



Dack

Terra Form

Moderator

Joined: Nov 26, 2003
Messages: 530
Location: civ dos 474.05

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darkpanda

Dark Prince

Joined: Oct 28, 2007
Messages: 600

Gowron and Dack, thanks for your inputs! I'll update the mapping files in a short while...

Meanwhile, hereunder is the structure of the **replay** data block, which is not otherwise detailed in the mapping files:

Code:

```
game.replay_data      data      30320    4100      0      7670
```

Replay.

This encodes the data used to generate the REPLAY when finishing a Civ game:

- At the beginning, it is "empty" (full of "0x00").
- As Civ turns play out, **replay entries** are added to this data block
- The **2 first bytes** of game.replay are an **unsigned short integer** coding for the **byte length of the replay data**
- Replay entries have variable sizes
- The first byte of an entry is the entry type, which is enough to know the entry length:

Column 1	Column 2	Column 3	Column 4
Entry type	Total bytes	Byte	Description
[0x1*] City built or destroyed	6	0	Entry code: 0x1*
		1	Turn number(*)
		2	Owning Civ ID; if 0xFF, means the city is destroyed , not built
		3	City name ID
		4	City longitude (X position)
		5	City latitude (Y position)
[0x2*] Declaration of war	3	0	Entry code: 0x2*
		1	Turn number(*)
		2	Civs at war: high-order 4 bits = attacking Civ ID; low-order 4 bits = attacked Civ ID

Column 1	Column 2	Column 3	Column 4
[0x3*] Peace treaty	3	0	Entry code: 0x3*
		1	Turn number(*)
		2	Civs at peace: high-order 4 bits = proposing Civ ID; low-order 4 bits = agreeing Civ ID
[0x5*] Scientific advance	4	0	Entry code: 0x5*
		1	Turn number(*)
		2	Civ ID
		3	Discovery ID
[0x6*] Unit first-time built	4	0	Entry code: 0x6*
		1	Turn number(*)
		2	Civ ID
		3	Unit type ID
[0x8*] Regime change / revolution	4	0	Entry code: 0x8*
		1	Turn number(*)
		2	Civ ID
		3	New government type
[0x9*] City captured	6	0	Entry code: 0x9*
		1	Turn number(*)
		2	Civ ID who captured the city
		3	City name ID
		4	City longitude (X position)
		5	City latitude (Y position)
[0xA*] Wonder built	4	0	Entry code: 0xA*
		1	Turn number(*)
		2	Civ ID
		3	Wonder ID

Column 1	Column 2	Column 3	Column 4
[0xB*] Replay summary	5	0	Entry code: 0xB*
		1	Turn number(*)
		2	City count
		3 and 4	Player civ population count (x 10,000)
[0xC*] Civ rankings	6	0	Entry code: 0xC*
		1	Turn number(*)
		2 to 5	4 bytes, to be read as 8 half-bytes, each half-byte codes for a Civ ID, the Civ with the highest ranking is the first half-byte, the Civ with lowest has the last half-byte
[0xD*] Civ destroyed	3	0	Entry code: 0xD*
		1	Turn number(*)
		2	Civ that was destroyed
		3	Civ that destroyed them

- (*) For **Turn ID**: because a single byte ranges from 0 to 255, it cannot account for the up to 650 possible turns in a game of Civilization, the low-order 4 bits of the replay entry code are used to encode additional turns:
 - "0x 10 34 ..." means "City built/destroyed at turn 52 (0x34)"
 - "0x 11 34 ..." means "City built/destroyed at turn 308 (0x134)"

Examples:

Column 1	Column 2
Description	Bytes
Turn 1 (3980 BC): Greeks build Athens	0x10 01 06 50 18 0F
Turn 8 (3840 BC): Russians build the first Phalanx	0x60 08 01 02
Turn 8 (3840 BC): Aztecs discover Pottery	0x50 08 04 2A
Turn 15 (3700 BC): Delhi destroyed	0x10 0F FF 60 1A 19
Turn 15 (3700 BC): Indians annihilated by Greeks	0xD0 0F 07 06
Turn 18 (3640 BC): Russians make peace with Americans	0x30 12 15
Turn 50 (3000 BC): BABYLONIANS: 3 CITIES; 70,000 POPULATION	0xB0 32 03 00 07
Turn 50 (3000 BC): *** 1: Babylonians 2: Americans 3: Greeks 4: Russians 5: Aztecs 6: French 7: Mongols	0xC0 32 25 61 43 70
Turn 96 (2080 BC): Babylonians declare war on Greeks	0x20 60 26

Column 1	Column 2
Turn 121 (1580 BC): BABYLONIANS BUILD COLOSSUS	0xA0 79 02 03
Turn 259 (1090 AD): Americans form Monarchy	0x81 03 05 02
Turn 269 (1190 AD): Americans capture Moscow	0x91 0D 05 70 34 17

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Just a quick word to notify that the 1st post [SVE_memory_map.zip](#) has been updated taking into account comments by Gowron and Dack.

The progress picture also, reaching **80.6% of SVE deciphered** 😊

[J](#)**CivED** - a toolbox for Sid Meier's Civilization (MS-DOS).

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The list reminds me of some of the remains of Great Library of Alexandra. Supposedly among the items that remain are list of books that no longer exists. Along with titles of data we need to flesh out the titles with information on the contents.
darkpanda and Gowron the two of you have certainly spark new interest in research into the inner recesses of CIV/dos. (If I were one to use emoticons I would insert a smiley face with clapping hands)

Good work guys!

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Gowron said: ↑

Code:

```
game.city0.unknown_cb7 byte 5390 1 0 150E
```