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Return list from async/await method

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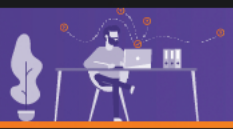
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I want to make a webservice request asynchron. I call it here:

```
List<Item> list = GetListAsync();
```

Here is the declaration of my function, which should return a list:

```
private async Task<List<Item>> GetListAsync(){
    List<Item> list = await Task.Run(() => manager.GetList());
    return list;
}
```

If I want to compile I get the following error

```
Cannot implicitely convert type System.Threading.Tasks.Task<System.Collections.Generic.List<I
```

As I know If I use the `async` modifier the result is automatically wrapped with Task. I think this doesn't happen because I use `Task.Run`. If I remove the `Task.Run(() =>` part I get

> Cannot await System.Collections.Generic.List expression

I think I haven't fully understood the async/await methods. What I'm doing wrong?

c# list asynchronous async-await task

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asked Sep 8 '14 at 9:23

testing
15.9k ● 31 ● 178 ● 335

possible duplicate of Cannot implicitly convert type from Task<> – i3arnon Sep 8 '14 at 20:21

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4 Answers

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You need to correct your code to wait for the list to be downloaded:

```
List<Item> list = await GetListAsync();
```

Also, make sure that the method, where this code is located, has `async` modifier.

The reason why you get this error is that `GetListAsync` method returns a `Task<T>` which is not a

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completed result. As your list is downloaded asynchronously (because of `Task.Run()`) you need to "extract" the value from the task using the `await` keyword.

If you remove `Task.Run()`, you list will be downloaded synchronously and you don't need to use `Task`, `async` or `await`.

One more suggestion: you don't need to await in `GetListAsync` method if the only thing you do is just delegating the operation to a different thread, so you can shorten your code to the following:

```
private Task<List<Item>> GetListAsync(){
    return Task.Run(() => manager.GetList());
}
```

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edited Sep 8 '14 at 9:56

answered Sep 8 '14 at 9:24
takemyoxygen
3,411 ● 17 ● 19

They will also need to ensure that the method calling this code is made an `async` method (if they haven't already). – Daniel Kelley Sep 8 '14 at 9:26

What I don't get is why do I have to `await` two times? – testing Sep 8 '14 at 9:27

@testing, you have to await twice because you have 2 async calls – Ben Robinson Sep 8 '14 at 9:28

@BenRobinson: Do I have two async calls or only one (and the second is for "extracting")? – testing Sep 8 '14 at 9:33

1 @testing You have 2, you are awaiting the task in you `GetListAsync` method, then you are awaiting the method itself in your calling code – Ben Robinson Sep 8 '14 at 9:35

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In addition to @takemyoxygen's answer the convention of having a function name that ends in `Async` is that this function is truly asynchronous. I.e. it does not start a new thread and it doesn't simply call `Task.Run`. If that is all the code that is in your function, it will be better to remove it completely and simply have:

```
List<Item> list = await Task.Run(() => manager.GetList());
```

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answered Sep 8 '14 at 11:30
Ned Stoyanov
11.4k ● 4 ● 26 ● 53

I also have a try/catch block to catch the exceptions and I'm showing a spinner. So my method name is correct than? – testing Sep 8 '14 at 11:45

yes i think it should be OK, starting a new thread is not ideal but i think the guideline is more about calling a synchronous version of the function inside `Task.Run` – Ned Stoyanov Sep 9 '14 at 9:35

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Works for me:

```
List<Item> list = Task.Run(() => manager.GetList()).Result;
```

in this way it is not necessary to mark the method with async in the call.

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answered Jun 25 at 23:59
sergiokml
31 ● 3

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Instead of doing all these, one can simply use ".Result" to get the result from a particular task.

eg: List list = GetListAsync().Result;

Which as per the definition => Gets the result value of this Task < TResult >

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answered Jul 31 at 10:56

avinava basu

67 • 2

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