std::array

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1. std::array is just class with some member-funcs over C-array

2. Created as

```
EMPTY    - std::array<int,3> first{}
ELEMENTS - std::array<int,3> second = {10,20};
COPY     - std::array<int,3> fourth = third;
// the iterator constructor can also be used to construct from arrays:
int myints[] = {16,2,77,29};
```

3. std::array

- std::array<type, size> arrayname {elements,..}
  C++17 -> std::array arrayname {elements,….}
- Always pass std::array by reference or const reference
- Use templates to pass std::array or use the array type directly

```
void func(std::array<int,5>& arr)

template<typename T, int size>
void func(std::array<T,size>& arr)
```

- Use size_t for loop counter or use for-each loop
- std::array is an aggregate type that contains a C array i.e. like a class containing c-array. To initialize it, you need outer braces for the class itself and inner braces for the C array

```
std::array<std::array<int, 3>, 2> a2 { { { {1, 2, 3} }, { { 4, 5,
6} } } };
//                                    ^ ^ ^ ^            ^ ^
//                                    | | | |            | |
//                                    | +-|-+------------|-+
//                                    +-|-+-|------------+---- C++
class braces
//                                      |   |
//                                      +---+--- member C array braces
```

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4. Size and capacity

- Size - number of elements currently used
- Empty?

MAX_SIZE - ???

5. Array size related

- fill(value) - all elements with value

6. Iterators – const, non-const random-access and reverse iterator

I

7. Members – front, back, begin, end, rbegin, rend, c(r)begin, c(r)end, [], at,

8. Operators - [] and =
   I
9. std::get<n>(array) returns nth element of the array
   I
10. array.data() returns pointer to first element
11.
    I
12. F
    I
13. F
14. F
    I
15. F
    I
16. F
    I
17. F
    I
18. F
    I
19. F
    I
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26. F
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27. F
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