

ture data. Among the above-mentioned items of data, the vertex address data is coordinate data obtained by performing coordinate transform by the graphics-data generating processor 13 on the two-dimensional vertex coordinate data calculated by the CPU 11, based on the amounts by which the polygons have been translated and rotated.

[0049] The sound processor 22 stores adaptive differential pulse code modulation (ADPCM) data read from the recording medium 40 in the buffer 23, and the ADPCM data stored in the buffer 23 is used as a sound source. The sound processor 22 then reads the ADPCM data from the buffer 23 at a clock frequency of, for example, 44.1 kHz.

[0050] The sound processor 22 then performs processing, such as pitch conversion, noise addition, envelope setting, level setting, reverb addition, etc., on the ADPCM data read from the buffer 23.

[0051] If the sound data read from the recording medium 40 is pulse code modulation (PCM) data compliant with, for example, the compact disk-digital audio (CD-DA) format, it is converted into ADPCM data by the sound processor 22.

[0052] The processing to be executed on the PCM data by using program data is directly performed in the main memory 15. The PCM data is then supplied to the sound processor 22 and is converted into ADPCM data. Subsequently, the above-described various operations are conducted on the ADPCM data, which is then output from the speaker 30 as sound.

[0053] The recording medium driver 31 may be a compact disk-read only memory (CD-ROM) drive, a hard disk drive, an optical disc drive, a floppy disk drive, a silicon disk drive, or a cassette-type medium reader. The recording medium driver 31 reads data, such as images, sound, or program data from the recording medium 40 and supplies the read data to the decoder 24. The decoder 24 then executes error correction processing by using error correction code (ECC) on the reproduced data output from the driver 31, and supplies the error-corrected data to the main memory 15 or the sound processor 22.

[0054] The memory 27 is, for example, a card-type memory, and is used for storing various parameters of games, such as the current setting of a game.

[0055] The controller 33, which serves as an operation unit, which can be operated externally, has a first left button 33L1, a second left button 33L2, a first right button 33R1, a second right button 33R2, an up-direction key 33U, a down-direction key 33D, a left-direction key 33L, a right-direction key 33R, a start button 33a, a select button 33b, a first button 33c, a second button 33d, a third button 33e, and a fourth button 33f. The controller 33 outputs an operation signal according to the operation performed by a game player.

[0056] The up-direction key 33U, the down-direction key 33D, the left-direction key 33L, and the right-direction key 33R are used for providing to the CPU 11

commands for moving characters up and down and in the left and right directions, respectively, on the screen, and for providing commands for moving an icon on the menu screen.

[0057] The start button 33a is used for instructing the CPU 11 by a game player to start the game program data loaded from the recording medium 40. The select button 33b is used for instructing the CPU 11 by the game player to select one of the items of game program data loaded into the main memory 15 from the recording medium 40.

[0058] The functions of the first button 33c, the second button 33d, the third button 33e, the fourth button 33f, the first left button 33L1, the second left button 33L2, the first right button 33R1, and the second right button 33R2 vary according to the game program data loaded from the recording medium 40.

[0059] The recording medium 40 may be a CD-ROM, a hard disk, an optical disc, a floppy disk, a semiconductor memory, etc., and data, such as images, sound, game programs, and so on, are stored in the recording medium 40, as stated above.

[0060] An overview of the operation of the above-described game system 1 is as follows.

[0061] A power switch (not shown) is turned on to activate the game system 1. If the recording medium 40 is loaded in the recording medium driver 31, the CPU 11 instructs the recording medium driver 31 to read program data from the recording medium 40 based on the operating system stored in the ROM 16. Accordingly, the recording medium driver 31 reads images, sound, and program data from the recording medium 40.

[0062] The read images, sound, and program data are supplied to the decoder 24 which then performs error correction processing on the read data. The error-corrected image data is supplied to the data-expansion circuit 17 via the bus 12 and undergoes the above-described expansion processing in the data-expansion circuit 17. Subsequently, the image data is supplied to the rendering processor 20 and is written into the non-display area of the buffer 21 by the rendering processor 20.

[0063] Meanwhile, the error-corrected sound data is supplied to the main memory 15 or the sound processor 22, and is written into the main memory 15 or the buffer 23, respectively.

[0064] The error-corrected program data is supplied to and written into the main memory 15. Thereafter, the CPU 11 proceeds with the game in accordance with the game program data stored in the main memory 15 and the instructions provided by a game player through the controller 33. That is, the CPU 11 appropriately controls image processing, sound processing, and internal processing based on the instructions provided by the game player through the controller 33.

[0065] In this embodiment, the CPU 11 performs the following image processing control: calculations of skeleton coordinates and calculations of polygon-vertex