
Subject: Re: How to mark `std::array<T, N>` moveable if only T is moveable

Posted by [mirek](#) on Mon, 29 Jul 2024 06:47:50 GMT

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mirek wrote on Thu, 25 July 2024 09:32mirek wrote on Thu, 25 July 2024 09:19

Another thing to consider: Tuple is moveable if all its components are moveable. Are we able to express that somehow? (If not, no big deal, I can make Tuple moveable and request that elements are).

Figured it out:

```
struct not_moveable {};
```

```
template <class A, class B>
```

```
class Two : std::conditional<is_moveable<A> && is_moveable<B>, moveable<Two<A, B>>,
```

```
not_moveable>::type {
```

```
    A a;
```

```
    B b;
```

```
};
```

Nicer and simpler way:

```
template <class A, class B> inline constexpr bool is_moveable<Two<A, B>> = is_moveable<A>
&& is_moveable<B>;
```

I am about ready to try to introduce this into U++, but I am actually out of ideas how to name things....

Moveable / `is_moveable` is not perfect (future c++ might name this `trivially_relocatable`, but that is too long IMO), but u++ traditional, I guess I can live that.

However, new system should introduce a trait that says "I know I cannot memmove this type, but I still would like to store it into Vector anyway". E.g. to have `Index<std::string> ...` Really not sure what id should I use for that... Something like `"is_vector_compatible_but_slower"`, or `"std_moveable"` or something?

(alternative would be to have "mem moveable" as option, but I want to force developer to be explicit, not to forget to mark moveable types)

Mirek
