

CSE-4301  
Object Oriented Programming  
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**Week-11**

**Templates**

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# Templates

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- ▶ Generic Function
- ▶ Generic Class

# Function

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- ▶ A function is designed based on the return type and data type of the parameter.
- ▶ For different data type we might need to overload function though the general steps are same.

▶ Example:

```
int abs(int n){ //abs val for ints
    return (n<0)? -n :n; //if n neg, return -n
}
```

```
long abs(long n){
    return (n<0)? -n :n; //if n neg, return -n
}
```

```
float abs(float n){
    return (n<0)? -n :n; //if n neg, return -n
}
```

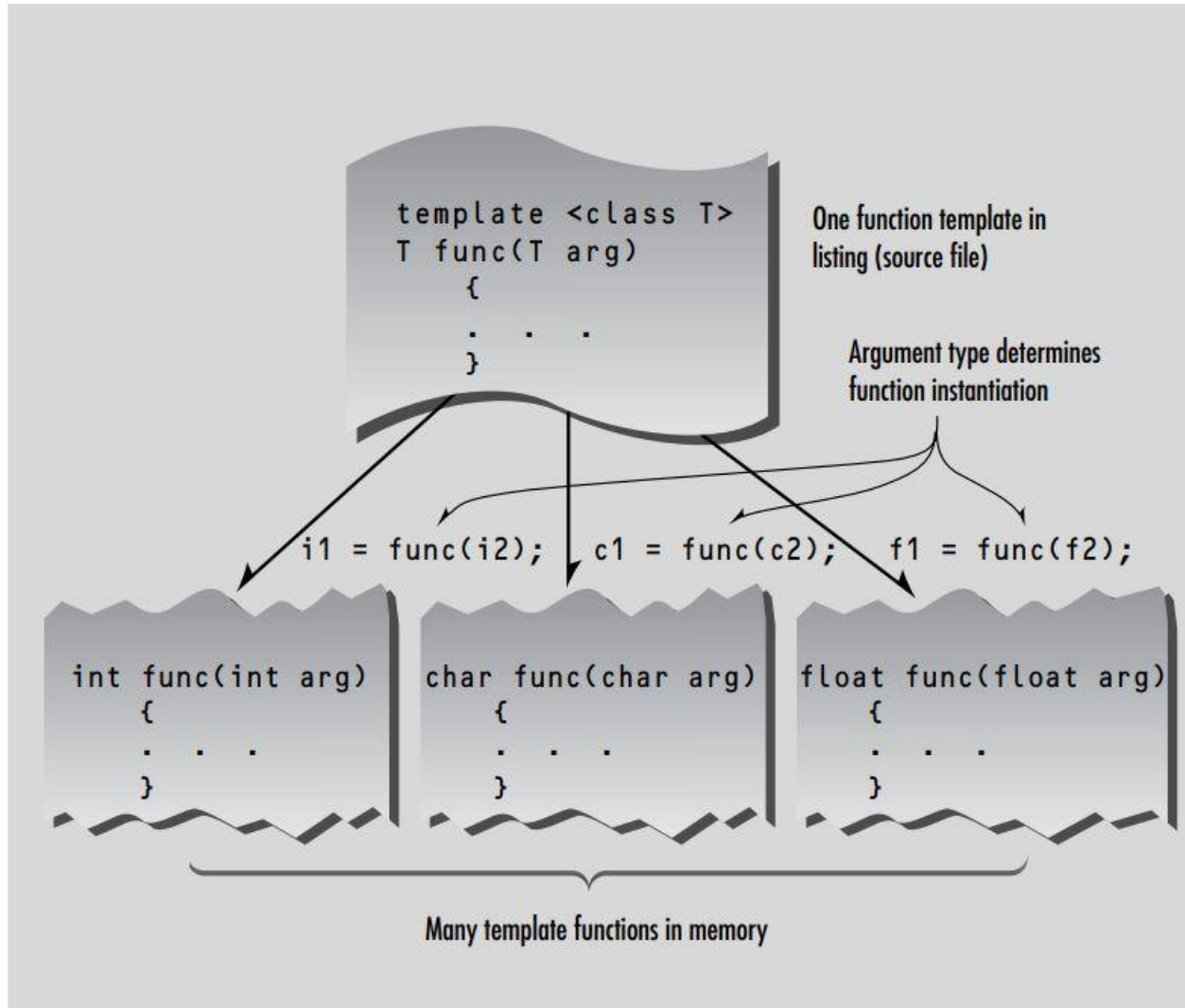
# Generic Function / Function Template

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- ▶ Using Template you can write the function once and have it work for many different data types.
- ▶ If you need to correct some part of the function you can do that in one place.
- ▶ **template <class T> void f1 (T a, T b);**
  - ▶ Example:

```
Template <class T>
T abs(T n){
    return (n<0)? -n :n; //if n neg, return -n
}
```

# Function Template



# Generic Class

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```
▶ template <class X> class myClass{  
    X data;  
    Public:  
    Myclass(X d);  
▶ };
```