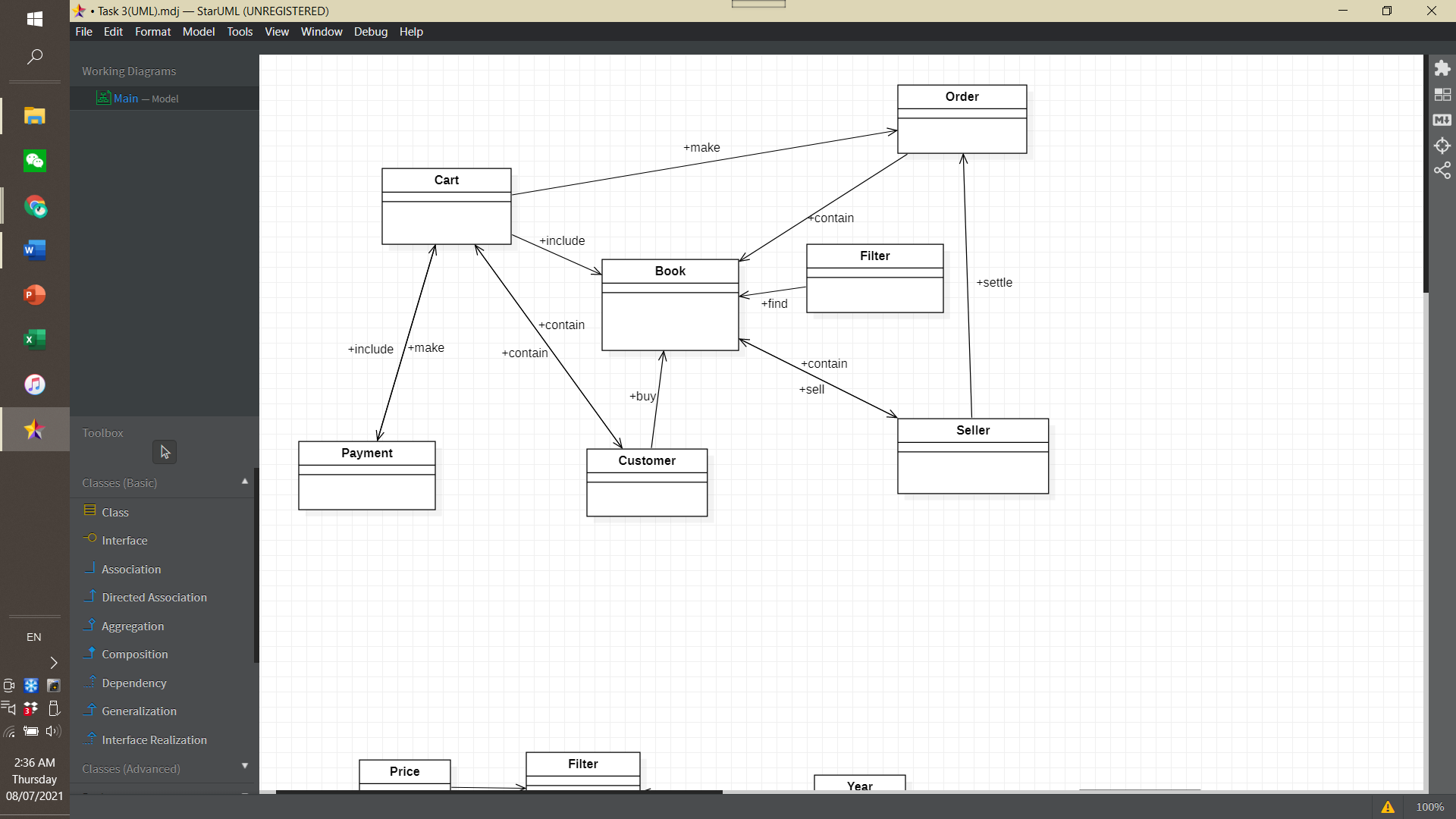
**Class diagram**

  
**Class Responsibility**

|  |  |
| --- | --- |
| **Book** | |
| Book id | Seller |
| Seller id |  |
| Name |  |
| Language |  |
| Total quantity |  |
| Price |  |
| Genre |  |
| Book details |  |

|  |  |
| --- | --- |
| **Cart** | |
| Cart id | Book |
| Book id | Payment |
| Customer id | Order |
| Total price | Customer |
| Quantity |  |
| Add book |  |
| Remove book |  |
| Make payment and order |  |

|  |  |
| --- | --- |
| **Customer** | |
| Customer id | Book |
| Customer name | Cart |
| Customer address | Order |
| Check order records |  |
| Check cart |  |

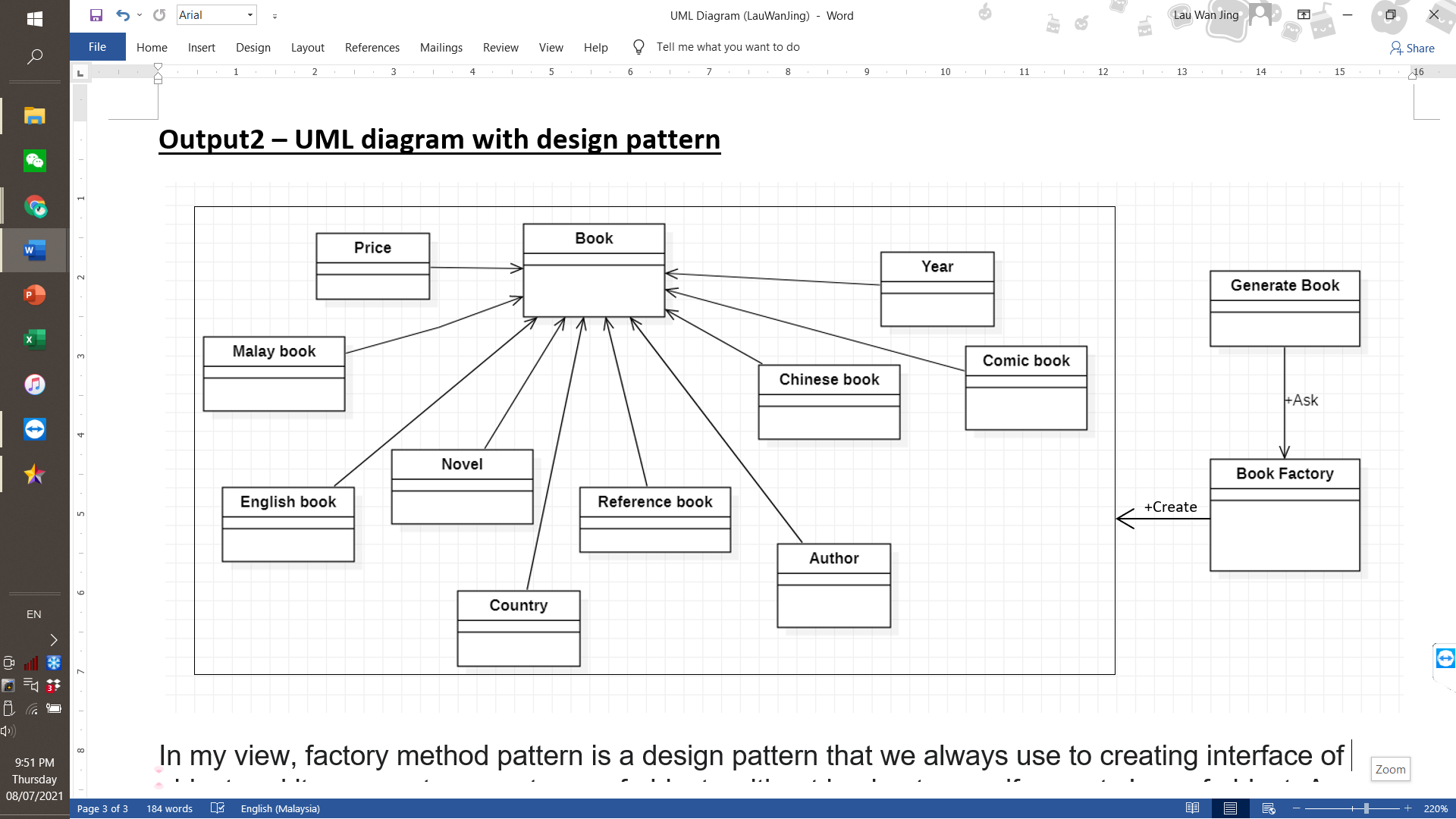
|  |  |
| --- | --- |
| **Payment** | |
| Payment id | Cart |
| Payment amount |  |
| Payment method |  |
| Cart id |  |
| Payment details |  |
| Payment status |  |

|  |  |
| --- | --- |
| **Seller** | |
| Seller id | Book |
| Seller name | Order |
| Seller address |  |
| Seller phone number |  |
| Add book |  |
| Drop book |  |
| Check order |  |
| Check payment |  |

|  |  |
| --- | --- |
| **Order** | |
| Order id | Cart |
| Cart id | Payment |
| Payment id |  |
| Make payment |  |
| Check payment |  |

|  |  |
| --- | --- |
| **Filter** | |
| Author | Book |
| Years |  |
| Language |  |
| Country |  |
| Price |  |
| Filter books |  |

**Design pattern**



In my point of view, factory method pattern is a design pattern that we always use to solve the problems in creating interface of object and it can create many types of objects without having to specify exact class of object. Factory method pattern can be used to create different objects without exposing the logic and refer newly created object to common interface. It promotes loose coupling that able to have single- responsibility design.

For example, the book factory is able to produce large number of books in various types such as languages, countries, authors and so on. In other word, this factory pattern enables us to implement various book objects to book interface to avoid complicated coding. This simplifies the task and keep all clear. In the diagram above, book is the base class for a final product such as Malay book, Chinese book and English book. Book Factory is subclass of Generate Book, implementing factory method to produce final products.