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# ISO 8583

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Apa itu ISO 8583 dan  
bagaimana cara  
membacanya?

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AMYunus

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## ISO 8583

Beberapa pembeli tidak menggunakan uang tunai sebagai alat pembayaran. Alternatifnya mereka menggunakan kartu debit atau kartu kredit. Mesin EDC yang dimiliki penjual membaca kartu yang diberikan pembeli, melakukan komunikasi dengan pihak acquirer<sup>1</sup> dan issuer<sup>2</sup>. Komunikasi antar instansi keuangan tersebut menggunakan format data yang disebut ISO 8583.

ISO 8583 merupakan sebuah format data yang diakui dan digunakan secara internasional guna transaksi keuangan. ISO 8583 terdiri dari tiga komponen yakni MTI, Bitmap, dan Data Elements. Contoh data dalam bentuk format ISO 8583 yakni seperti berikut,

**"02002006009A000000001234561231061311010000000050000000250000"**

Kode tersebut dibagi menjadi beberapa bagian seperti berikut ini,

MTI	Bitmap	Data Elements
0200	2006009A 00000000	123456 1231 0613 11 01000000 00500000 00250000

<sup>1</sup> Instansi keuangan yang menerbitkan kartu pembeli

<sup>2</sup> Instansi keuangan yang berhubungan langsung dengan mesin EDC penjual

## Message Type Identifier (MTI)

Terdiri dari empat digit yang mendeskripsikan tipe data. Keempat digit tersebut dibagi menjadi sebagai berikut

- Nxxx : Versi ISO 8583
- xNxx : Message Class
- xxNx : Message Function
- xxxN : Message Origin

### Nxxx – Versi ISO 8583

- 0xxx : ISO 8583-1:1987 version
- 1xxx : ISO 8583-2:1993 version
- 2xxx : ISO 8583-1:2003 version
- 9xxx : Private usage

### xNxx – Message Class

Merupakan kode yang mendeskripsikan tujuan data dikirimkan

x1xx	Authorization message	Determine if funds are available, get an approval but do not post to account for reconciliation, Dual Message System (DMS), awaits file exchange for posting to account
x2xx	Financial message	Determine if funds are available, get an approval and post directly to the account, Single Message System (SMS), no file exchange after this
x3xx	File actions message	Used for hot-card, TMS and other exchanges
x4xx	Reversal message	Reverses the action of a previous authorization
x5xx	Reconciliation message	Transmits settlement information message
x6xx	Administrative message	Transmits administrative advice. Often used for failure messages (e.g. message reject or failure to apply)
x7xx	Fee collection message	
x8xx	Network management message	Used for secure key exchange, logon, echo test and other network functions
x9xx	Reserved by ISO	

**xxNx – Message Function**

Merupakan kode yang mendeskripsikan tipe data (request, response, advice, atau lainnya)

xx0x	Request
xx1x	Request response
xx2x	Advice
xx3x	Advice response
xx4x	Notification
xx8x	Response acknowledgement
xx9x	Negative acknowledgement

**xxxN – Message Origin**

Merupakan kode yang mendeskripsikan sumber pengirim data (acquirer, issuer, atau lainnya)

xxx0	Acquirer
xxx1	Acquirer repeat
xxx2	Issuer
xxx3	Issuer repeat
xxx4	Other
xxx5	Other repeat

**Contoh MTI**

Kode	Arti	Pemakaian
0100	Authorization request	Request from a point-of-sale terminal for authorization for a cardholder purchase
0110	Issuer response	Issuer response to a point-of-sale terminal for authorization for a cardholder purchase
0120	Authorization advice	When the Point of Sale device breaks down and you have to sign a voucher
0121	Authorization advice repeat	if the advice times out
0130	Issuer response to authorization advice	Confirmation of receipt of authorization advice
0200	Acquirer financial request	Request for funds, typically from an ATM or pinned point-of-sale device
0210	Issuer response to financial request	Issuer response to request for funds
0220	Acquirer financial advice	e.g. Checkout at a hotel. Used to complete transaction initiated with authorization request
0221	Acquirer financial advice repeat	if the advice times out
0230	Issuer response to financial advice	Confirmation of receipt of financial advice

Kode	Arti	Pemakaian
0400	Acquirer reversal request	Reverses a transaction
0420	Acquirer reversal advice	Advises that a reversal has taken place
0421	Acquirer reversal advice repeat message	if the reversal times out
0430	Issuer reversal response	Confirmation of receipt of reversal advice
0800	Network management request	Echo test, logon, log off etc.
0810	Network management response	Echo test, logon, log off etc.
0820	Network management advice	Keychange



## Data Elements

Berisi informasi yang dimiliki oleh data dengan format ISO 8583. Cara menafsirkan data ini dengan menggunakan konversi bitmap dalam biner. Dalam urutan biner tersebut, dapat diketahui bit mana saja yang aktif. Kemudian letak bit yang aktif tersebut dipetakan dengan data element standar ISO 8583.

Data Element	Type	Usage
1	b 64	Bit Map Extended
2	n ..19	Primary account number (PAN)
3	n 6	Processing code
4	n 12	Amount, transaction
5	n 12	Amount, Settlement
6	n 12	Amount, cardholder billing
7	n 10	Transmission date & time
8	n 8	Amount, Cardholder billing fee
9	n 8	Conversion rate, Settlement
10	n 8	Conversion rate, cardholder billing
11	n 6	Systems trace audit number
12	n 6	Time, Local transaction (hhmmss)
13	n 4	Date, Local transaction (MMDD)
14	n 4	Date, Expiration
15	n 4	Date, Settlement
16	n 4	Date, conversion
17	n 4	Date, capture
18	n 4	Merchant type
19	n 3	Acquiring institution country code
20	n 3	PAN Extended, country code
21	n 3	Forwarding institution. country code
22	n 3	Point of service entry mode
23	n 3	Application PAN number
24	n 3	Function code(ISO 8583:1993)/Network International identifier (NII)
25	n 2	Point of service condition code
26	n 2	Point of service capture code
27	n 1	Authorizing identification response length
28	n 8	Amount, transaction fee
29	n 8	Amount. settlement fee
30	n 8	Amount, transaction processing fee
31	n 8	Amount, settlement processing fee
32	n ..11	Acquiring institution identification code
33	n ..11	Forwarding institution identification code
34	n ..28	Primary account number, extended
35	z ..37	Track 2 data
36	n ...104	Track 3 data
37	an 12	Retrieval reference number
38	an 6	Authorization identification response
39	an 2	Response code
40	an 3	Service restriction code
41	ans 16	Card acceptor terminal identification
42	ans 15	Card acceptor identification code

Data Element	Type	Usage
43	ans 40	Card acceptor name/location
44	an ..25	Additional response data
45	an ..76	Track 1 Data
46	an ...999	Additional data – ISO
47	an ...999	Additional data – National
48	an ...999	Additional data – Private
49	a 3	Currency code, transaction
50	an 3	Currency code, settlement
51	a 3	Currency code, cardholder billing
52	b 16	Personal Identification number data
53	b 18	Security related control information
54	an ...120	Additional amounts
55	ans ...999	Reserved ISO
56	ans ...999	Reserved ISO
57	ans ...999	Reserved National
58	ans ...999	Reserved National
59	ans ...999	Reserved for national use
60	an .7	Advice/reason code (private reserved)
61	ans ...999	Reserved Private
62	ans ...999	Reserved Private
63	ans ...999	Reserved Private
64	b 16	Message authentication code (MAC)
65	b 64	Bit map, tertiary
66	n 1	Settlement code
67	n 2	Extended payment code
68	n 3	Receiving institution country code
69	n 3	Settlement institution county code
70	n 3	Network management Information code
71	n 4	Message number
72	ans ...999	Data record (ISO 8583:1993)/n 4 Message number, last(?)
73	n 6	Date, Action
74	n 10	Credits, number
75	n 10	Credits, reversal number
76	n 10	Debits, number
77	n 10	Debits, reversal number
78	n 10	Transfer number
79	n 10	Transfer, reversal number
80	n 10	Inquiries number
81	n 10	Authorizations, number
82	n 12	Credits, processing fee amount
83	n 12	Credits, transaction fee amount
84	n 12	Debits, processing fee amount
85	n 12	Debits, transaction fee amount
86	n 15	Credits, amount
87	n 15	Credits, reversal amount
88	n 15	Debits, amount
89	n 15	Debits, reversal amount
90	n 42	Original data elements



Data Element	Type	Usage
91	an 1	File update code
92	n 2	File security code
93	n 5	Response indicator
94	an 7	Service indicator
95	an 42	Replacement amounts
96	an 8	Message security code
97	n 16	Amount, net settlement
98	ans 25	Payee
99	n ..11	Settlement institution identification code
100	n ..11	Receiving institution identification code
101	ans 17	File name
102	ans ..28	Account identification 1
103	ans ..28	Account identification 2
104	ans ...100	Transaction description
105	ans ...999	Reserved for ISO use
106	ans ...999	Reserved for ISO use
107	ans ...999	Reserved for ISO use
108	ans ...999	Reserved for ISO use
109	ans ...999	Reserved for ISO use
110	ans ...999	Reserved for ISO use
111	ans ...999	Reserved for ISO use
112	ans ...999	Reserved for national use
113	n ..11	Authorizing agent institution id code
114	ans ...999	Reserved for national use
115	ans ...999	Reserved for national use
116	ans ...999	Reserved for national use
117	ans ...999	Reserved for national use
118	ans ...999	Reserved for national use
119	ans ...999	Reserved for national use
120	ans ...999	Reserved for national use
121	ans ...999	Reserved for national use
122	ans ...999	Reserved for national use
123	ans ...999	Reserved for national use
124	ans ...255	Info Text
125	ans ..50	Network management information
126	ans .6	Issuer trace id
127	ans ...999	Reserved for private use
128	b 16	Message Authentication code

Cara membaca kode di kolom type yakni sebagai berikut,

Type	Meaning
a	Alphabetic, including blanks (space)
n	Numeric values only
s	Special characters only
an	Alphanumeric
as	Alpha & special characters only
ns	Numeric & special characters only

Type	Meaning
ans	Alphabetic, numeric, and special characters
b	Binary data
z	Tracks 2 or 3 code set as defined in ISO/IEC 7813 and ISO/IEC 4909 respectively
. / .. / ...	Variable field length indicator, each . indicating a digit
x / xx / xxx	Fixed length of field or maximum length in the case of variable length fields

Fixed	No field length used
LLVAR ( ..xx )	Where LL < 100, means two leading digits LL specify the field length of field VAR
LLLVAR ( ...xxx )	Where LLL < 1000, means three leading digits LLL specify the field length of field VAR
LL and LLL are hex or ASCII. A VAR field can be compressed or ASCII depending of the data element type	LL can be 1 or 2 bytes. For example, if compressed as one hex byte, '27x means there are 27 VAR bytes to follow. If ASCII, the two bytes '32x, '37x mean there are 27 bytes to follow. 3 digit field length LLL uses 2 bytes with a leading '0' nibble if compressed, or 3 bytes if ASCII. The format of a VAR data element depends on the data element type. If numeric it will be compressed, e.g. 87456 will be represented by 3 hex bytes '087456x. If ASCII then one byte for each digit or character is used, e.g. '38x, '37x, '34x, '35x, '36x.

Contohnya yakni sebagai berikut,

Type	Meaning	Example
N4	Fixed length, 4 digit numeric	9753
N . 4	LVAR Numeric, 1 digit var . len, 4 digit data len	49753
A .. 15	LLVAR Alphanumeric, 2 digit var len, max 15 digit data len	11CONTOH-SAJA
A ... 999	LLLVAR Alphanumeric, 3 digit var len, max 999 digit data len	015INI-CONTOH-JUGA

Jadi, cara mengartikan data element yakni sebagai berikut,

Data Element	1234561231061311010000000050000000250000	
3	n 6	123456
14	n 4	1231
15	n 4	0613
25	n 2	11
28	n 8	01000000
29	n 8	00500000
31	n 8	00250000

## Referensi

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<http://martinusadyh.web.id/tulisanku/berkenalan-dengan-iso-8583-menggunakan-java/>,  
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Shahid Suri, "ISO 8583 Financial Transaction Message Format",

<https://sites.google.com/site/paymentsystemsblog/iso8583-financial-transaction-message-format>, diakses pada tanggal 27 Januari 2013

## Perangkat lunak

ISO8583 Editor - <http://iso8583.free.fr>

- <http://www.softpedia.com/progClean/A-Simple-ISO-8583-Editor-and-Message-Checker-Clean-219719.html> (alternatif)

jPOS - <http://www.jpos.org>

- <https://github.com/jpos/jPOS> (alternatif)

## Tentang Penulis



AMYunus, seorang fresh graduate lulusan Fakultas Ilmu Komputer Universitas Indonesia. Dengan mengambil jurusan Sistem Informasi selama 4 tahun, ia berhasil meraih gelar S. Kom. dalam waktu 4 tahun. Ia membuat karya tulis akhir (skripsi) berjudul “Analisis dan Perancangan Sistem Enterprise Resource Planning pada Fungsi Bisnis Production Management: Studi Kasus Usaha Mikro Kecil dan Menengah”.

Ia aktif dalam beberapa organisasi dan kepanitiaan saat masih menjadi mahasiswa. Ia pernah menjadi anggota organisasi Islam universitas. Ia juga pernah menjadi anggota dan ketua divisi organisasi Islam fakultas. Selain itu ia sering terlibat dalam berbagai kepanitiaan lingkup fakultas seperti Open House Fasilkom, IT Governance Maturity Benchmark, Compfest, Fuki Fair, dan lain sebagainya.

Walaupun berstatus fresh graduate, ia sudah memiliki pengalaman pekerjaan selama setahun sebagai web application developer di sebuah perusahaan software house berlokasi Kelapa Gading, Jakarta Utara. Selain itu ia juga sudah memiliki banyak pengalaman proyek sebagai freelancer, juga sebagai web application developer. Berbekal pengalaman tersebut, ia berharap tidak kaget dengan dunia pekerjaan yang akan digelutinya nanti.

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