

# Computer Programming

## Lab 14

2018.06.08

# Pointer operation

- **\* operator**
  - declare a variable as a pointer
  - access the value by a pointer variable
- **& operator**
  - Address of that variable
- **-> operator**
  - Members of structures

# Pointer example

```
int alpha = 5;
```

```
int beta = 20;
```

```
int* alphaPtr = &alpha;
```

```
int* betaPtr = &beta;
```

```
*alphaPtr += 5;
```

```
*betaPtr += 5;
```

```
alpha += 5;
```

```
beta += 5;
```

# Pointer usage

```
int a = 5;
```

```
int b = 9;
```

```
swap(a,b);
```

```
void swap(int x, int y){
```

```
int temp;
```

```
temp = x;
```

```
x = y;
```

```
y = temp;
```

```
return; }
```

Result a : 5 b : 9

# Pointer usage

```
int a = 5;
```

```
int b = 9;
```

```
swap(&a,&b);
```

```
void swap (int* x, int* y) {
```

```
    int temp;
```

```
    temp = *x;
```

```
    *x = *y;
```

```
    *y = temp;
```

```
    return; }
```

Result a : 9 b : 5

# Vector

You should include `#include<vector>`

```
vector<int> A(10); //10 ints
```

```
vector<int> A(n); // n ints
```

# Task

Write a program gets array size and elements using dynamic object array. And calculate sum of their digits. Example

how many elements are there? 3

enter element : 10

enter element : 7

enter element : 4

result : 12