UDC 681.3.042 : 681.327.45

Transformed

Ref. No. : ISO/R 1679-1970 (E)

ISO

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

ISO RECOMMENDATION

R 1679

REPRESENTATION OF ISO 7-BIT CODED CHARACTER SET ON 12-ROW PUNCHED CARDS

1st EDITION

July 1970

For each individual country the only valid standard is the national standard of that country.

Printed in Switzerland

Also issued in French and Russian. Copies to be obtained through the national standards organizations.

BRIEF HISTORY

The ISO Recommendation R 1679, *Representation of ISO 7-bit coded character set on 12-row punched cards*, was drawn up by Technical Committee ISO/TC 97, *Computers and information processing*, the Secretariat of which is held by the American National Standards Institute (ANSI).

Work on this question led to the adoption of Draft ISO Recommendation No. 1679 which was circulated to all the ISO Member Bodies for enquiry in October 1968. It was approved, subject to a few modifications of an editorial nature, by the following Member Bodies :

Australia	Israel	Thailand
Belgium	Italy	Turkey
Canada	Japan	U.A.R.
Czechoslovakia	Netherlands	United Kingdom
Denmark	Romania	U.S.A.
France	Spain	Yugoslavia
Germany	Sweden	
Greece	Switzerland	

The following Member Body opposed the approval of the Draft :

New Zealand

This Draft ISO Recommendation was then submitted by correspondence to the ISO Council which decided to accept it as an ISO RECOMMENDATION.

ISO Recommendation | R 1679 | July 1970

REPRESENTATION OF ISO 7-BIT CODED CHARACTER SET ON 12-ROW PUNCHED CARDS

1. SCOPE

This ISO Recommendation specifies the representation of the ISO 7-bit coded character set on 12-row punched cards. This representation is derived from and compatible with the code known as "Hollerith Code". It will ensure compatibility with a large proportion of existing punched card files.

It does not specify any redundancy nor does it define techniques for error control.

2. FIELD OF APPLICATION

This ISO Recommendation is intended for the general interchange of information among data processing systems, when using 12-row punched cards.

3. REFERENCES

3.1 Character sets

This ISO Recommendation refers to the 7-bit coded character set which is the subject of ISO Recommendation R 646*. There is no separate representation of the 6-bit coded character set of this ISO Recommendation. The characters of this set and of any other restricted set should be represented in punched cards by the same hole patterns as the corresponding characters in the full 7-bit set. If any ambiguity should arise, the choice of the corresponding characters requires agreement between the sender and the recipient of the cards.

3.2 Punched cards

The 12-row punched cards to be used, the number of columns in a card, the shape of the holes punched in a card and any other physical characteristics are specified in ISO Recommendations R 1681** and R 1682***.

In such cards, characters are represented in successive columns, each column having twelve possible punching positions designated 12, 11, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9.

4. SPECIFICATION

Table 1 specifies a hole-pattern for each of the positions of the ISO/R 646 7-bit set table.

The headings for the columns and rows are identified by numbers written in binary and decimal notations identical to those used in ISO Recommendation R 646.

The entries in the table are those defined in clause 3.2.

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* ISO Recommendation R 646, *6 and 7 bit coded character sets for information processing interchange.*

** ISO Recommendation R 1681, *Specifications for unpunched paper cards.*

*** ISO Recommendation R 1682, *Dimensions and location of rectangular punched holes in 80 columns punched paper cards.*

TABLE 1 — Card hole-patterns assigned to the bit combinations of the ISO 7-bit coded character set

b_7	b_6	b_5	b_4	b_3	b_2	b_1		0	0	0	0	1	1	1	1
								0	0	1	1	0	0	1	1
								0	1	0	1	0	1	0	1
								0	**1**	**2**	**3**	**4**	**5**	**6**	**7**
			0	0	0	0	**0**	12–0–9–8–1	12–11–9–8–1	NO PUNCH	0	8–4	11–7	8–1	12–11–7
			0	0	0	1	**1**	12–9–1	11–9–1	12–8–7	1	12–1	11–8	12–0–1	12–11–8
			0	0	1	0	**2**	12–9–2	11–9–2	8–7	2	12–2	11–9	12–0–2	12–11–9
			0	0	1	1	**3**	12–9–3	11–9–3	8–3	3	12–3	0–2	12–0–3	11–0–2
			0	1	0	0	**4**	9–7	9–8–4	11–8–3	4	12–4	0–3	12–0–4	11–0–3
			0	1	0	1	**5**	0–9–8–5	9–8–5	0–8–4	5	12–5	0–4	12–0–5	11–0–4
			0	1	1	0	**6**	0–9–8–6	9–2	12	6	12–6	0–5	12–0–6	11–0–5
			0	1	1	1	**7**	0–9–8–7	0–9–6	8–5	7	12–7	0–6	12–0–7	11–0–6
			1	0	0	0	**8**	11–9–6	11–9–8	12–8–5	8	12–8	0–7	12–0–8	11–0–7
			1	0	0	1	**9**	12–9–5	11–9–8–1	11–8–5	9	12–9	0–8	12–0–9	11–0–8
			1	0	1	0	**10**	0–9–5	9–8–7	11–8–4	8–2	11–1	0–9	12–11–1	11–0–9
			1	0	1	1	**11**	12–9–8–3	0–9–7	12–8–6	11–8–6	11–2	12–8–2	12–11–2	12–0
			1	1	0	0	**12**	12–9–8–4	11–9–8–4	0–8–3	12–8–4	11–3	0–8–2	12–11–3	12–11
			1	1	0	1	**13**	12–9–8–5	11–9–8–5	11	8–6	11–4	11–8–2	12–11–4	11–0
			1	1	1	0	**14**	12–9–8–6	11–9–8–6	12–8–3	0–8–6	11–5	11–8–7	12–11–5	11–0–1
			1	1	1	1	**15**	12–9–8–7	11–9–8–7	0–1	0–8–7	11–6	0–8–5	12–11–6	12–9–7

ANNEX A

BIT-PATTERNS ASSIGNED TO

CARD HOLE-PATTERNS

The correspondences between 128 bit-patterns and 128 hole-patterns as defined in this ISO Recommendation are shown in Table 2 to complement the presentation of Table 1 and are provided for the convenience of the reader.

Table 2 shows all possible combinations of "no punch", 12, 11, 0, 8, 9 in combination with only one of "no punch", or 1, or 2, or 3, or 4, or 5, or 6, or 7.

The layout of the Table is as follows :

- the columns, the left half of the rows, and the right half of the rows are labelled with card hole-patterns;
- the entries to the Table represent the column/row position of a card hole-pattern in the 7-bit set table of ISO Recommendation R 646.

Example : 12–11–2 corresponds to position 6/11 of the 7-bit set Table.

TABLE 2 – ISO 7-bit set Table positions assigned to card hole-patterns

	12				12	12		12	12				12	12		12	
		11				11	11	11		11				11	11	11	
			0		0		0	0			0		0		0	0	
	2/ 6	2/13	3/ 0	2/ 0	7/11	7/12	7/13					6/ 0					8–1
1	4/ 1	4/10	2/15	3/ 1	6/ 1	6/10	7/14		0/ 1	1/ 1							9–1
2	4/ 2	4/11	5/ 3	3/ 2	6/ 2	6/11	7/ 3		0/ 2	1/ 2		1/ 6					9–2
3	4/ 3	4/12	5/ 4	3/ 3	6/ 3	6/12	7/ 4		0/ 3	1/ 3							9–3
4	4/ 4	4/13	5/ 5	3/ 4	6/ 4	6/13	7/ 5										9–4
5	4/ 5	4/14	5/ 6	3/ 5	6/ 5	6/14	7/ 6		0/ 9		0/10						9–5
6	4/ 6	4/15	5/ 7	3/ 6	6/ 6	6/15	7/ 7			0/ 8	1/ 7						9–6
7	4/ 7	5/ 0	5/ 8	3/ 7	6/ 7	7/ 0	7/ 8		7/15		1/11	0/ 4					9–7
8	4/ 8	5/ 1	5/ 9	3/ 8	6/ 8	7/ 1	7/ 9			1/ 8							9–8
9	4/ 9	5/ 2	5/10	3/ 9	6/ 9	7/ 2	7/10			1/ 9			0/ 0	1/ 0			9–8–1
8–2	5/11	5/13	5/12	3/10													9–8–2
8–3	2/14	2/ 4	2/12	2/ 3					0/11								9–8–3
8–4	3/12	2/10	2/ 5	4/ 0					0/12	1/12		1/ 4					9–8–4
8–5	2/ 8	2/ 9	5/15	2/ 7					0/13	1/13	0/ 5	1/ 5					9–8–5
8–6	2/11	3/11	3/14	3/13					0/14	1/14	0/ 6						9–8–6
8–7	2/ 1	5/14	3/15	2/ 2					0/15	1/15	0/ 7	1/10					9–8–7