SIMD

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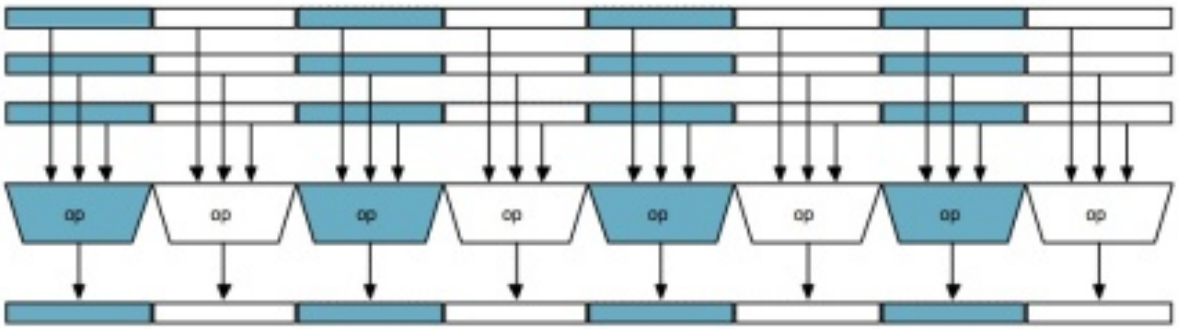
Outline

SIMD

- Single instruction multiple data
- without threads support

VPU

- Vector processing units
- combine itstructions as vector



Outline

Vecotrized for loop

```
void star( double *a, double *b, double *c, int n, int *ioff )
{
    int i;
    #pragma omp simd
    for ( i = 0; i < n; i++ )
       a[i] *= b[i] * c[i+ *ioff];
}
```

Vecotrized function

```
#pragma omp declare simd uniform(fact)
double add1(double a, double b, double fact)
{
    double c;
    c = a + b + fact;
    return c;
}
```

Vecotrized function

```
#pragma omp declare simd uniform(a,b,fact) linear(i:1)
double add2(double *a, double *b, int i, double fact)
{
    double c;
    c = a[i] + b[i] + fact;
    return c;
}
```