial relational database.