

**21.** The method as recited in claim 16 wherein the multiple touches are associated with a single user interface element.

**22.** The method as recited in claim 16 wherein a first portion of the multiple touches are associated with a first user interface element and a second portion of the multiple touches are associated with a second user interface element that is different than the first user interface element.

**23.** The method as recited in claim 15 wherein after linking the detected multiple touches to the graphical image, the graphical image changes based on the motion of the linked multiple touches.

**24.** The method as recited in claim 23 wherein the graphical image is changed in unison with the motion of the linked multiple touches such that the changes in the graphical image continuously follows the motion of the linked multiple touches.

**25.** The method as recited in claim 23 wherein the size of the graphical image changes when at least one of the touches in the linked multiple touches is translated over the touch sensitive.

**26.** The method as recited in claim 23 wherein the size of features embedded in the graphical image changes when at least one of the touches in the linked multiple touches is translated over the touch sensitive surface.

**27.** The method as recited in claim 23 wherein the orientation of the graphical image changes when at least one of the touches in the linked multiple touches is rotated over the touch sensitive surface.

**28.** The method as recited in claim 23 wherein the position of the graphical image changes when the linked multiple touches are translated together over the touch sensitive surface.

**29.** A method of invoking a user interface element on a display via a multipoint touch screen of a computing system, said method comprising:

detecting and analyzing the simultaneous presence of two or more objects on contact with said touch screen;

based at least in part on said analyzing, selecting a user interface tool, from a plurality of available tools, to display on a display for interaction by a user of said computing system; and

controlling the interface tool based at least in part on the further movement of said objects in relation to said touch screen.

**30.** The method as recited in claim 29 wherein said selecting is also based in part on the current mode of the computing device at the time of the simultaneous presence of the two or more objects.

**31.** The method as recited in claim 29 wherein said tool is displayed at a location on the display proximate to the presence of said two or more objects.

**32.** A touch-based method, comprising

detecting a user input that occurs over a multipoint sensing device, the user input including one or more inputs, each input having a unique identifier;

during the user input, classifying the user input as a tracking or selecting input when the user input includes one unique identifier or a gesture input when the user input includes at least two unique identifiers;

performing tracking or selecting during the user input when the user input is classified as a tracking or selecting input;

performing one or more control actions during the user input when the user input is classified as a gesturing input.

**33.** The method as recited in claim 32 wherein scrolling or panning is performed when the at least two unique identifiers move together in substantially the same direction.

**34.** The method as recited in claim 32 wherein zooming is performed when the at least two unique identifiers linearly move away or towards one another.

**35.** The method as recited in claim 32 wherein rotation is performed when the at least two unique identifiers rotate relative to each other or relative to a known point.

**36.** The method as recited in claim 32 wherein multiple control actions are performed simultaneously during the same user input.

**37.** The method as recited in claim 32 wherein the user input is a continuous stroke, the stroke maintaining continuous contact on the multipoint sensing device.

**38.** A touch-based method, comprising:

outputting a GUI on a display;

detecting a user input on a touch sensitive device;

analyzing the user input for characteristics indicative of tracking, selecting or a gesturing;

categorizing the user input as a tracking, selecting or gesturing input;

performing tracking or selecting in the GUI when the user input is categorized as a tracking or selecting input;

performing control actions in the GUI when the user input is categorized as a gesturing input, the actions being based on the particular gesturing input.

**39.** A touch-based method, comprising:

capturing an initial touch image;

determining the touch mode based on the touch image;

capturing the next touch image;

determining if the touch mode changed between the initial and next touch images;

if the touch mode changed, setting the next touch image as the initial touch image and determining the touch mode based on the new initial touch image; and

if the touch mode stayed the same, comparing the touch images and performing a control function based on the comparison.

**40.** The method as recited in claim 39 wherein the control function is selected from tracking, panning, zooming, rotating, scrolling, or enlarging.

**41.** A computer implemented method for processing touch inputs, said method comprising:

reading data from a touch screen, the data pertaining to touch input with respect to the touch screen, and the touch screen having a multipoint capability;

converting the data to a collection of features;

classifying the features;

grouping the features into one or more feature groups;