

프로그래밍 나두 할 수 있다!  
**I CAN DO PROGRAMMING**

...

네번째 모임  
~Fourth Meeting~

# 네번째 모임 주제

- 워밍업 문제
  - Precedence
  - Third meeting recap
- String and array
  - Strlen
  - Sizeof
- ASCII 코드를 활용해 소문자 대문자 바꿔봅시다
- Argc/ argv
- Cryptography
- Pointer
  - \*
  - &

Operator	Description	Associativity
() [] . -> ++ --	Parentheses or function call Brackets or array subscript Dot or Member selection operator Arrow operator Postfix increment/decrement	left to right
++ -- + - ! ~ (type) * & sizeof	Prefix increment/decrement Unary plus and minus not operator and bitwise complement type cast Indirection or dereference operator Address of operator Determine size in bytes	right to left
* / %	Multiplication, division and modulus	left to right
+ -	Addition and subtraction	left to right
<< >>	Bitwise left shift and right shift	left to right
< <= > >=	relational less than/less than equal to relational greater than/greater than or equal to	left to right
== !=	Relational equal to or not equal to	left to right
&&	Bitwise AND	left to right
^	Bitwise exclusive OR	left to right
	Bitwise inclusive OR	left to right
&&	Logical AND	left to right
	Logical OR	left to right
? :	Ternary operator	right to left
= += -= *= /= %= &= ^=  = <<= >>=	Assignment operator Addition/subtraction assignment Multiplication/division assignment Modulus and bitwise assignment Bitwise exclusive/inclusive OR assignment	right to left
,	comma operator	left to right

```

1 #include <stdio.h>
2
3 int main(void){
4     int x = 12;
5     int y = 5;
6
7     x *= y + 1;
8
9     printf("%d", x);
10 }
```

Q. 결과값이 무엇일까요? 그리고 그 이유는 무엇일까요?

```

1 #include <stdio.h>
2 #include <cs50.h>
3
4 float sum(int length, int arr[]);
5
6 int main(void){
7     const int TOTAL = 3;
8
9     int i = 0;
10    int score[TOTAL];
11    score[i] = get_int("score: ");
12    i++;
13
14    while (score[i] >= 0){
15        score[i] = get_int("score: ");
16        i++;
17    }
18
19
20    printf("%f\n", sum(i, score));
21 }
22
23 float sum(int length, int arr[]){
24     int sum = 0;
25     int i;
26     for(i = 0; i < length; i++){
27         sum += arr[i];
28     }
29     return sum / (float) length;
30 }

```

Q. return type? Void? Function 이름?

```
1 #include <stdio.h>
2
3 int resu;
4
5 void sum(int x, int y){
6     resu = x + y;
7 }
8
9 int main(){
10     int a = 3;
11     int b = 2;
12     sum(a,b);
13     printf("The sum is %d", resu);
14
15 }
16
```

Q1. glabal variable? (글로벌 변수)

Q2. void임에도 불구하고 main function이  
sum function에서 값을 받아올 수 있는  
이유는 뭘까요?

STRING

'H'

s[0]

'I'

s[1]

'!'

s[2]

'\0'

s[3]

‘H’

‘ | ’

‘!’

'\0'



72

s[0]

73

s[1]

33

s[2]

0

s[3]

# 'H'

‘ | ’

‘!’

'\0'

‘B’

‘Y’

‘E’

‘!’

'\0'

'H'

s[0]

'I'

s[1]

'!'

s[2]

'\0'

s[3]

'B'

w[0]

'Y'

w[1]

'E'

w[2]

'!'

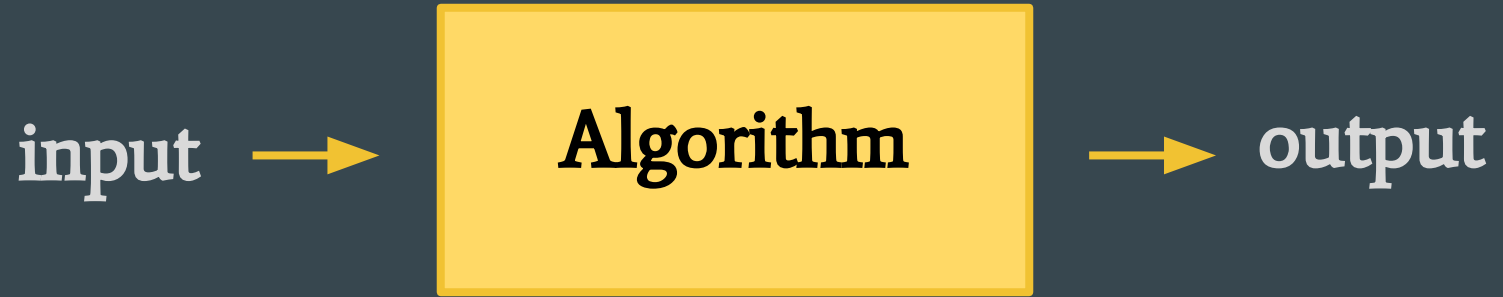
w[3]

'\0'

w[4]

Dec	Hx	Oct	Char	Dec	Hx	Oct	Html	Chr	Dec	Hx	Oct	Html	Chr	Dec	Hx	Oct	Html	Chr
0	0	000	<b>NUL</b> (null)	32	20	040	&#32; <b>Space</b>		64	40	100	&#64; <b>@</b>		96	60	140	&#96; <b>`</b>	
1	1	001	<b>SOH</b> (start of heading)	33	21	041	&#33; <b>!</b>		65	41	101	&#65; <b>A</b>		97	61	141	&#97; <b>a</b>	
2	2	002	<b>STX</b> (start of text)	34	22	042	&#34; <b>"</b>		66	42	102	&#66; <b>B</b>		98	62	142	&#98; <b>b</b>	
3	3	003	<b>ETX</b> (end of text)	35	23	043	&#35; <b>#</b>		67	43	103	&#67; <b>C</b>		99	63	143	&#99; <b>c</b>	
4	4	004	<b>EOT</b> (end of transmission)	36	24	044	&#36; <b>\$</b>		68	44	104	&#68; <b>D</b>		100	64	144	&#100; <b>d</b>	
5	5	005	<b>ENQ</b> (enquiry)	37	25	045	&#37; <b>%</b>		69	45	105	&#69; <b>E</b>		101	65	145	&#101; <b>e</b>	
6	6	006	<b>ACK</b> (acknowledge)	38	26	046	&#38; <b>&amp;</b>		70	46	106	&#70; <b>F</b>		102	66	146	&#102; <b>f</b>	
7	7	007	<b>BEL</b> (bell)	39	27	047	&#39; <b>'</b>		71	47	107	&#71; <b>G</b>		103	67	147	&#103; <b>g</b>	
8	8	010	<b>BS</b> (backspace)	40	28	050	&#40; <b>(</b>		72	48	110	&#72; <b>H</b>		104	68	150	&#104; <b>h</b>	
9	9	011	<b>TAB</b> (horizontal tab)	41	29	051	&#41; <b>)</b>		73	49	111	&#73; <b>I</b>		105	69	151	&#105; <b>i</b>	
10	A	012	<b>LF</b> (NL line feed, new line)	42	2A	052	&#42; <b>*</b>		74	4A	112	&#74; <b>J</b>		106	6A	152	&#106; <b>j</b>	
11	B	013	<b>VT</b> (vertical tab)	43	2B	053	&#43; <b>+</b>		75	4B	113	&#75; <b>K</b>		107	6B	153	&#107; <b>k</b>	
12	C	014	<b>FF</b> (NP form feed, new page)	44	2C	054	&#44; <b>,</b>		76	4C	114	&#76; <b>L</b>		108	6C	154	&#108; <b>l</b>	
13	D	015	<b>CR</b> (carriage return)	45	2D	055	&#45; <b>-</b>		77	4D	115	&#77; <b>M</b>		109	6D	155	&#109; <b>m</b>	
14	E	016	<b>SO</b> (shift out)	46	2E	056	&#46; <b>.</b>		78	4E	116	&#78; <b>N</b>		110	6E	156	&#110; <b>n</b>	
15	F	017	<b>SI</b> (shift in)	47	2F	057	&#47; <b>/</b>		79	4F	117	&#79; <b>O</b>		111	6F	157	&#111; <b>o</b>	
16	10	020	<b>DLE</b> (data link escape)	48	30	060	&#48; <b>0</b>		80	50	120	&#80; <b>P</b>		112	70	160	&#112; <b>p</b>	
17	11	021	<b>DC1</b> (device control 1)	49	31	061	&#49; <b>1</b>		81	51	121	&#81; <b>Q</b>		113	71	161	&#113; <b>q</b>	
18	12	022	<b>DC2</b> (device control 2)	50	32	062	&#50; <b>2</b>		82	52	122	&#82; <b>R</b>		114	72	162	&#114; <b>r</b>	
19	13	023	<b>DC3</b> (device control 3)	51	33	063	&#51; <b>3</b>		83	53	123	&#83; <b>S</b>		115	73	163	&#115; <b>s</b>	
20	14	024	<b>DC4</b> (device control 4)	52	34	064	&#52; <b>4</b>		84	54	124	&#84; <b>T</b>		116	74	164	&#116; <b>t</b>	
21	15	025	<b>NAK</b> (negative acknowledge)	53	35	065	&#53; <b>5</b>		85	55	125	&#85; <b>U</b>		117	75	165	&#117; <b>u</b>	
22	16	026	<b>SYN</b> (synchronous idle)	54	36	066	&#54; <b>6</b>		86	56	126	&#86; <b>V</b>		118	76	166	&#118; <b>v</b>	
23	17	027	<b>ETB</b> (end of trans. block)	55	37	067	&#55; <b>7</b>		87	57	127	&#87; <b>W</b>		119	77	167	&#119; <b>w</b>	
24	18	030	<b>CAN</b> (cancel)	56	38	070	&#56; <b>8</b>		88	58	130	&#88; <b>X</b>		120	78	170	&#120; <b>x</b>	
25	19	031	<b>EM</b> (end of medium)	57	39	071	&#57; <b>9</b>		89	59	131	&#89; <b>Y</b>		121	79	171	&#121; <b>y</b>	
26	1A	032	<b>SUB</b> (substitute)	58	3A	072	&#58; <b>:</b>		90	5A	132	&#90; <b>Z</b>		122	7A	172	&#122; <b>z</b>	
27	1B	033	<b>ESC</b> (escape)	59	3B	073	&#59; <b>;</b>		91	5B	133	&#91; <b>[</b>		123	7B	173	&#123; <b>{</b>	
28	1C	034	<b>FS</b> (file separator)	60	3C	074	&#60; <b>&lt;</b>		92	5C	134	&#92; <b>\</b>		124	7C	174	&#124; <b> </b>	
29	1D	035	<b>GS</b> (group separator)	61	3D	075	&#61; <b>=</b>		93	5D	135	&#93; <b>]</b>		125	7D	175	&#125; <b>}</b>	
30	1E	036	<b>RS</b> (record separator)	62	3E	076	&#62; <b>&gt;</b>		94	5E	136	&#94; <b>^</b>		126	7E	176	&#126; <b>~</b>	
31	1F	037	<b>US</b> (unit separator)	63	3F	077	&#63; <b>?</b>		95	5F	137	&#95; <b>_</b>		127	7F	177	&#127; <b>DEL</b>	

# Cryptography



# Cryptography





$128\sqrt{e980}$



I Love you



Posted at  
[Espangrish.com](http://Espangrish.com)

# Cryptography





I l o v e y o u

73 108 111 118 101 121 111 117

74 108 111 118 101 121 111 117

74 109 111 118 101 121 111 117

74 109 112 118 101 121 111 117

74 109 112 119 101 121 111 117

74 109 112 119 102 121 111 117

74 109 112 119 102 122 111 117



74 109 112 119 102 122 112 117

74 109 112 119 102 122 112 118

J m p w f z p v

# cryptography

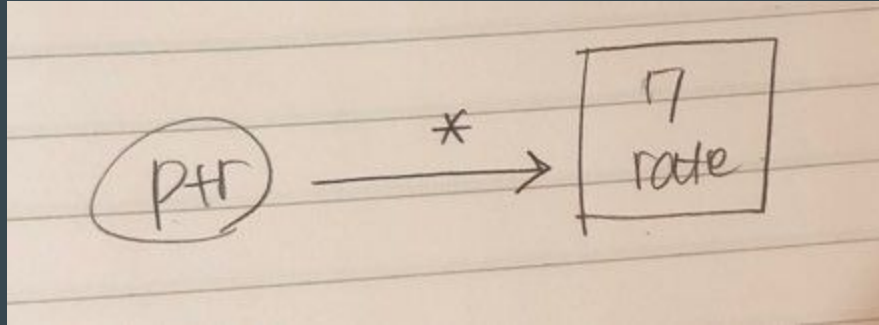
왜 중요할까요?

이메일

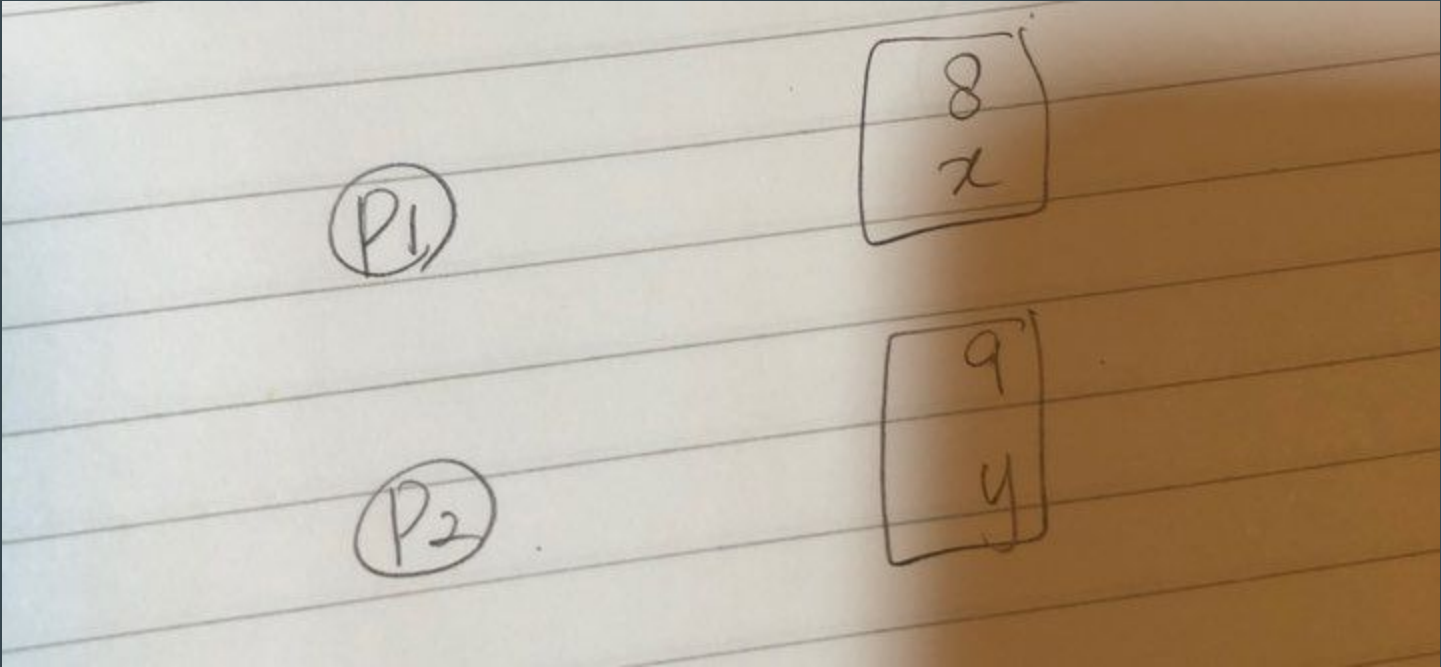
개인정보 보호

중요 작업

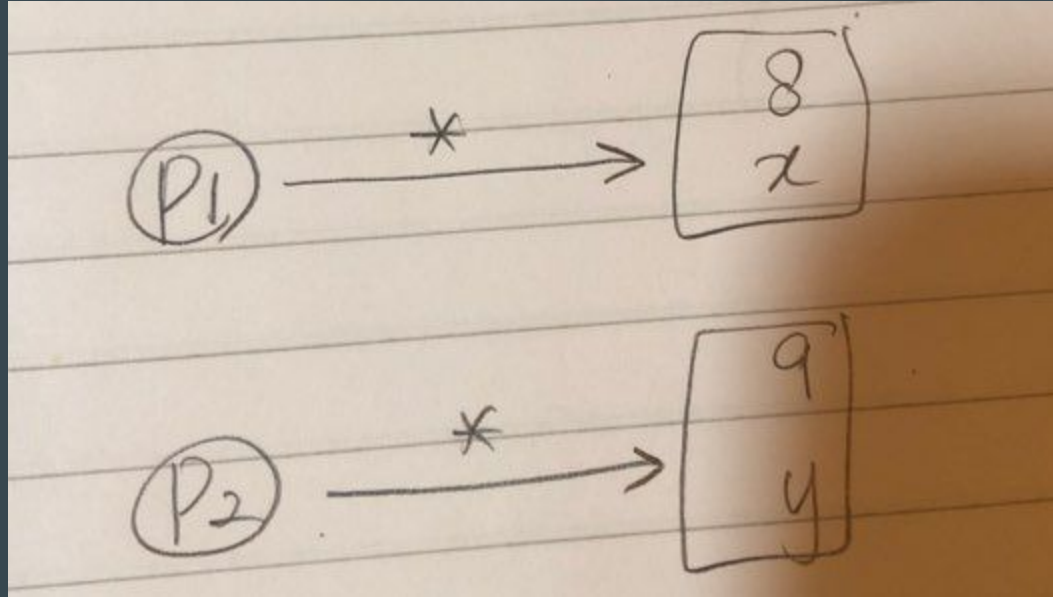
pointer



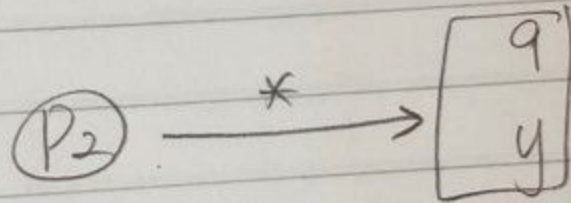
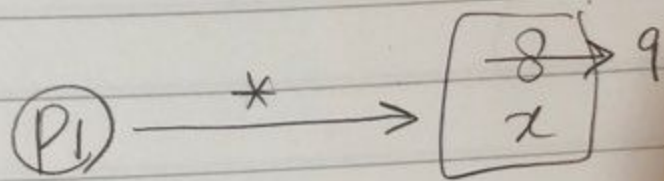
pointer



# pointer



# pointer



$$\underbrace{(*P_1)}_{\text{value}} = \underbrace{(*P_2)}_{\text{value}}$$

$$\parallel \quad x = y$$



# pointer

