

Teknologi Komunikasi dan Informasi
ICT4CommStudies
INFORMASI
Sub-MODUL 03C NILAI INFORMASI

The collage features several distinct elements:

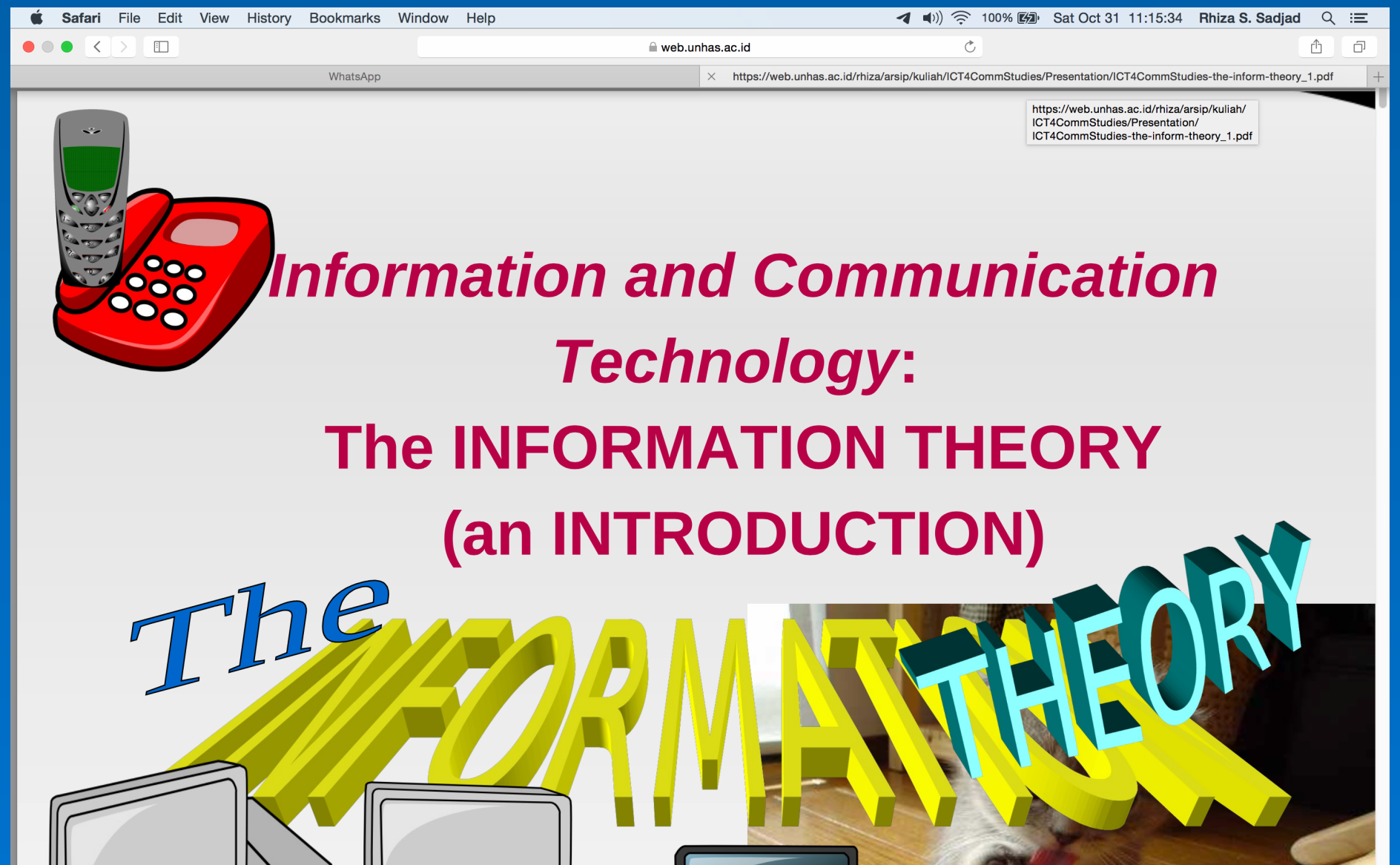
- Top Left:** A green Bitcoin logo with binary code in the background.
- Top Right:** A blue abstract background with the text "WAVE MOVE" and "alamy stock photo".
- Middle Left:** A world map with binary code, titled "BINARY DIGIT (0 & 1) CONVERSION".
- Middle Center:** A table showing binary to decimal conversion:

Binary:	0	1	1	0	0	1	0	1
Decimal:	128	64	32	16	8	4	2	1
	No	Yes	Yes	No	No	Yes	No	Yes
		64	32			4		1
Decimal Equivalent: 101								
- Middle Right:** A circular graphic with binary code, titled "Ultimate Bot Binary DIGIT OVER".
- Bottom Left:** A CD-ROM with the text "BINARY DIGIT '58490 ELECTRONICS'", "DREAM TICKET", and "AL ELECTROZWERG BEAT C AZ NOW YOU KNOW MY NAME 91 ELECTROZWERG BEAT'S 92 TAPE BRUNCH".
- Bottom Center:** A screenshot of a "Ultimate Bot Binary DIGIT OVER" interface showing a list of items and their prices.
- Bottom Right:** Text overlays including "Abbreviation Finder", "BIT", "Binary Digit", and "binary digit".

PRESENTASI (untuk REFERENSI)

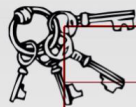
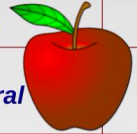
Silakan klik:

https://web.unhas.ac.id/rhiza/arsip/kuliah/ICT4CommStudies/Presentation/ICT4CommStudies-the-inform-theory_1.pdf



NILAI INFORMASI diukur dengan satuan “bit”

Key element/basic resource

 Society	Key element
 Agricultural	FOOD 
 Industrial	ENERGY 
 Information	INFORMATION

ELEMEN KUNCI ini menjadi **KOMODITAS**

Key element/basic resource

Key element	UNIT
FOOD 	kg, lbs, liter, oz
ENERGY 	kWh, Joule,barrel
INFORMATION 	???????

Sebagai **KOMODITAS**, setiap **ELEMEN KUNCI** harus memiliki **SATUAN** atau **UNIT** untuk berbagai **TRANSAKSI** dalam kehidupan

The SMALLEST UNIT of INFORMATION



The SIMPLEST FORM of INFORMATION

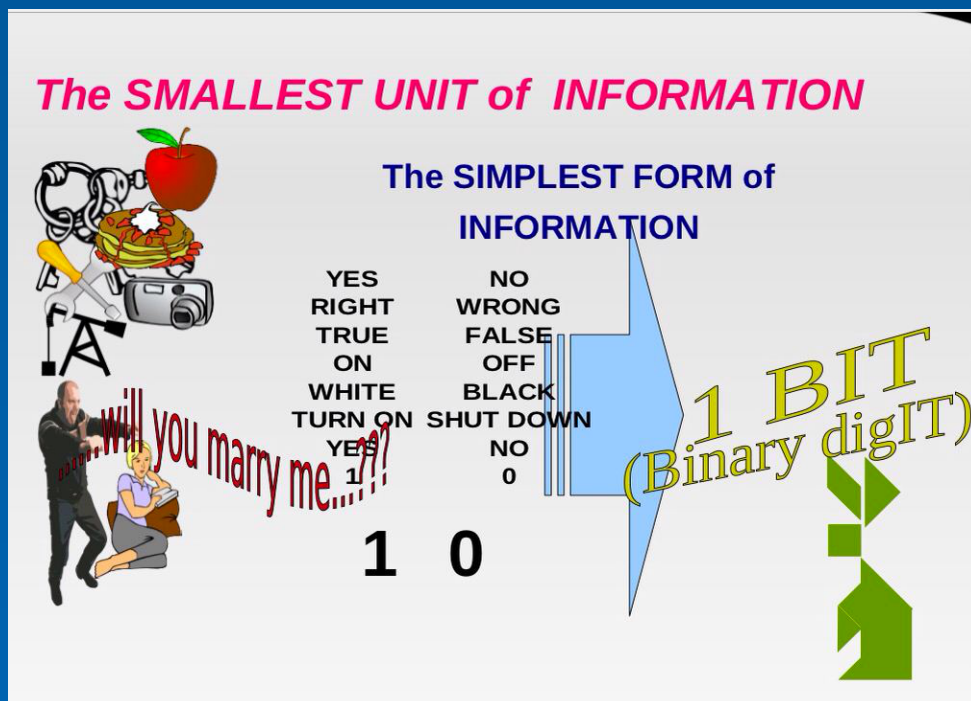
YES	NO
RIGHT	WRONG
TRUE	FALSE
ON	OFF
WHITE	BLACK
TURN ON	SHUT DOWN
YES	NO
1	0

1 BIT
(Binary digit)

SATUAN INFORMASI untuk mengukur **NILAI**-nya adalah “**bit**”

bit = binary digit

1 (satu) bit INFORMASI



NILAI INFORMASI yang terkecil adalah **1 (satu) bit** :

Ketika seseorang memerlukan **jawaban**

“YES” or **“NO”**

maka **INFORMASI**

yang diperlukannya itu ber-**NILAI**
1 (satu) bit

1 (satu) bit INFORMASI = 1 atau 0

n-bit INFORMASI = 1011100.....n = n buah 1 atau 0

n-bit INFORMASI membedakan.....

The VALUE of an INFORMATION



1 BIT =

YA TIDAK
BENAR SALAH
TRUE FALSE
ON OFF
HITAM PUTIH
NYALA PADAM
YES NO

1 0

differs 2 things



2 BITS
could differ 4 things



00



01



10



11



The VALUE of an INFORMATION



3 BITS
could differ up to 8 things



000



100



001



101



010



110



011



111

n BITS

could differ up to 2^n things:

0000

0100

1000

1100

0001

0101

1001

1101

0010

0110

1010

1110

0011

0111

1011

1111

8-bit ASCII code (0000 0000 s/d 1111 1111

 **ASCII Code =**
American Standard Code for Information Interchange

abcdefghijklmnopqrstuvwxyz
ABCDEFGHIJKLMNOPQRSTUVWXYZ
0123456789
!@#\$%^&*()_+=~\}|["';?/.,<

examples

H = 01001000 a = 01100001
\\ = 01011100 b = 01100010
h = 01101000 Z = 01011010

8 BIT codes
from
up to
00000000
11111111

Decimal	Hex	Char	Decimal	Hex	Char	Decimal	Hex	Char	Decimal	Hex	Char
0	0	[NULL]	32	20	[SPACE]	64	40	@	96	60	`
1	1	[START OF HEADING]	33	21	!	65	41	A	97	61	a
2	2	[START OF TEXT]	34	22	"	66	42	B	98	62	b
3	3	[END OF TEXT]	35	23	#	67	43	C	99	63	c
4	4	[END OF TRANSMISSION]	36	24	\$	68	44	D	100	64	d
5	5	[ENQUIRY]	37	25	%	69	45	E	101	65	e
6	6	[ACKNOWLEDGE]	38	26	&	70	46	F	102	66	f
7	7	[BELL]	39	27	'	71	47	G	103	67	g
8	8	[BACKSPACE]	40	28	(	72	48	H	104	68	h
9	9	[HORIZONTAL TAB]	41	29	)	73	49	I	105	69	i
10	A	[LINE FEED]	42	2A	*	74	4A	J	106	70	j
11	B	[VERTICAL TAB]	43	2B	+	75	4B	K	107	71	k
12	C	[FORM FEED]	44	2C	,	76	4C	L	108	72	l
13	D	[CARRIAGE RETURN]	45	2D	-	77	4D	M	109	73	m
14	E	[SHIFT OUT]	46	2E	.	78	4E	N	110	74	n
15	F	[SHIFT IN]	47	2F	/	79	4F	O	111	75	o
16	10	[DATA LINK ESCAPE]	48	30	0	80	50	P	112	76	p
17	11	[DEVICE CONTROL 1]	49	31	1	81	51	Q	113	77	q
18	12	[DEVICE CONTROL 2]	50	32	2	82	52	R	114	78	r
19	13	[DEVICE CONTROL 3]	51	33	3	83	53	S	115	79	s
20	14	[DEVICE CONTROL 4]	52	34	4	84	54	T	116	80	t
21	15	[NEGATIVE ACKNOWLEDGE]	53	35	5	85	55	U	117	81	u
22	16	[SYNCHRONOUS IDLE]	54	36	6	86	56	V	118	82	v
23	17	[ENG OF TRANS. BLOCK]	55	37	7	87	57	W	119	83	w
24	18	[CANCEL]	56	38	8	88	58	X	120	84	x
25	19	[END OF MEDIUM]	57	39	9	89	59	Y	121	85	y
26	1A	[SUBSTITUTE]	58	3A	:	90	5A	Z	122	86	z
27	1B	[ESCAPE]	59	3B	;	91	5B	[	123	87	[
28	1C	[FILE SEPARATOR]	60	3C	<	92	5C	\	124	88	\
29	1D	[GROUP SEPARATOR]	61	3D	=	93	5D	]	125	89	]
30	1E	[RECORD SEPARATOR]	62	3E	>	94	5E	^	126	90	^
31	1F	[UNIT SEPARATOR]	63	3F	?	95	5F	_	127	91	_

0 s/d 127 (128 kode) digunakan untuk ASCII codes
128 s/d 255 digunakan untuk Extended-ASCII

Dec	Hex	Oct	Char	Dec	Hex	Oct	Char	Dec	Hex	Oct	Char	Dec	Hex	Oct	Char
128	80	120	€	129	81	121	€	160	A0	240	À	192	C0	304	Ê
130	82	122	£	131	83	123	£	161	A1	241	Á	193	C1	305	Ë
132	84	124	¥	133	85	125	¥	162	A2	242	Â	194	C2	306	Ì
134	86	126	¢	135	87	127	¢	164	A4	244	Ä	196	C4	308	Ó
136	88	128	ª	137	89	129	ª	166	A6	246	Å	198	C6	310	Ô
138	8A	130	«	139	8B	131	«	168	A8	248	Æ	200	C8	312	Õ
140	8C	132	»	141	8D	133	»	170	AA	250	Ç	202	CA	314	Ö
142	8E	134	¼	143	8F	135	¼	172	AC	252	À	204	CC	316	×
144	90	136	½	145	91	137	½	174	AE	254	Š	206	CE	318	÷
146	92	138	¾	147	93	139	¾	176	B0	256	Ž	208	D0	320	×
148	94	140	⅓	149	95	141	⅓	178	B2	258	ƒ	210	D2	322	×
150	96	142	⅔	151	97	143	⅔	180	B4	260	€	212	D4	324	×
152	98	144	⅕	153	99	145	⅕	182	B6	262	€	214	D6	326	×
154	9A	146	⅙	155	9B	147	⅙	184	B8	264	€	216	D8	328	×
156	9C	148	⅚	157	9D	149	⅚	186	BA	266	€	218	DA	330	×
158	9E	150	⅛	159	9F	151	⅛	188	BC	268	€	220	DC	332	×
160	A0	152	⅜	161	A1	153	⅜	190	BE	270	€	222	DE	334	×
162	A2	154	⅝	163	A3	155	⅝	192	C0	304	Ê	224	E0	336	×
164	A4	156	⅞	165	A5	157	⅞	194	C2	306	Ë	226	E2	338	×
166	A6	158	⅞	167	A7	159	⅞	196	C4	308	Ì	228	E4	340	×
168	A8	160	À	169	A9	161	À	198	C6	310	Ó	230	E6	342	×
170	AA	162	Å	171	AB	163	Å	200	C8	312	Ô	232	E8	344	×
172	AC	164	Ç	173	AD	165	Ç	202	CA	314	Ö	234	EA	346	×
174	AE	166	Š	175	AF	167	Š	204	CC	316	×	236	EC	348	×
176	B0	168	Ž	177	B1	169	Ž	206	CE	318	÷	238	EE	350	×
178	B2	170	ƒ	179	B3	171	ƒ	208	D0	320	×	240	EF	352	×
180	B4	172	€	181	B5	173	€	210	D2	322	×	242	F0	354	×
182	B6	174	€	183	B7	175	€	212	D4	324	×	244	F2	356	×
184	B8	176	€	185	B9	177	€	214	D6	326	×	246	F4	358	×
186	BA	178	€	187	BB	179	€	216	D8	328	×	248	F6	360	×
188	BC	180	€	189	BD	181	€	218	DA	330	×	250	F8	362	×
190	BE	182	€	191	BF	183	€	220	DC	332	×	252	FA	364	×
192	C0	184	Ê	193	C1	185	Ê	222	DE	334	×	254	FC	366	×
194	C2	186	Ë	195	C3	187	Ë	224	E0	336	×	256	FE	368	×
196	C4	188	Ì	197	C5	189	Ì	226	E2	338	×	258	FF	370	×
198	C6	190	Ó	199	C7	191	Ó	228	E4	340	×	260		372	
200	C8	192	Ô	201	C9	193	Ô	230	E6	342	×	262		374	
202	CA	194	Ö	203	CB	195	Ö	232	E8	344	×	264		376	
204	CC	196	×	205	CD	197	×	234	EA	346	×	266		378	
206	CE	198	÷	207	CE	199	÷	236	EC	348	×	268		380	
208	D0	200	×	209	CF	201	×	238	EE	350	×	270		382	
210	D2	202	×	211	CF	203	×	240	EF	352	×	272		384	
212	D4	204	×	213	D0	205	×	242	F0	354	×	274		386	
214	D6	206	×	215	D1	207	×	244	F2	356	×	276		388	
216	D8	208	×	217	D2	209	×	246	F4	358	×	278		390	
218	DA	210	×	219	D3	211	×	248	F6	360	×	280		392	
220	DC	212	×	221	D4	213	×	250	F8	362	×	282		394	
222	DE	214	×	223	D5	215	×	252	FA	364	×	284		396	
224	E0	216	×	225	D6	217	×	254	FC	366	×	286		398	
226	E2	218	×	227	D7	219	×	256	FE	368	×	288		400	
228	E4	220	×	229	D8	221	×	258		370		290		402	
230	E6	222	×	231	D9	223	×	260		372		292		404	
232	E8	224	×	233	DA	225	×	262		374		294		406	
234	EA	226	×	235	DB	227	×	264		376		296		408	
236	EC	228	×	237	DC	229	×	266		378		298		410	
238	EE	230	×	239	DD	231	×	268		380		300		412	
240	EF	232	×	241	DE	233	×	270		382		302		414	
242	F0	234	×	243	DF	235	×	272		384		304		416	
244	F2	236	×	245	DF	237	×	274		386		306		418	
246	F4	238	×	247	DF	239	×	276		388		308		420	
248	F6	240	×	249	DF	241	×	278		390		310		422	
250	F8	242	×	251	DF	243	×	280		392		312		424	
252	FA	244	×	253	DF	245	×	282		394		314		426	
254	FC	246	×	255	DF	247	×	284		396		316		428	
256	FE	248	×	257	DF	249	×	286		398		318		430	
258	FF	250	×	259	DF	251	×	288		400		320		432	

SATUAN yang lebih BESAR dari 1 bit

Larger units of INFORMATION



1000 bit → 1 Kilobit → 1 Kb

1000 Kb → 1 Megabit → 1 Mb

1000 Mb → 1 Gigabit → 1 Gb

1000 Gb → 1 Terrabit → 1 Tb

1 Byte → 1 B = 8 s/d 10 bit

Tergantung
sistem yang
digunakan,
umumnya

1 Byte = 10 bit
1 MB = 10 Mb

Note: tidak ada satuan yang
lebih kecil, seperti **desi, centi, mili, mikro, nano...**

CONTOH SOAL

For example.....

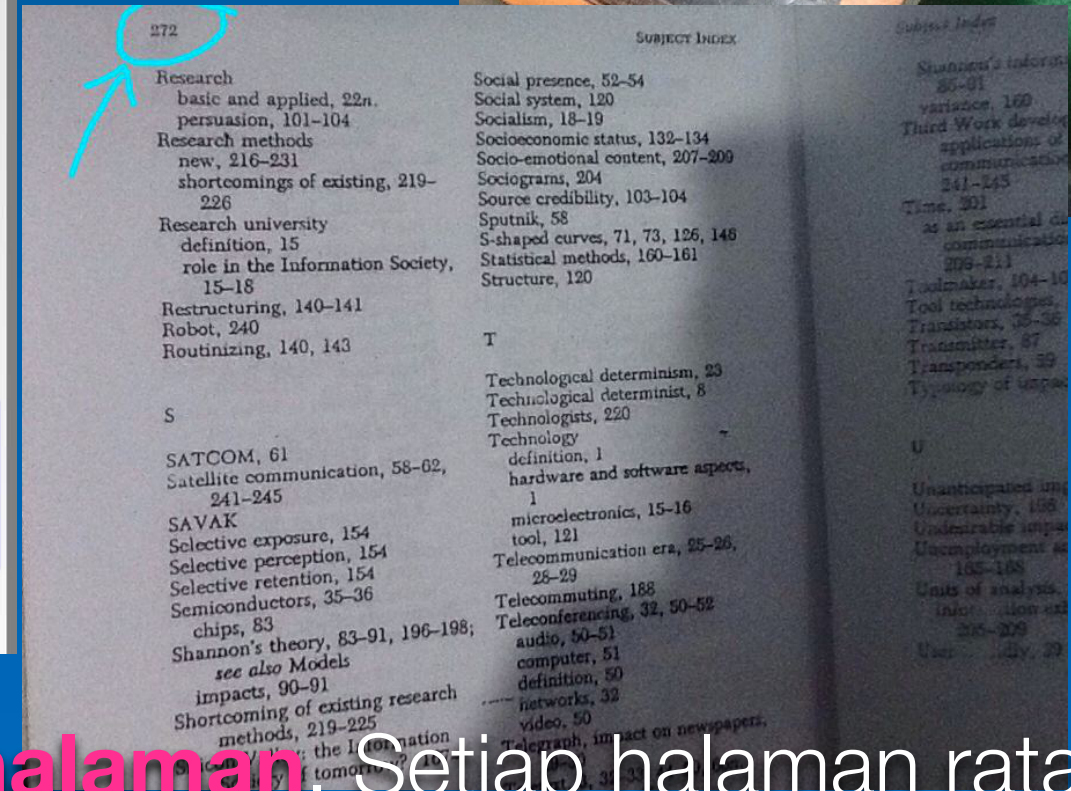
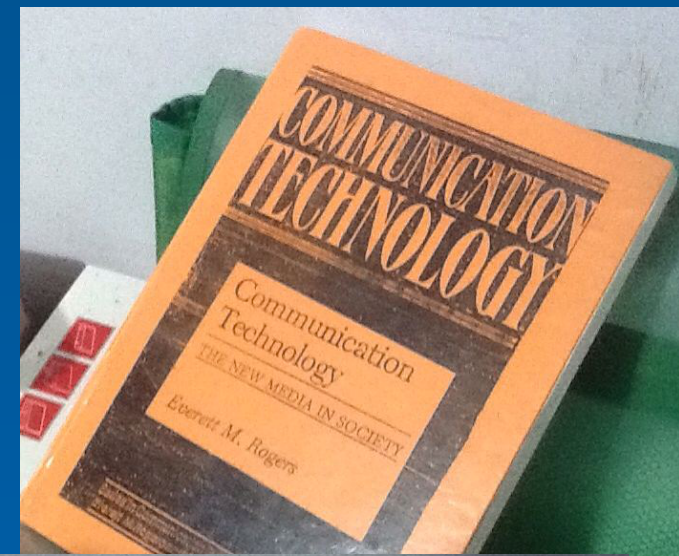
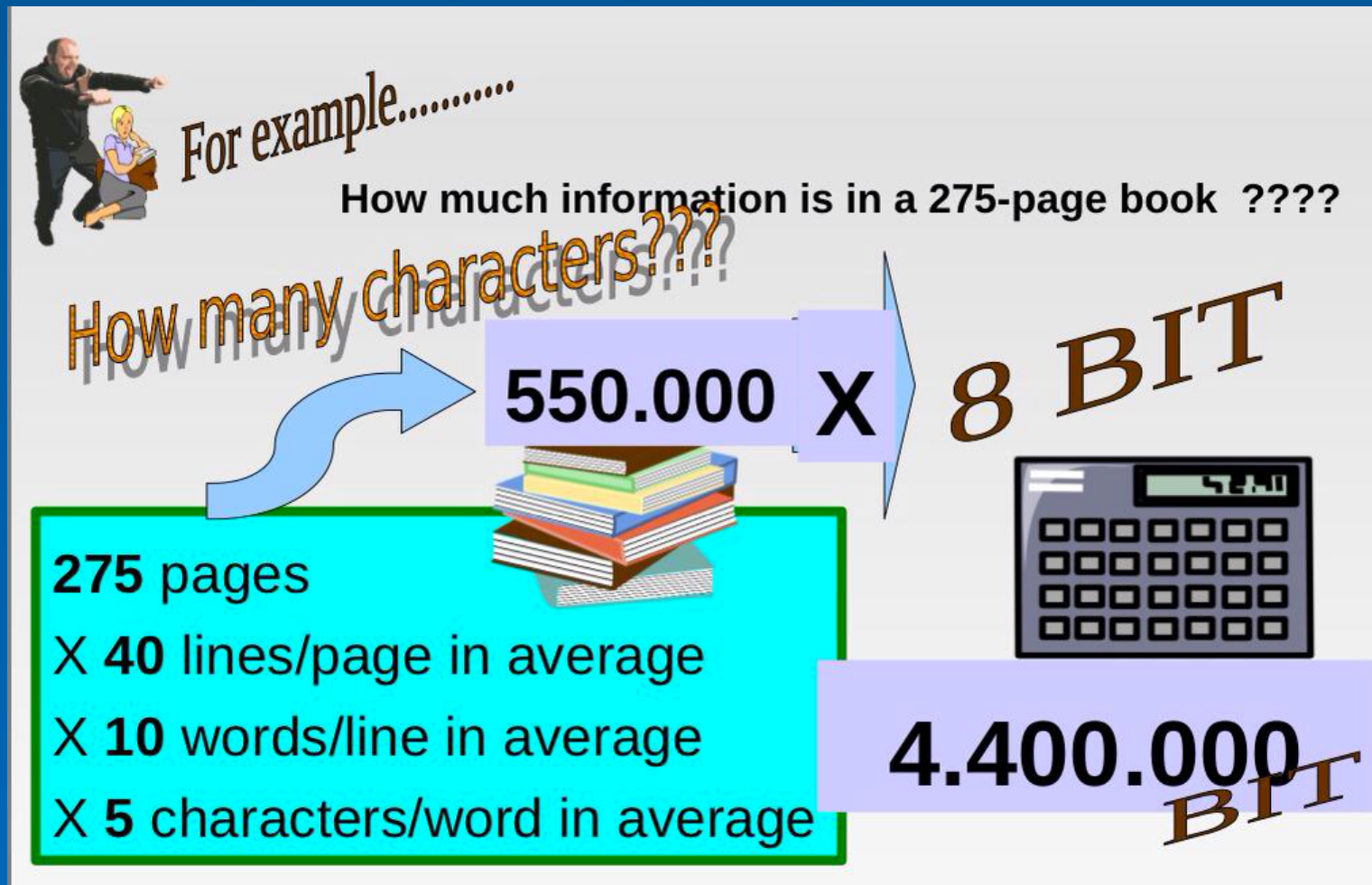
How much information is in a 275-page book ????

How many characters???

275 pages
X 40 lines/page in average
X 10 words/line in average
X 5 characters/word in average

550.000 X 8 BIT

4.400.000 BIT



Buku karangan Rogers berisi sekitar **275 halaman**. Setiap halaman rata2 berisi **40 baris @10 kata** Bahasa Inggris. Setiap kata rata2 tersusun dari **5 huruf**. Jika setiap huruf di-kode-kan dengan **ASCII-code 8 bit**, berapa **nilai informasi** buku tersebut?

Jawab: **Nilai Informasi** = (jumlah huruf) X 8 bit = (275X40X10X5) X 8 bit
= 550.000X8 bit = **4.400.000 bit** = **4,4 Mb** = **440 KB**

TUGAS MANDIRI (TIDAK DIKUMPUL)

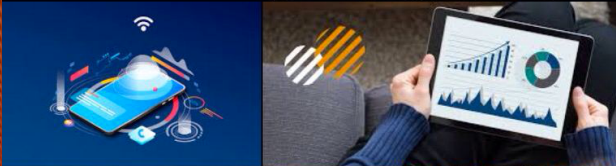
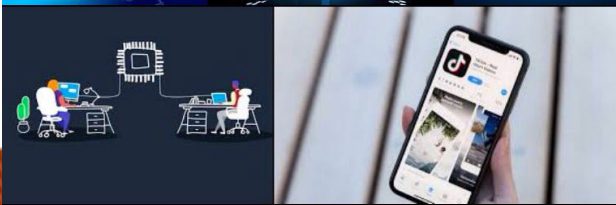
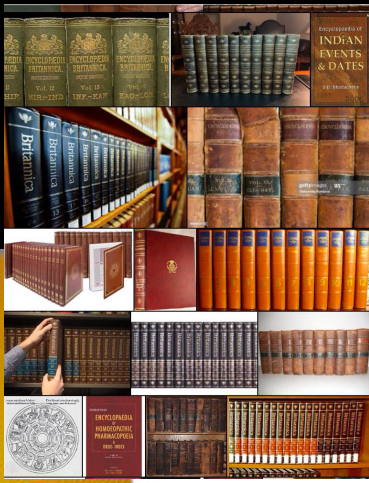
- Berapa banyak buku dengan “**size**” sebesar buku karangan Rogers dapat dimuat dalam sebuah **Flashdisk** ukuran **16 MB**?
- Jika karakter dari **keyboard** bisa di-kodekan dengan misalnya **ASCII-code**, pikirkan (dan carilah info) tentang bagaimana mengkodekan **gambar**, **citra** (**image**), **citra bergerak** (**video**) dan isyarat **bunyi** dan **suara**?

SELANJUTNYA

- MODUL 01: MOTIVASI
- MODUL 02: TEKNOLOGI:
 - Sub-MODUL 02A: Makna Ter-isolasi
 - Sub-MODUL 02B: Makna Diperluas
- MODUL 03: INFORMASI:
 - Sub-MODUL 03A: Masyarakat INFORMASI
 - Sub-MODUL 03B: Sistem INFORMASI
 - Sub-MODUL 03C: Nilai INFORMASI
- **MODUL 04: KOMUNIKASI**

SEKIAN

Terimakasih



BINARY DIGIT (0 & 1) CONVERSION

Binary:	0	1	1	0	0	1	0	1
Decimal:	128	64	32	16	8	4	2	1
	No	Yes	Yes	No	No	Yes	No	Yes
		64	32			4		1
		Decimal Equivalent: 101						

BINARY DIGIT "9440 ELECTRONICS"

AL ELECTRONICS BEAT C
AL ELECTRONICS BEAT B
AL ELECTRONICS BEAT A
AL ELECTRONICS BEAT D

Ultimate Bot Binary DIGIT OVER

Profit konsisten \$5-\$10 per hari!

Abbreviation Finder

BIT

Binary Digit

www.abbreviationfinder.org

binary digit