DISPLAYING PAYLINES ON A GAMING MACHINE

CROSS REFERENCES TO RELATED APPLICATIONS

[0001] This application is related to the following commonly-owned, co-pending patent applications:

[0002] U.S. patent application Ser. No. _____ (Attorney Docket No. 29757/P-739B), entitled "Payline Curves on a Gaming Machine," filed on Oct. 17, 2002; and

[0003] U.S. patent application Ser. No. _____ (Attorney Docket No. 29757/P-740), entitled "Transparent Objects on a Gaming Machine," filed on Oct. 17, 2002.

[0004] These applications are hereby incorporated by reference, in their entirety, for all purposes.

BACKGROUND

[0005] The present disclosure is related to presenting games on gaming machines such as reel-type slot machines, video poker machines, etc.

[0006] Various presentation techniques for gaming machines have been previously described. For example, U.S. Pat. No. 5,788,573 to Baerlocher et al. describes a computer-implemented electronic game. A gaming terminal is configured to display a screen with a number of areas including a puzzle completion area and a slot machine area. The slot machine area includes a number of simulated slot machine reels. In one example, multiple symbols on multiple reels are displayed. In this example, multiple possible paylines are provided. Payline indicators are displayed to indicate the various paylines. In one example, a payline indicator includes a number indicative of the payline, and a lighted portion adjacent to the symbol positions included in the payline.

[0007] U.S. Pat. No. 6,050,895 to Luciano, Jr. et al. describes a gaming device for a hybrid game including a coordination/dexterity portion and/or a traditional game portion. A screen that may be displayed on a display device includes a plurality of screen portions. In one portion, a representation of a golf course is displayed in connection with a simulated golf game. In another portion, a traditional game such as an electronic slot machine game is depicted.

[0008] Miguel A. Sepulveda, "What is OpenGL?," LinuxFocus, Vol. 2 (January 1998) (available at http://mercury-.chem.pitt.edu/~tiho/LinuxFocus/English/January1998/article15.ht) describes an application programming interface, known as "OpenGL," for developing three dimensional (3D) graphical applications. With OpenGL, a programmer may construct mathematical descriptions of objects, and arrange the objects in a 3D scene. Additionally, the programmer can select a desired vantage point for viewing the scene, provide lighting to the scene, and color to the objects. Additionally, the programmer can use "texture mapping" to render images of realistic looking surfaces on to objects in the 3D scene.

SUMMARY

[0009] In one embodiment, a gaming apparatus is provided. The gaming apparatus may comprise a display unit, a value input device, and a controller operatively coupled to the display unit and the value input device. The controller may comprise a microprocessor and a memory operatively coupled to the microprocessor. The controller may be configured to allow a person to make a wager, and to generate a graphical three dimensional (3D) representation of a game, the graphical 3D representation including at least one payline, the graphical 3D representation comprising graphics primitives in a 3D space. The controller may also be configured to convert a view of the graphical 3D representation into display data for display on the display unit.

[0010] In another embodiment, another gaming apparatus is provided. The gaming apparatus may comprise a display unit, a value input device, and a controller operatively coupled to the display unit and the value input device. The controller may comprise a microprocessor and a memory operatively coupled to the microprocessor. The controller may be configured to allow a person to make a wager, and to generate a game graphic on a first plane in a three dimensional (3D) graphics space. The controller may also be configured to generate at least one payline in the 3D graphics space between the first plane and a viewpoint, and to generate display data for the display unit, the display data corresponding to the viewpoint in the 3D graphics space and including data corresponding to one or more images of the game graphic and the payline. The controller may additionally be configured to determine, after the display data has been displayed, a value payout associated with an outcome of the game represented by the display data.

[0011] In a further embodiment, yet another gaming apparatus is provided. The gaming apparatus may comprise a display unit, a value input device, and a controller operatively coupled to the display unit and the value input device. The controller may comprise a microprocessor and a memory operatively coupled to the microprocessor. The controller may be configured to generate a representation of a game in a three dimensional (3D) graphics space, and to allow a person to make a wager. The controller may additionally be configured to allow a person to make a payline selection, and to define payline reference points in the 3D graphics space. The controller may also be configured to generate, based on the payline reference points, a representation of a payline in the 3D graphics space, and to convert a view of the representation game and the representation of the payline in the 3D graphics space into display data for display on the display unit. The controller may further be configured to determine a value payout associated with an outcome of the slots game, and to determine the outcome of the game.

[0012] In still another embodiment, a gaming method is provided. The gaming method may comprise generating a graphical three dimensional (3D) representation of a game, the graphical 3D representation including at least one payline, the graphical 3D representation comprising graphics primitives in a 3D space. The gaming method may also comprise converting a view of the graphical 3D representation into display data for display on a display unit. The gaming method may further comprise determining a value payout associated with an outcome of the game represented in the 3D space.

[0013] In yet another embodiment, a memory having a computer program stored therein is provided, the computer program being capable of being used in connection with a