Xilinx
Zynq FPGA
TI DSP MCU 기반의
프로그래밍 및 회로 설계 전문가

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```c
#include<stdio.h>

void sum(double *x,double *y,double *res)
{
printf("Vector's sum : ");
int i;
for(i=0;i<3;i++)
{
res[i]=x[i]+y[i];
printf("%lf\n", res[i]);

}

}


void sub(double *x,double *y,double *res)
{
printf("Vector's sub : ");
int i;
for(i=0;i<3;i++)
{
res[i]=x[i]-y[i];
printf("%lf\n", res[i]);
}

}

void inner(double *x,double *y, double res)
{
int i=0;
for(i=0;i<3;i++)
{
res += x[i]*y[i];
}

printf("inner : %lf\n",res);
}

int main()
{
double x[3]={3,5,2};
double y[3]={1,7,5};
double res[3];
double res1;
sum(x,y,res);
sub(x,y,res);
inner(x,y,res1);
 return 0;
}
```

Vector → ③차원

+, −

3d.

A = (Ax, Ay, Az)

B = (Bx, By, Bz)

$$\vec{A}+\vec{B} = (A_x+B_x,\ A_y+B_y,\ A_z+B_z)$$

$$\vec{A}\cdot\vec{B} = A_x\cdot B_x + A_y\cdot B_y + A_z\cdot B_z$$

$$\vec{A}\times\vec{B} = \begin{vmatrix} \hat{i} & \hat{j} & \hat{k} \\ A_x & A_y & A_z \\ B_x & B_y & B_z \end{vmatrix}$$

$(-1)^{i+j}$

$$= +\hat{i}\,(A_y\cdot B_z - B_y\cdot A_z)$$
$$-\hat{j}\,(A_x\cdot B_z - B_x\cdot A_z)$$
$$+\hat{k}\,(A_x\cdot B_y - B_x\cdot A_y)$$

$\vec{A} = (3, 5, 2)$

$\vec{B} = (1, 7, 5)$

$+ \quad - \quad \cdot \quad \times$

3 12 10   3 35 10

②

① $(3+1, 5+7, 2+5) \Rightarrow (4, 12, 7)$

② $(3-1, 5-7, 2-5) \Rightarrow (2, -2, -3)$

$\boxed{\vec{A} - \vec{B}} \quad \vec{B} - \vec{A}$

③ $(3\cdot1) + (5\cdot7) + (2\cdot5) \Rightarrow (3, 35+10) = 48$

✗

$3 \; 5 \; 2$
$1 \; 7 \; 5$

$\Rightarrow$
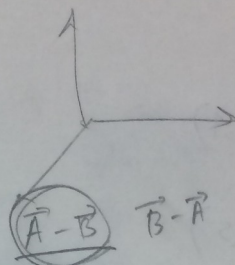
$+\hat{i}\,(5\cdot5) - (7\cdot2) \quad +\hat{i}\,(11)$

$-\hat{j}\,(3\cdot5) - (1\cdot2) \quad = -\hat{j}\,(13)$

$+\hat{k}\,(3\cdot7) - (1\cdot5) \quad +\hat{k}\,(16)$

$\hat{i} + \hat{j} + \hat{k}$

_____
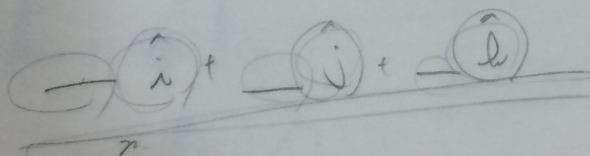
25
-14

$11\hat{i} - 13\hat{j} + 16\hat{k}$

$3 \; 52$
$1 \; 73$

$15-2$

$2\hat{i} + 1\hat{j}$

$(2,1)$

2

$21-5$