

2.0 Character identities

UNATRON has the capability of keeping track of up to 85 distinct active characters at one time. How a character of a given type acts and reacts is hard coded but the number and distribution is a matter of what happens during play. Data for each character is maintained and updated each cycle of the program.

2.1 Character list

To keep track of animate characters UNATRON maintains a character list or c-list for short. It is located just below the video ram from 12547 to 13311. Every nine bytes of the list constitutes space for an entry into the list. I will explain what each of the nine bytes is used for and return to discussion of the list as a whole later.

Characters are identified by a one byte even number ranging from 2 to 128. The main loop uses this number to determine how a character should react, i.e. holemakers should eat walls, mines should attack etc. The number for a character often tells what shape it is. That is to say, for character #44 draw shape #44. Simple enough.

Of the nine bytes of each c-list entry, byte 0 is the shape number.

For each character, the screen location it presently holds is stored in bytes 1-2.

Byte 3 is called the wobble byte. It is described in more detail in section 3.3 but briefly, it is used by the main program to keep track of special features of the character.

Bytes 4-5 contain the character's present video ram address.

Byte 6 contains the bit set for the video ram address in bytes 4-5.

Bytes 7-8 hold the character's present vector. The vector describes what direction it is moving with respect to its screen location.

To locate a character or to scan the c-list we start at the beginning, 12547, and step through nine bytes at a time. The program is set up so that the first entry is ALWAYS the player's character. Often the player's vector, screen location etc. is accessed by address as opposed to addressing offset to an index register as with other c-list entries. An entry with shape number 0 is regarded as a hole in the list and may be filled in by any subsequent entries.

The c-list is available to the main loop and the vector generating routines. Characters are added by a call to a subroutine ADDCHQ. The components to be added, i.e. shape

3) Holemakers - always number 102

4) Anything ≥ 42 is either someone's shot or a neutron, etc. The common denominator is that when it hits something it explodes. Say the character is number X ($X \geq 42$). Shape number $X+4$ will be the explosion and $X+2$ will be the overlay for the explosion. This is true for all explosions of characters ≥ 42 .

5) All else - everything else is considered a non-reactive atom. It will move in one direction until it hits something, receive a new vector and start a period of wobbling between shape X and shape $X+2$.