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Program & Block: BSCS 3A

**Activity 1:**

**How Can a Bit/Byte Transform Into a Readable Text?**

**Direction:**

- Your main task is to convert each number from its given base (binary, octal, or hexadecimal) to its equivalent decimal value.
- Once you have the decimal value for each item, use an **ASCII table** to find the character that corresponds to that number. The ASCII (American Standard Code for Information Interchange) table is a standard that assigns a unique number to each letter, number, and symbol on a keyboard.
- Finally, take the ASCII character you found for each decimal number and string them all together in order. When you've finished, you'll have the decrypted message.
- Attach the pictures of your handwritten solution in this word file.

_____1.104_10	_____24. 101_10
_____2.01110100_2	_____25. 01001110_2
_____3.74_16	_____26. 141_8
_____4.160_8	_____27. 42_16
_____5.163_8	_____28. 97_10
_____6.00111010_2	_____29. 00101101_2
_____7.57_8	_____30. 120_8
_____8.47_10	_____31. 77_16
_____9.74_16	_____32. 101_10
_____10. 01101001_2	_____33. 01100100_2
_____11. 156_8	_____34. 145_8
_____12. 121_10	_____35. 50_16
_____13. 01110101_2	_____36. 97_10
_____14. 72_16	_____37. 01001101_2
_____15. 154_8	_____38. 141_8
_____16. 46_10	_____39. 67_16
_____17. 01100011_2	_____40. 83_10
_____18. 6F_16	_____41. 01101000_2
_____19. 155_8	_____42. 151_8
_____20. 47_10	_____43. 66_16
_____21. 01010011_2	_____44. 116_10
_____22. 75_16	_____45. 01110100_2
_____23. 162_8	_____46. 164_8

Dec	Char	Dec	Char	Dec	Char	Dec	Char
0	Ctrl-@ NUL	32	Space	64	@	96	`
1	Ctrl-A SOH	33	!	65	A	97	a
2	Ctrl-B STX	34	"	66	B	98	b
3	Ctrl-C ETX	35	#	67	C	99	c
4	Ctrl-D EOT	36	\$	68	D	100	d
5	Ctrl-E ENQ	37	%	69	E	101	e
6	Ctrl-F ACK	38	&	70	F	102	f
7	Ctrl-G BEL	39	'	71	G	103	g
8	Ctrl-H BS	40	(	72	H	104	h
9	Ctrl-I HT	41	)	73	I	105	i
10	Ctrl-J LF	42	*	74	J	106	j
11	Ctrl-K VT	43	+	75	K	107	k
12	Ctrl-L FF	44	,	76	L	108	l
13	Ctrl-M CR	45	-	77	M	109	m
14	Ctrl-N SO	46	.	78	N	110	n
15	Ctrl-O SI	47	/	79	O	111	o
16	Ctrl-P DLE	48	0	80	P	112	p
17	Ctrl-Q DCI	49	1	81	Q	113	q
18	Ctrl-R DC2	50	2	82	R	114	r
19	Ctrl-S DC3	51	3	83	S	115	s
20	Ctrl-T DC4	52	4	84	T	116	t
21	Ctrl-U NAK	53	5	85	U	117	u
22	Ctrl-V SYN	54	6	86	V	118	v
23	Ctrl-W ETB	55	7	87	W	119	w
24	Ctrl-X CAN	56	8	88	X	120	x
25	Ctrl-Y EM	57	9	89	Y	121	y
26	Ctrl-Z SUB	58	:	90	Z	122	z
27	Ctrl-[ ESC	59	;	91	[	123	{
28	Ctrl-` FS	60	<	92	₩	124	
29	Ctrl-] GS	61	=	93	]	125	}
30	Ctrl-^ RS	62	>	94	^	126	~
31	Ctrl_ US	63	?	95	_	127	DEL

~~10~~ ~~10~~

1)  $104_{-10} \rightarrow \textcircled{5}$

2)  $61110100_{-2}$

$$(0 \cdot 2^7) + (0 \cdot 2^6) + (1 \cdot 2^5) + (1 \cdot 2^4) + (1 \cdot 2^3) + (0 \cdot 2^2) (0 \cdot 2^1) + (0 \cdot 2^0) \\ = 116 \rightarrow \textcircled{t}$$

3)  $24_{-16}$

$$7 \times (16^1) + (4 \cdot 16^0) = 116 \rightarrow \textcircled{t}$$

4)  $160_{-8}$

$$(1 \cdot 8^2) + (6 \cdot 8^1) + (0 \cdot 8^0) = 112 \rightarrow \textcircled{P}$$

5)  $163_{-8}$

$$(1 \cdot 8^2) + (6 \cdot 8^1) + (3 \cdot 8^0) = 115 \rightarrow \textcircled{s}$$

6)  $00111010_{-2}$

$$(0 \cdot 2^7) + (0 \cdot 2^6) + (1 \cdot 2^5) + (1 \cdot 2^4) + (1 \cdot 2^3) + (0 \cdot 2^2) + (1 \cdot 2^1) + (0 \cdot 2^0) \\ = 58 \rightarrow \textcircled{i}$$

7)  $57_{-8}$

$$(5 \cdot 8^1) + (7 \cdot 8^0) = 47 \rightarrow \textcircled{1}$$

8)  $47_{-10} \rightarrow \textcircled{1}$

9)  $74_{-16}$

$$(7 \cdot 16^1) + (7 \cdot 16^0) = 116 \rightarrow \textcircled{t}$$

10)  $611101001_{-2}$

$$(0 \cdot 2^7) + (1 \cdot 2^6) + (1 \cdot 2^5) + (0 \cdot 2^4) + (1 \cdot 2^3) + (0 \cdot 2^2) + (0 \cdot 2^1) + (1 \cdot 2^0) = 115 \rightarrow \textcircled{i}$$

11) 156-8

$$(1 \cdot 8^2) + (5 \cdot 8^1) + (6 \cdot 8^0) = 110 \rightarrow 6$$

12) 121-10  $\rightarrow 5$

13) 01110101-2

$$(0 \cdot 2^7) + (0 \cdot 2^6) + (1 \cdot 2^5) + (1 \cdot 2^4) + (0 \cdot 2^3) + (1 \cdot 2^2) + (0 \cdot 2^1) + (1 \cdot 2^0) \\ = 117 \rightarrow 11$$

14) 72-16  $(7 \cdot 16^1) + (2 \cdot 16^0) = 114 \rightarrow 11$

15) ~~154-8~~  $(1 \cdot 8^2) + (5 \cdot 8^1) + (4 \cdot 8^0) = 108 \rightarrow 11$

16) 46-10  $\rightarrow 0$

17) 01100011-2  
 $(0 \cdot 2^7) + (1 \cdot 2^6) + (1 \cdot 2^5) + (0 \cdot 2^4) + (0 \cdot 2^3) + (0 \cdot 2^2) + (1 \cdot 2^1) + (1 \cdot 2^0) \\ = 99 \rightarrow 0$

18) 6F-16

$$(6 \cdot 16^1) + (15 \cdot 16^0) = 111 \rightarrow 0$$

19) 155-8  
 $(1 \cdot 8^2) + (5 \cdot 8^1) + (5 \cdot 8^0) = 109 \rightarrow 109$

20) 47-10  $\rightarrow 1$

21) 01010011-2

$$(0 \cdot 2^7) + (0 \cdot 2^6) + (1 \cdot 2^5) + (0 \cdot 2^4) + (0 \cdot 2^3) + (1 \cdot 2^2) + (1 \cdot 2^1) + (1 \cdot 2^0) = 83 \rightarrow 5$$

22) 75-16

$$(7 \cdot 16^1) + (5 \cdot 16^0) = 117 \rightarrow 11$$

23) 162-8

$$(1 \cdot 8^2) + (6 \cdot 8^1) + (2 \cdot 8^0) = 114 \rightarrow 114$$

$$24) 101_2 - 10 \rightarrow e$$

$$25) 0100111_2 - 2$$

$$(0 \cdot 2^6) + (1 \cdot 2^5) + (0 \cdot 2^4) + (0 \cdot 2^3) + (1 \cdot 2^2) + (1 \cdot 2^1) + (0 \cdot 2^0) \\ = 78 \rightarrow N$$

$$26) 111_2 - 8 \quad (1 \cdot 2^2) + (1 \cdot 2^1) + (1 \cdot 2^0) = 9 \rightarrow a$$

$$27) 42_10 - 16 \quad (4 \cdot 16^1) + (2 \cdot 16^0) = 66 \rightarrow B$$

$$28) 97_10 \rightarrow a$$

$$29) 0010110_1$$

$$(0 \cdot 2^6) + (0 \cdot 2^5) + (1 \cdot 2^4) + (1 \cdot 2^3) + (0 \cdot 2^2) + (1 \cdot 2^1) \\ = 45 \rightarrow e$$

$$30) 120_8 - 8 \quad (1 \cdot 8^2) + (2 \cdot 8^1) + (0 \cdot 8^0) = 80 \rightarrow P$$

$$31) 77_16 - 16 \quad (7 \cdot 16^1) + (7 \cdot 16^0) = 119 \rightarrow u$$

$$32) 101_2 - 10 \rightarrow e$$

$$33) 01100100_2$$

$$(0 \cdot 2^7) + (1 \cdot 2^6) + (1 \cdot 2^5) + (0 \cdot 2^4) + (0 \cdot 2^3) + (1 \cdot 2^2) + (1 \cdot 2^1) + (0 \cdot 2^0) \\ = 100 \rightarrow d$$

~~$$34) 101_2 - 10 \rightarrow e$$~~

$$34) 145_8 - 8 \quad (1 \cdot 8^2) + (4 \cdot 8^1) + (5 \cdot 8^0) = 101 \rightarrow e$$

$$35) 50_16 - 16 \quad (5 \cdot 16^1) + (0 \cdot 16^0) = 80 \rightarrow P$$

$$37) 61001101_2$$

$$(0 \cdot 2^9) + (1 \cdot 2^8) + (0 \cdot 2^7) + (0 \cdot 2^6) + (1 \cdot 2^5) + (1 \cdot 2^4) + (0 \cdot 2^3) + (0 \cdot 2^2) + (1 \cdot 2^1) \\ = 77 \rightarrow M$$

$$38) 141-8 \quad (1 \cdot 8^2) + (4 \cdot 8^1) + (1 \cdot 8^0) = 97 \rightarrow \textcircled{a}$$

$$39) 67-16 \quad (6 \cdot 16^1) + (7 \cdot 16^0) = 103 \rightarrow \textcircled{d}$$

$$40) 83-10 \rightarrow \textcircled{s}$$

$$41) -61101000$$

$$(0 \cdot 2^7) + (1 \cdot 2^6) + (1 \cdot 2^5) + (1 \cdot 2^4) + (0 \cdot 2^3) + (0 \cdot 2^2)$$
$$= 104 \rightarrow h$$

$$42) 151-8 \quad (1 \cdot 8^2) + (5 \cdot 8^1) + (1 \cdot 8^0) \rightarrow \textcircled{e}$$

$$= 105 \rightarrow i$$
$$43) -66-16 \quad (6 \cdot 16^1) + (6 \cdot 16^0) = 102 \rightarrow \textcircled{f}$$

$$44) 116-10 \rightarrow \textcircled{f}$$

$$45) 61110100-2$$

$$(0 \cdot 2^7) + (1 \cdot 2^6) + (1 \cdot 2^5) + (1 \cdot 2^4) + (0 \cdot 2^3) + (0 \cdot 2^2)$$

$$= 116 \rightarrow \textcircled{f}$$

$$46) 164-8 \quad (1 \cdot 8^2) + (6 \cdot 8^1) + (4 \cdot 8^0) = 116 \rightarrow \textcircled{f}$$

decypted:

<https://tinyurl.com/SunneNaBa->

Pwede~~pa~~MagShifttt

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