

Wednesday, April 7th, 2021

Today:

- template functions & classes
- review ex11-1
- ex11-2 (note: you may use int-set implementation from reference solution in "ex11-1-sol" directory)

Recap Qs

e.g. Name  
||  
1) 

```
template <typename E>
E min(const E & left,
      const E & right) {
    if (left < right) {
        return left;
    } else {
        return right;
    }
}
```

slido.com  
jhui01

zero

HW6 - due tomorrow

(Thurs 4/8) by 11 pm  
- written homework, no late days

HW7 - soon

"generics"

"parametric polymorphism"

STL

"template instantiation"

2) need to work with variety<sup>of</sup> data types

3) compiler does this:

- find data type(s) being used for each. type param  
⇒ inferred from arguments

e.g.

```
int a, b;
```

```
:
```

```
int c;
```

```
c = min(a, b);
```

from prev. page

E = int

- try to compile implementation  
using substitutions

4, 5)

implementation of template functions (incl. member functions of template classes) can't be separately compiled

(5) never in .cpp file

(4) Workaround: ".inc" file

MyTemplateClass.h

```
template <typename E>
class MyTemplateClass {
    :
};
```

```
#include "MyTemplateClass.inc"
```

Option 1  
define functions  
inline

Option 2  
separate .inc  
file #included  
from header file

Breakout

1-5

classic

6-20

DIY