Large Technical Document for RAG Testing

Section 1: Overview

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Code Snippet 1:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 2: Overview

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Code Snippet 2:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 3: Overview

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Code Snippet 3:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)
```

```
    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 4: Overview

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Code Snippet 4:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 5: Overview

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```
Code Snippet 5:

import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 6: Overview

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Code Snippet 6:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 7: Overview

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Code Snippet 7:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 8: Overview

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Code Snippet 8:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)
```

```
    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 9: Overview

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Code Snippet 9:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 10: Overview

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```
Code Snippet 10:

import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 11: Overview

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```
Code Snippet 11:

import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 12: Overview

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```
Code Snippet 12:
```

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 13: Overview

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Code Snippet 13:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)
```

```
    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 14: Overview

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Code Snippet 14:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 15: Overview

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```
Code Snippet 15:

import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 16: Overview

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```
Code Snippet 16:

import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 17: Overview

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```
Code Snippet 17:
```

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 18: Overview

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Code Snippet 18:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)
```

```
    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 19: Overview

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Code Snippet 19:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 20: Overview

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```
Code Snippet 20:

import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

Metadata for Section 20:

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Section 21: Overview

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Code Snippet 21:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Status: Final

Section 22: Overview

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Code Snippet 22:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Reviewer: AI System
Status: Final

Section 23: Overview

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Code Snippet 23:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)
```

```
    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Reviewer: AI System
Status: Final

Section 24: Overview

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Code Snippet 24:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 25: Overview

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```
Code Snippet 25:

import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

Metadata for Section 25:

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Reviewer: AI System
Status: Final

Section 26: Overview

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Code Snippet 26:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

Metadata for Section 26:

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Status: Final

Section 27: Overview

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Code Snippet 27:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Status: Final

Section 28: Overview

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Code Snippet 28:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)
```

```
    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

Metadata for Section 28:

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Status: Final

Section 29: Overview

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Code Snippet 29:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 30: Overview

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```
Code Snippet 30:

import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 31: Overview

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Code Snippet 31:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 32: Overview

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Code Snippet 32:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Status: Final

Section 33: Overview

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Code Snippet 33:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)
```

```
    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

Metadata for Section 33:

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Reviewer: AI System
Status: Final

Section 34: Overview

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Code Snippet 34:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 35: Overview

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```
Code Snippet 35:

import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

Metadata for Section 35:

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Section 36: Overview

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Code Snippet 36:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 37: Overview

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Code Snippet 37:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

Metadata for Section 37:

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Reviewer: AI System
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Section 38: Overview

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Code Snippet 38:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)
```

```
    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

Metadata for Section 38:

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Reviewer: AI System
Status: Final

Section 39: Overview

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Code Snippet 39:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Reviewer: AI System
Status: Final

Section 40: Overview

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```
Code Snippet 40:

import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Reviewer: AI System
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Section 41: Overview

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```
Code Snippet 41:

import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Reviewer: AI System
Status: Final

Section 42: Overview

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```
Code Snippet 42:
```

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Status: Final

Section 43: Overview

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Code Snippet 43:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)
```

```
    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

Metadata for Section 43:

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Reviewer: AI System
Status: Final

Section 44: Overview

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Code Snippet 44:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

Metadata for Section 44:

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Reviewer: AI System
Status: Final

Section 45: Overview

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```
Code Snippet 45:

import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

Metadata for Section 45:

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Section 46: Overview

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```
Code Snippet 46:

import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

Metadata for Section 46:

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Section 47: Overview

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```
Code Snippet 47:
```

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

Metadata for Section 47:

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Section 48: Overview

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Code Snippet 48:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)
```

```
    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

Metadata for Section 48:

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Status: Final

Section 49: Overview

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Code Snippet 49:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

Metadata for Section 49:

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Status: Final

Section 50: Overview

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```
Code Snippet 50:

import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 51: Overview

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```
Code Snippet 51:

import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

Metadata for Section 51:

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Status: Final

Section 52: Overview

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```
Code Snippet 52:
```

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

Metadata for Section 52:

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Reviewer: AI System
Status: Final

Section 53: Overview

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Code Snippet 53:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)
```

```
    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

Metadata for Section 53:

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Status: Final

Section 54: Overview

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Code Snippet 54:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

Metadata for Section 54:

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Status: Final

Section 55: Overview

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```
Code Snippet 55:

import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

Metadata for Section 55:

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Reviewer: AI System
Status: Final

Section 56: Overview

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Code Snippet 56:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

Metadata for Section 56:

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Author: RAG Test Suite
Reviewer: AI System
Status: Final

Section 57: Overview

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Code Snippet 57:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

Metadata for Section 57:

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Reviewer: AI System
Status: Final

Section 58: Overview

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Code Snippet 58:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)
```

```
    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

Metadata for Section 58:

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Reviewer: AI System
Status: Final

Section 59: Overview

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Code Snippet 59:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

Metadata for Section 59:

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Author: RAG Test Suite
Reviewer: AI System
Status: Final

Section 60: Overview

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```
Code Snippet 60:

import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

Metadata for Section 60:

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Reviewer: AI System
Status: Final

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Section 61: Overview

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```
Code Snippet 61:

import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

Metadata for Section 61:

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Reviewer: AI System
Status: Final

Section 62: Overview

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```
Code Snippet 62:
```

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

Metadata for Section 62:

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Reviewer: AI System
Status: Final

Section 63: Overview

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Code Snippet 63:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)
```

```
    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Status: Final

Section 64: Overview

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Code Snippet 64:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 65: Overview

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```
Code Snippet 65:

import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 66: Overview

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Code Snippet 66:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 67: Overview

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Code Snippet 67:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 68: Overview

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Code Snippet 68:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)
```

```
    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

Metadata for Section 68:

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Section 69: Overview

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Code Snippet 69:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 70: Overview

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```
Code Snippet 70:

import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 71: Overview

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Code Snippet 71:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 72: Overview

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Code Snippet 72:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 73: Overview

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Code Snippet 73:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)
```

```
    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 74: Overview

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Code Snippet 74:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 75: Overview

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```
Code Snippet 75:

import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 76: Overview

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```
Code Snippet 76:

import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 77: Overview

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```
Code Snippet 77:
```

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 78: Overview

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Code Snippet 78:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)
```

```
    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 79: Overview

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Code Snippet 79:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 80: Overview

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```
Code Snippet 80:

import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 81: Overview

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```
Code Snippet 81:

import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 82: Overview

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```
Code Snippet 82:
```

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 83: Overview

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Code Snippet 83:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)
```

```
    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 84: Overview

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Code Snippet 84:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 85: Overview

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```
Code Snippet 85:

import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 86: Overview

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Code Snippet 86:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 87: Overview

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Code Snippet 87:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 88: Overview

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Code Snippet 88:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)
```

```
    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 89: Overview

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Code Snippet 89:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 90: Overview

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```
Code Snippet 90:

import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 91: Overview

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```
Code Snippet 91:

import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 92: Overview

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```
Code Snippet 92:
```

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 93: Overview

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Code Snippet 93:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)
```

```
    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 94: Overview

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Code Snippet 94:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 95: Overview

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```
Code Snippet 95:

import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 96: Overview

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Code Snippet 96:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 97: Overview

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Code Snippet 97:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 98: Overview

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Code Snippet 98:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)
```

```
    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 99: Overview

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Code Snippet 99:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 100: Overview

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```
Code Snippet 100:

import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

Metadata for Section 100:

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Section 101: Overview

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Code Snippet 101:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

Metadata for Section 101:

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Section 102: Overview

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Code Snippet 102:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

Metadata for Section 102:

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Section 103: Overview

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Code Snippet 103:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)
```

```
    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

Metadata for Section 103:

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Section 104: Overview

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Code Snippet 104:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

Metadata for Section 104:

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Section 105: Overview

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```
Code Snippet 105:

import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 106: Overview

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```
Code Snippet 106:

import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 107: Overview

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```
Code Snippet 107:
```

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 108: Overview

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Code Snippet 108:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)
```

```
    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 109: Overview

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Code Snippet 109:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 110: Overview

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```
Code Snippet 110:

import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 111: Overview

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Code Snippet 111:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

Metadata for Section 111:

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Status: Final

Section 112: Overview

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Code Snippet 112:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

Metadata for Section 112:

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Status: Final

Section 113: Overview

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Code Snippet 113:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)
```

```
    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 114: Overview

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Code Snippet 114:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 115: Overview

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```
Code Snippet 115:

import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

Metadata for Section 115:

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Section 116: Overview

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Code Snippet 116:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

Metadata for Section 116:

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Section 117: Overview

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Code Snippet 117:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

Metadata for Section 117:

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Section 118: Overview

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Code Snippet 118:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)
```

```
    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 119: Overview

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Code Snippet 119:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

Metadata for Section 119:

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Section 120: Overview

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```
Code Snippet 120:

import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

Metadata for Section 120:

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Section 121: Overview

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Code Snippet 121:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

Metadata for Section 121:

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Status: Final

Section 122: Overview

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Code Snippet 122:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

Metadata for Section 122:

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Status: Final

Section 123: Overview

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Code Snippet 123:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)
```

```
    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

Metadata for Section 123:

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Reviewer: AI System
Status: Final

Section 124: Overview

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Code Snippet 124:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

Metadata for Section 124:

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Reviewer: AI System
Status: Final

Section 125: Overview

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```
Code Snippet 125:

import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

Metadata for Section 125:

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Reviewer: AI System
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Section 126: Overview

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Code Snippet 126:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

Metadata for Section 126:

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Status: Final

Section 127: Overview

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Code Snippet 127:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 128: Overview

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Code Snippet 128:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)
```

```
    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 129: Overview

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Code Snippet 129:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 130: Overview

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```
Code Snippet 130:

import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 131: Overview

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```
Code Snippet 131:

import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 132: Overview

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```
Code Snippet 132:
```

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 133: Overview

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Code Snippet 133:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)
```

```
    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 134: Overview

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Code Snippet 134:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 135: Overview

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```
Code Snippet 135:

import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 136: Overview

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Code Snippet 136:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 137: Overview

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Code Snippet 137:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 138: Overview

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Code Snippet 138:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)
```

```
    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 139: Overview

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Code Snippet 139:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 140: Overview

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```
Code Snippet 140:

import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

Metadata for Section 140:

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Section 141: Overview

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Code Snippet 141:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 142: Overview

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Code Snippet 142:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

Metadata for Section 142:

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Section 143: Overview

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Code Snippet 143:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)
```

```
    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

Metadata for Section 143:

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Section 144: Overview

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Code Snippet 144:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

Metadata for Section 144:

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Section 145: Overview

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```
Code Snippet 145:

import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

Metadata for Section 145:

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Section 146: Overview

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Code Snippet 146:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

Metadata for Section 146:

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Section 147: Overview

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Code Snippet 147:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 148: Overview

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Code Snippet 148:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)
```

```
    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 149: Overview

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Code Snippet 149:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 150: Overview

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```
Code Snippet 150:

import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 151: Overview

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Code Snippet 151:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 152: Overview

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Code Snippet 152:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 153: Overview

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Code Snippet 153:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)
```

```
    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 154: Overview

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Code Snippet 154:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 155: Overview

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```
Code Snippet 155:

import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 156: Overview

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Code Snippet 156:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 157: Overview

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Code Snippet 157:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 158: Overview

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Code Snippet 158:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)
```

```
    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 159: Overview

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Code Snippet 159:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 160: Overview

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```
Code Snippet 160:

import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 161: Overview

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Code Snippet 161:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 162: Overview

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Code Snippet 162:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 163: Overview

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Code Snippet 163:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)
```

```
    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 164: Overview

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Code Snippet 164:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 165: Overview

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```
Code Snippet 165:

import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 166: Overview

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Code Snippet 166:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

Metadata for Section 166:

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Section 167: Overview

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Code Snippet 167:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 168: Overview

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Code Snippet 168:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)
```

```
    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Status: Final

Section 169: Overview

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Code Snippet 169:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 170: Overview

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```
Code Snippet 170:

import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 171: Overview

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Code Snippet 171:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 172: Overview

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Code Snippet 172:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 173: Overview

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Code Snippet 173:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)
```

```
    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 174: Overview

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Code Snippet 174:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 175: Overview

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```
Code Snippet 175:

import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 176: Overview

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Code Snippet 176:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 177: Overview

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Code Snippet 177:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 178: Overview

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Code Snippet 178:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)
```

```
    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 179: Overview

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Code Snippet 179:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 180: Overview

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```
Code Snippet 180:

import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 181: Overview

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```
Code Snippet 181:

import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 182: Overview

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```
Code Snippet 182:
```

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

Metadata for Section 182:

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Section 183: Overview

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Code Snippet 183:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)
```

```
    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 184: Overview

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Code Snippet 184:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 185: Overview

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```
Code Snippet 185:

import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

Metadata for Section 185:

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Section 186: Overview

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Code Snippet 186:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

Metadata for Section 186:

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Status: Final

Section 187: Overview

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Code Snippet 187:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

Metadata for Section 187:

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Section 188: Overview

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Code Snippet 188:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)
```

```
    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 189: Overview

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Code Snippet 189:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Status: Final

Section 190: Overview

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```
Code Snippet 190:

import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Reviewer: AI System
Status: Final

Section 191: Overview

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Code Snippet 191:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 192: Overview

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Code Snippet 192:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Reviewer: AI System
Status: Final

Section 193: Overview

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Code Snippet 193:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)
```

```
    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Reviewer: AI System
Status: Final

Section 194: Overview

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Code Snippet 194:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Status: Final

Section 195: Overview

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```
Code Snippet 195:

import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Status: Final

Section 196: Overview

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Code Snippet 196:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

Metadata for Section 196:

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Status: Final

Section 197: Overview

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Code Snippet 197:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 198: Overview

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Code Snippet 198:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)
```

```
    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 199: Overview

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Code Snippet 199:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 200: Overview

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```
Code Snippet 200:

import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Reviewer: AI System
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Section 201: Overview

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Code Snippet 201:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

Metadata for Section 201:

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Reviewer: AI System
Status: Final

Section 202: Overview

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Code Snippet 202:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Status: Final

Section 203: Overview

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Code Snippet 203:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)
```

```
    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

Metadata for Section 203:

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Status: Final

Section 204: Overview

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Code Snippet 204:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

Metadata for Section 204:

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Section 205: Overview

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```
Code Snippet 205:

import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

Metadata for Section 205:

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Reviewer: AI System
Status: Final

Section 206: Overview

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Code Snippet 206:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

Metadata for Section 206:

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Author: RAG Test Suite
Reviewer: AI System
Status: Final

Section 207: Overview

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Code Snippet 207:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

Metadata for Section 207:

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Creation Date: 2025-07-28
Author: RAG Test Suite
Reviewer: AI System
Status: Final

Section 208: Overview

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Code Snippet 208:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)
```

```
    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

Metadata for Section 208:

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Author: RAG Test Suite
Reviewer: AI System
Status: Final

Section 209: Overview

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Code Snippet 209:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

Metadata for Section 209:

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Reviewer: AI System
Status: Final

Section 210: Overview

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```
Code Snippet 210:

import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

Metadata for Section 210:

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Section 211: Overview

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Code Snippet 211:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 212: Overview

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Code Snippet 212:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 213: Overview

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Code Snippet 213:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)
```

```
    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Status: Final

Section 214: Overview

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Code Snippet 214:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 215: Overview

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```
Code Snippet 215:

import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 216: Overview

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Code Snippet 216:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 217: Overview

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Code Snippet 217:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 218: Overview

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Code Snippet 218:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)
```

```
    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 219: Overview

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Code Snippet 219:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 220: Overview

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```
Code Snippet 220:

import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Status: Final

Section 221: Overview

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Code Snippet 221:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 222: Overview

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Code Snippet 222:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

Metadata for Section 222:

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Section 223: Overview

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Code Snippet 223:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)
```

```
    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Reviewer: AI System
Status: Final

Section 224: Overview

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Code Snippet 224:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

Metadata for Section 224:

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Author: RAG Test Suite
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Status: Final

Section 225: Overview

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```
Code Snippet 225:

import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Status: Final

Section 226: Overview

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Code Snippet 226:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

Metadata for Section 226:

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Reviewer: AI System
Status: Final

Section 227: Overview

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Code Snippet 227:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

Metadata for Section 227:

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Reviewer: AI System
Status: Final

Section 228: Overview

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Code Snippet 228:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)
```

```
    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

Metadata for Section 228:

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Reviewer: AI System
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Section 229: Overview

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Code Snippet 229:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

Metadata for Section 229:

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Reviewer: AI System
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Section 230: Overview

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```
Code Snippet 230:

import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Reviewer: AI System
Status: Final

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Section 231: Overview

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Code Snippet 231:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

Metadata for Section 231:

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Status: Final

Section 232: Overview

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Code Snippet 232:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 233: Overview

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Code Snippet 233:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)
```

```
    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 234: Overview

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Code Snippet 234:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 235: Overview

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```
Code Snippet 235:

import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 236: Overview

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Code Snippet 236:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 237: Overview

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Code Snippet 237:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 238: Overview

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Code Snippet 238:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)
```

```
    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

Metadata for Section 238:

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Section 239: Overview

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Code Snippet 239:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 240: Overview

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```
Code Snippet 240:

import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

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Section 241: Overview

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Code Snippet 241:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

Metadata for Section 241:

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Section 242: Overview

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Code Snippet 242:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

Metadata for Section 242:

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Status: Final

Section 243: Overview

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Code Snippet 243:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)
```

```
    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

Metadata for Section 243:

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Author: RAG Test Suite
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Status: Final

Section 244: Overview

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Code Snippet 244:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

Metadata for Section 244:

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Section 245: Overview

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```
Code Snippet 245:

import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

Metadata for Section 245:

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Status: Final

Section 246: Overview

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Code Snippet 246:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

Metadata for Section 246:

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Reviewer: AI System
Status: Final

Section 247: Overview

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Code Snippet 247:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

Metadata for Section 247:

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Reviewer: AI System
Status: Final

Section 248: Overview

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Code Snippet 248:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)
```

```
    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

Metadata for Section 248:

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Author: RAG Test Suite
Reviewer: AI System
Status: Final

Section 249: Overview

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Code Snippet 249:

```
import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

Metadata for Section 249:

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Reviewer: AI System
Status: Final

Section 250: Overview

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```
Code Snippet 250:

import asyncio
from concurrent.futures import ThreadPoolExecutor

class AsyncProcessor:
    def __init__(self, max_workers=5):
        self.executor = ThreadPoolExecutor(max_workers=max_workers)

    async def run_in_thread(self, func, *args):
        loop = asyncio.get_running_loop()
        return await loop.run_in_executor(self.executor, func, *args)

    def shutdown(self):
        self.executor.shutdown(wait=True)

# Example usage:
# processor = AsyncProcessor()
# result = await processor.run_in_thread(time.sleep, 2)
```

Metadata for Section 250:

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