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[Aliasing trait with associated types \[duplicate\]](#)

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This question already has answers here:

[Is there any way to create a type alias for multiple traits?](#) (3 answers)

Closed 8 years ago.

Is it possible to create a trait alias with specified associated types? I'm using a method from similar question [Type alias for multiple traits](#)

```
trait Trait {  
    type Item;  
}  
  
fn print<T>(value: T) where T: Trait<Item=char> {  
}  
  
trait Alias: Trait {}  
impl<T: Trait<Item=char>> Alias for T {}  
  
fn print_alias<T: Alias>(value: T) {  
    print(value)  
}  
  
fn main() {  
}
```

However it fails to compile with following error:

```
<anon>:12:5: 12:10 error: type mismatch resolving `<T as Trait>::Item == char`:  
expected associated type,  
    found char [E0271]  
<anon>:12      print(value)  
                 ^~~~~  
<anon>:12:5: 12:10 note: required by `print`  
<anon>:12      print(value)  
                 ^~~~~  
error: aborting due to previous error
```

Playpen link: <http://is.gd/LE4h6a>

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3 Answers

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@Shepmaster's solution solves the problem locally; but you would have to specify the `where T: Alias<Item=char>` each time. Alternatively, you can solve it globally by requiring that all `Alias` implements `Trait<Item=char>`:

```
trait Alias: Trait<Item=char> {}  
impl<T: Trait<Item=char>> Alias for T {}
```

Which of the global or local solutions is preferred is totally up to you.

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answered May 24, 2015 at 13:45

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Mike Krasnenkov

[Mike Krasnenkov](#) Over a year ago

Thanks for help. I got it now: `Trait<Item=char>` in `impl` means every `Trait<Item=char>` is `Alias`, but to make every `Alias Trait<Item=char>`, I need same constraint in trait declaration.

2015-05-24T13:53:59.763Z+00:00

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You still need to specify the associated type in your `print_alias` method:

```
fn print_alias<T>(value: T)
    where T: Alias<Item=char>
{
    print(value)
}
```

The problem is that you've specified that every `Trait<Item=char>` also implements `Alias` (and thus `Alias<Item=char>`), but that doesn't mean that every `Alias` implements `Trait<Item=char>`!

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answered May 24, 2015 at 13:40

[Shepmaster](#)

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Mike Krasnenkov

[Mike Krasnenkov](#) Over a year ago

Thanks for pointing out, got it working by specifying type in trait declaration: `trait Alias: Trait<Item=char> {}`

2015-05-24T13:45:20.063Z+00:00

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You have currently only required that all values of `Alias` must implement `Trait`, but not that the type of `Item` must be `char`. To do that you have to use the following:

```
trait Alias: Trait<Item=char> {}
```

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answered May 24, 2015 at 13:44

[Snorre](#)

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Mike Krasnenkov

[Mike Krasnenkov](#) Over a year ago

Thank you for help. I was able to understand the idea behind this after @Shepmaster explained the concept to me.

2015-05-24T13:50:54.43Z+00:00

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