Describing Scene to be viewed

- Application Program - creates application
- Application Model - independent of display system
  - program must extract geometry and convert to primitives of graphics system
  - primitives: points, lines, rectangles, ellipses, text, polygons, polyhedra, spheres, curves, surfaces
  - application must convert geometry to primitives supported
  - attributes (line style, color, line width, fill style)

Graphics Systems

- Typically libraries: output subroutines
  - user programs in logical display device terms
  - graphics library converts to device dependent instructions
  - abstraction of display device
    - locator - mouse, tablet, joystick etc
    - sample - return from locator
    - event - generated by user input

Graphics Systems

- Interaction Handling - event driven loop
  - while (!quit) {
    - enable selection of commands/objects
    - wait for user selection
    - switch (selection) { process selection, updating model and screen as necessary}
  }

- User interaction
  - change in screen appearance - does not involve update of model: application updates state and calls graphics package
  - change in model - must recalculate