The async Function Exercises

Hello, async!

- Write a "Hello thread" program that uses std::async()

std::async() with std::future

- Write a task function that returns a value
- Write a program that uses async() to start the thread and displays the return value

Launch options

- Describe briefly how you would use async() to start a task which
  - Runs asynchronously with the main thread
  - Runs synchronously with the main thread

Launch policies

- Examine the effects of changing the launch policy for the async call in the following code

```cpp
int func() {
    return 42;
}

int main() {
    auto result = std::async(func);
    std::this_thread::sleep_for(1s);
    std::cout << result.get() << std::endl;
}
```

- Add suitable print statements to show when the task function is called
- Explain your results