



COURSEWORK

Program : Diploma in Information Technology

Subject : DATABASE FUNDAMENTAL I

Subject code : DIT 1333

Due Date : Week 12

NAME	STUDENT ID
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Woo Chan Ee	20035739

INSTRUCTIONS TO CANDIDATES

This assignment will contribute 35% to your final grade.

This is a group assignment (THREE to FOUR students in a group).




IMPORTANT

The Sunway Diploma Studies requires students to adhere to submission deadlines for any form of assessment. Penalties are applied in relation to unauthorized late submission of work.

- Coursework submitted after the deadline but within 1 week will be considered as late submission.
- Work handed in following the extension of 1 week after the original deadline will be regarded as a non-submission and marked zero.

Academic Honesty Acknowledgement

“We verify that this paper contains entirely my own work. We have not consulted with any outside person or materials other than what was specified (an interviewee, for example) in the assignment or the syllabus requirements. Further, we have not copied or inadvertently copied ideas, sentences, or paragraphs from another student. we realize the penalties (*refer to the student handbook diploma and undergraduate programme*) for any kind of copying or collaboration on any assignment.”

Name	Signature	Date
Low Yee Mun		28 th October 2020
Ho Jun Keat		28 th October 2020
Woo Chan Ee		28 th October 2020

Appendix A

Group Member Contribution Form

Group Name: _____ Group D _____




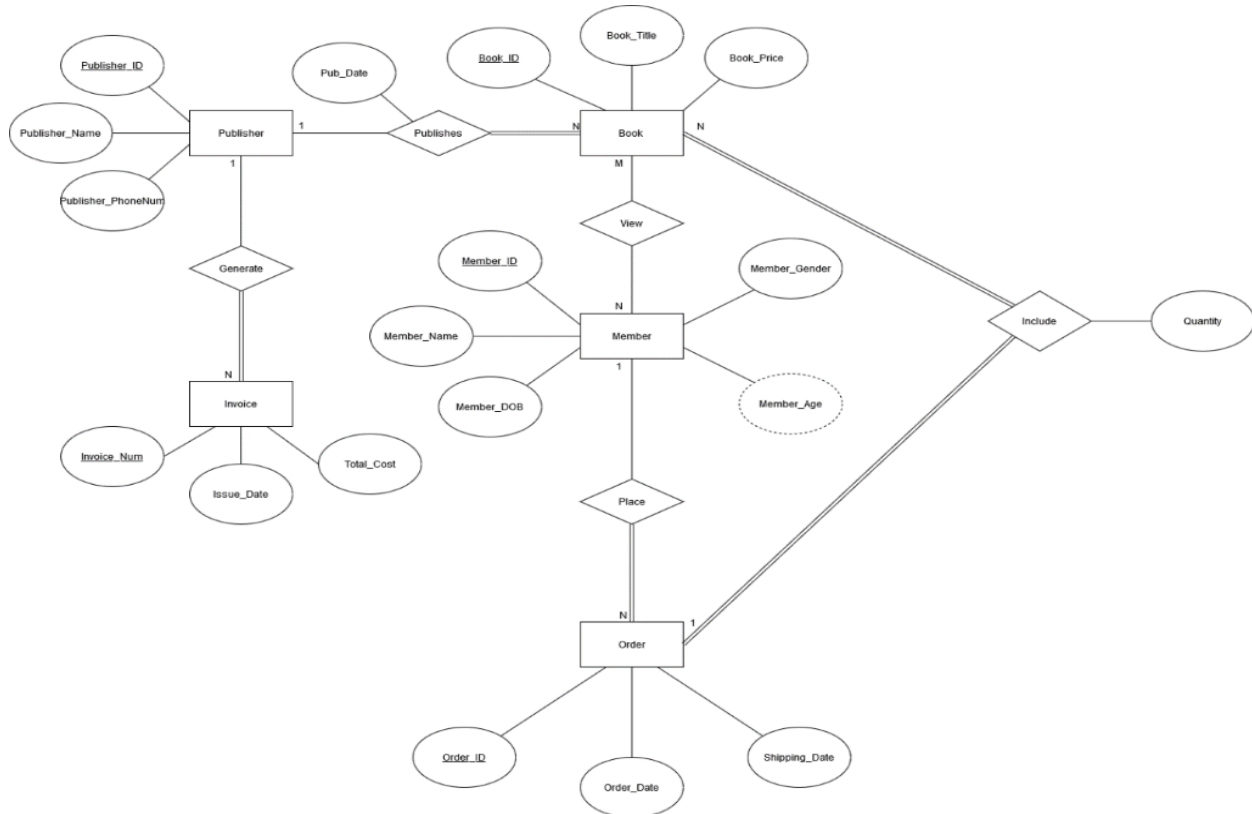
Student Name	Student ID	Signature	Contribution
Low Yee Mun	20034559		40%
Ho Jun Keat	20026985		30%
Woo Chan Ee	20035739		30%
Total (100%)			100%

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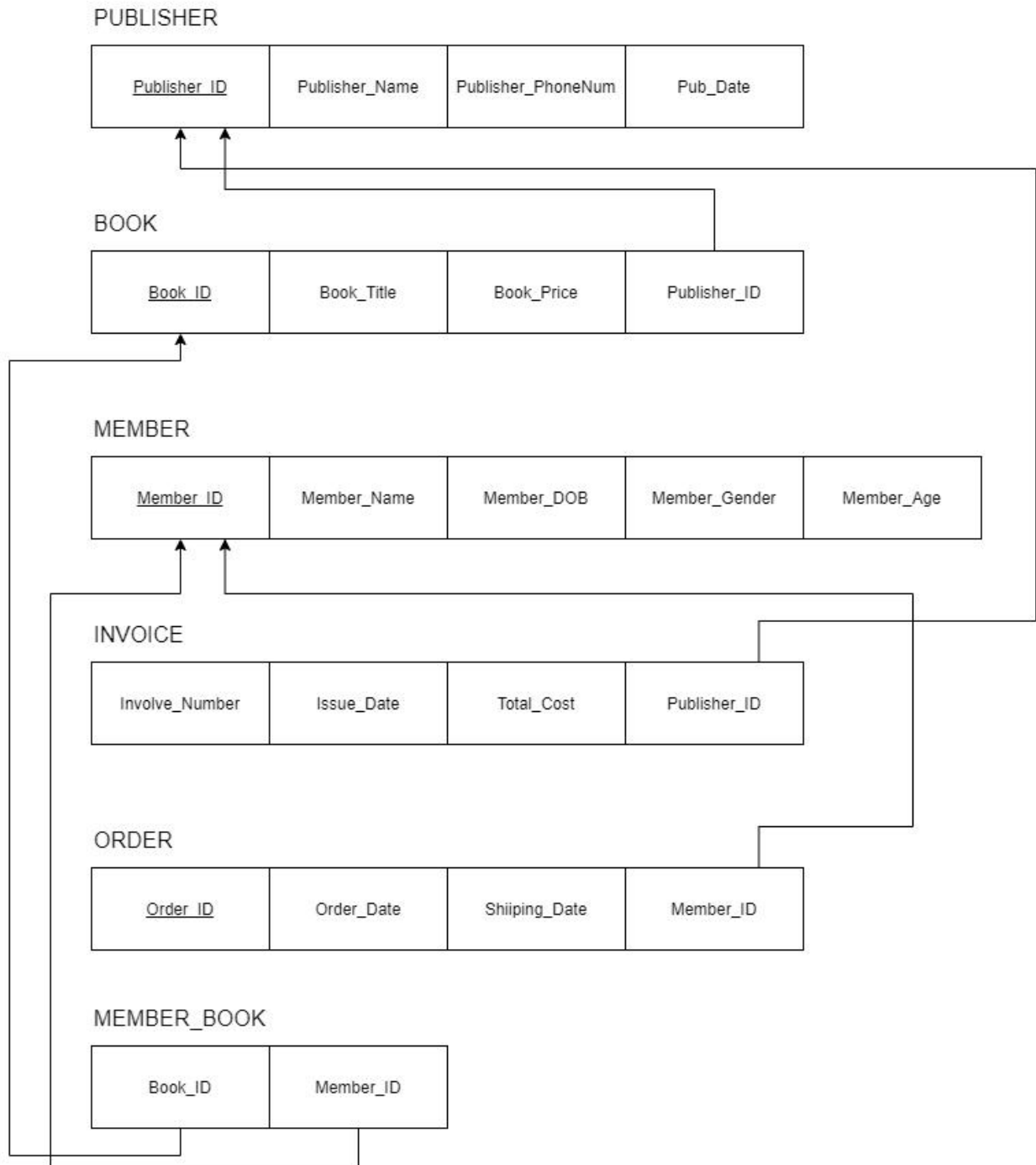
Entity Relationship Diagram (ERD)



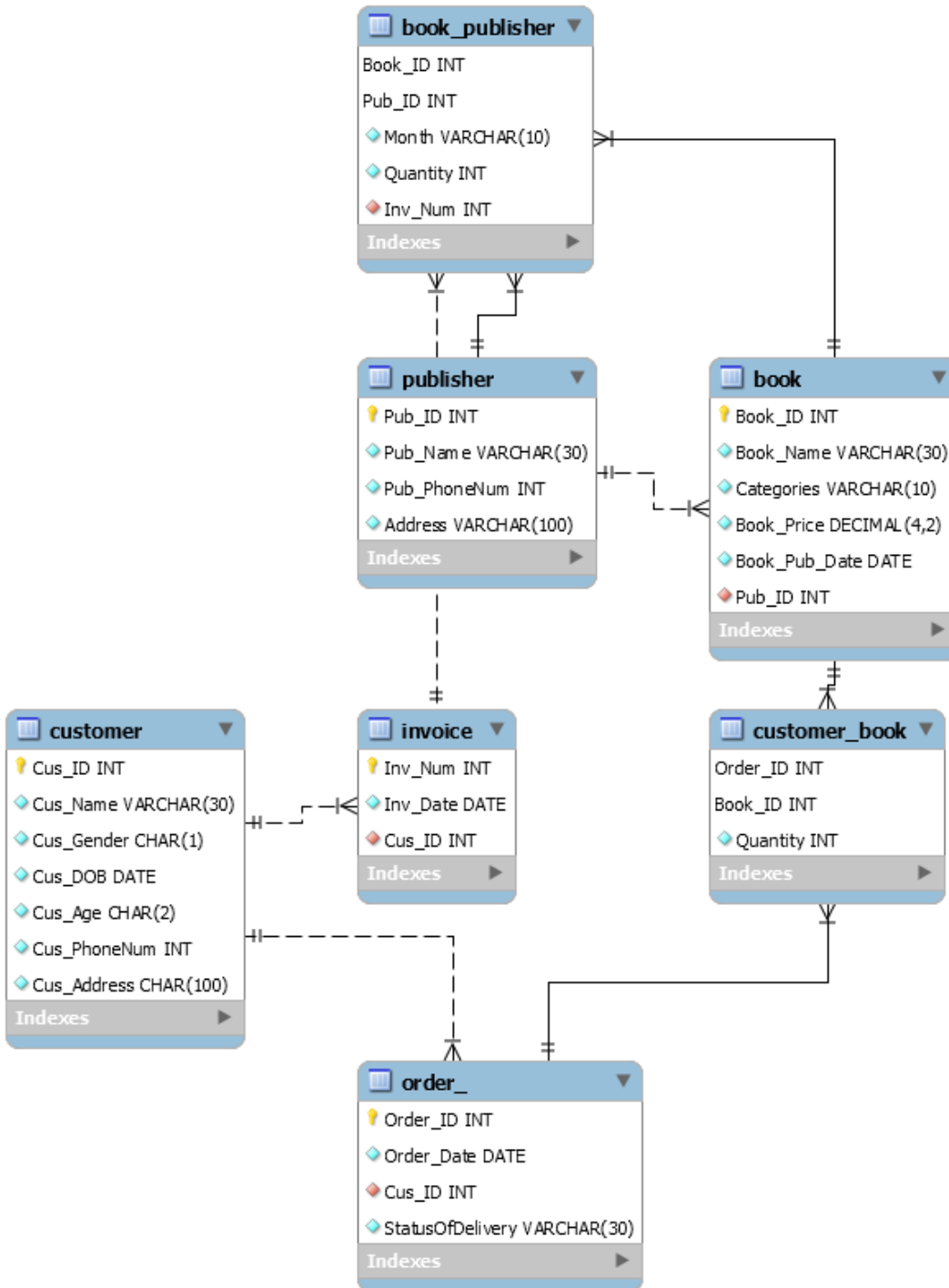
Business Rules

- A publisher may generate multiple invoice for each delivery request; an invoice only belongs to one publisher.
- A publisher may publish more than one book; a book is only published by one publisher. It is essential to know when the date of when the book is published.
- A book may be viewed by more than one member at the same time on the website; a member may view more than one book at the same time.
- A member may place multiple orders during checkout; an order belongs to only to one member.
- An order must include one or more books; it is essential to know the quantity of books ordered.

Relational Schema



Database Schema/Diagram



Data Dictionary

PUBLISHER

Field Name	Data Type	Field Length	Constraint	Not Null	Description
Publisher_ID	INT		PRIMARY KEY	YES	
Publisher_Name	VARCHAR	30		YES	
Publisher_PhoneNum	VARCHAR	10		YES	
Address	CHAR	100		YES	

BOOK

Field Name	Data Type	Field Length	Constraint	Not Null	Description
Book_ID	INT		PRIMARY KEY	YES	
Book_Name	VARCHAR	30		YES	
Book_Price	DECIMAL	4,2		YES	
Book_Pub_Date	Date				
Pub_ID	INT		FOREIGN KEY	YES	

CUSTOMER

Field Name	Data Type	Field Length	Constraint	Not Null	Description
Cus_ID	INT		PRIMARY KEY	YES	
Cus_Name	VARCHAR	20		YES	
Cus_DOB	DATE			YES	
Cus_Gender	CHAR			YES	
Cus_Age	CHAR	2		YES	
Cus_PhoneNum	INT			YES	
Cus_Address	CHAR	100		YES	

INVOICE

Field Name	Data Type	Field Length	Constraint	Not Null	Description
Inv_Num	INT			YES	
Inv_Date	DATE			YES	
Cus_ID	INT		FOREIGN KEY	YES	

ORDER

Field Name	Data Type	Field Length	Constraint	Not Null	Description
Order_ID	INT		PRIMARY KEY	YES	
Order_Date	DATE			YES	
Cus_ID	INT		FOREIGN KEY	YES	
StatusOfDelivery	VARCHAR	30		YES	

BOOK_ORDER

Field Name	Data Type	Field Length	Constraint	Not Null	Description
Book_ID	INT		PRIMARY KEY FOREIGN KEY	YES	
Order_ID	INT		PRIMARY KEY FOREIGN KEY	YES	
Quantity	INT			YES	

BOOK_PUBLISHER

Field Name	Data Type	Field Length	Constraint	Not Null	Description
Book_ID	INT		PRIMARY KEY FOREIGN KEY	YES	
Pub_ID	INT		PRIMARY KEY FOREIGN KEY	YES	
Quantity	INT			YES	

SQL Statements

Data Definition Language (DDL)

BOOK TABLE

```
CREATE table book
(Book_ID INT NOT NULL,
Book_Name VARCHAR(30) NOT NULL,
Catogories CHAR(20) NOT NULL,
Book_Price DECIMAL(4,2) NOT NULL,
Book_Pub_Date DATE NOT NULL,
Pub_ID INT NOT NULL,
CONSTRAINT PK PRIMARY KEY (Book_ID),
CONSTRAINT FK FOREIGN KEY (Pub_ID) REFERENCES publisher (Pub_ID))
```

PUBLISHER TABLE

```
CREATE table publisher
(Pub_ID INT NOT NULL,
Pub_Name VARCHAR(30) NOT NULL,
Pub_PhoneNum VARCHAR(10) NOT NULL,
Address CHAR(100) NOT NULL,
CONSTRAINT PK PRIMARY KEY (Pub_ID))
```

BOOK_PUBLISHER TABLE

```
CREATE table book_publisher
(Book_ID INT NOT NULL,
Pub_ID INT NOT NULL,
Month CHAR(20) NOT NULL,
Quantity INT NOT NULL,
Inv_Num INT NOT NULL,
```

```
constraint PK PRIMARY KEY(Book_ID, Pub_ID, Inv_Num),
constraint FK4 FOREIGN KEY (Book_ID) REFERENCES book (Book_ID)
ON DELETE CASCADE
ON UPDATE CASCADE,
constraint FK5 FOREIGN KEY (Pub_ID) REFERENCES publisher (Pub_ID)
ON DELETE CASCADE
ON UPDATE CASCADE,
constraint FK9 FOREIGN KEY (Inv_Num) REFERENCES invoice (Inv_Num)
ON DELETE CASCADE
ON UPDATE CASCADE)
```

CUSTOMER TABLE

```
CREATE table customer
(Cus_ID INT NOT NULL,
Cus_Name VARCHAR(30) NOT NULL,
Cus_Gender CHAR(1) NOT NULL,
Cus_DOB DATE NOT NULL,
Cus_Age CHAR(2) NOT NULL,
Cus_PhoneNum INT NOT NULL,
Cus_Address CHAR(100) NOT NULL,
CONSTRAINT PK PRIMARY KEY (Cus_ID))
```

INVOICE TABLE

```
CREATE table invoice
(Inv_Num INT NOT NULL,
Inv_Date DATE NOT NULL,
Pub_ID INT NOT NULL,
CONSTRAINT PK PRIMARY KEY (Inv_Num),
CONSTRAINT FK10 FOREIGN KEY (Pub_ID) REFERENCES publisher (Pub_ID))
```

ORDER TABLE

```
CREATE table order_  
(Order_ID INT NOT NULL,  
Order_Date DATE NOT NULL,  
Cus_ID INT NOT NULL,  
StatusOfDelivery CHAR(30) NOT NULL,  
CONSTRAINT PK PRIMARY KEY (Order_ID),  
CONSTRAINT FK3 FOREIGN KEY (Cus_ID) REFERENCES customer (Cus_ID))
```

CUSTOMER_BOOK TABLE

```
CREATE table customer_book  
(Order_ID INT NOT NULL,  
Book_ID INT NOT NULL,  
Quantity INT NOT NULL,  
constraint PK PRIMARY KEY (Order_ID,Book_ID),  
constraint FK8 FOREIGN KEY (Order_ID) REFERENCES order_(Order_ID),  
constraint FK7 FOREIGN KEY (Book_ID) REFERENCES book(Book_ID))
```

Data Manipulation Language (DML)

BOOK VALUE

```
INSERT INTO book  
VALUE  
(4661,'Take You Away','Romantic','15.00','2015-10-21',101),  
(4463,'A Belated Letter','Romantic','15.20','2015-05-22',103),  
(4254,'Magic Kingdom','Ficition','13.80','2016-03-14',101),  
(4866,'A Promise Under The Star','Affection','15.00','2012-07-13',102),  
(4418,'Angel And Master','Friendship','16.50','2014-12-26',103),  
(4516,'Ashes Of Love','Romantic','18.00','2018-01-26',103)
```

PUBLISHER VALUE

INSERT INTO publisher

VALUE

(101,'John',012-3456789,'1. Jalan TSB10, Taman Perindustrian Sungai Buloh, 47000 '),
(102,'Justin',017-9887665,'Industrial Park, 2, Jln Damai Puspa 2, Alam Damai, 56000
Cheras'),
(103,'Shawn',016-3459876,'21-A, Jalan SG 8/7, Taman Sri Gombak, Batu Caves, 68100,
Taman Seri Gombak, 53200 Batu Caves')

BOOK_PUBLISHER TABLE

INSERT INTO book_publisher

VALUE

(4661,101,'October',30,502),
(4463,103,'September',40,501),
(4254,101,'October',25,502),
(4866,102,'October',35,502),
(4418,103,'September',45,501),
(4516,103,'October',30,502)

CUSTOMER TABLE

INSERT INTO customer

value

(201,'Alice','F','2001-07-13',19,0134551314,'G16,PV13 Platinum Lake Condominium,
No.9, Jalan Danau Saujana 1, Setapak, 53300 Kuala Lumpur'),
(202,'James','M','2003-04-22',17,0167654421,'Jalan Wangsa Perdana 1, Wangsa Maju,
53300 Kuala Lumpur, Wilayah Persekutuan Kuala Lumpur'),
(203,'Jane','F','2002-10-25',18,0123993235,' 2, Jalan Bukit Cheras 18, Taman Bukit
Cheras, 56000 Kuala Lumpur')

INVOICE TABLE

INSERT INTO invoice

VALUE

(501,'2020-09-30',101),

(502,'2020-10-24',102)

ORDER TABLE

INSERT INTO order_

value

(301,'2020-01-22',203,'Delivered'),

(302,'2020-01-31',201,'Not Delivered'),

(303,'2020-03-20',202,'Not Delivered')

CUSTOMER BOOK TABLE

INSERT INTO customer_book

VALUE

(301,4866,2),

(301,4418,1),

(302,4661,4),

(302,4254,3),

(302,4516,1),

(303,4463,2)

Folder Link to SQL Files

https://imailsunwayedu-my.sharepoint.com/:f:/g/personal/20034559_email_sunway_edu_my/Ej91JwnjoutOnPxx6fpd6aUBGtb6YLiPQdCDTt8Lnn4GRQ?e=naprft

References

S 2020, Chapter3 Data Modelling Using The ER Model part 1, lecture notes, Database Fundamental I DIT 1333, Sunway College @ Velocity, delivered 7 September 2020.

S 2020, Chapter3 Data Modelling Using The ER Model part 2, lecture notes, Database Fundamental I DIT 1333, Sunway College @ Velocity, delivered 9 September 2020

S 2020, Chapter4 Relational Database Design by ER-to-Relational Mapping, lecture notes, Database Fundamental I DIT 1333, Sunway College @ Velocity, delivered 21 September 2020

O 2020, Chapter5 Learning Materials(Sample Data Dictionary and Database),lecture notes, Database Fundamental I DIT 1333, Sunway College @ Velocity, delivered 5 October 2020

Appendix

Sample Output

Question 6 i

Result Grid						
		Filter Rows:		Export:		Wrap Cell Cont
	Month	Book_ID	Book_Name	Quantity	Pub_ID	Pub_Name
▶	September	4418	Angel And Master	45	103	Shawn
	September	4463	A Belated Letter	40	103	Shawn

Question 6 ii

	Month	Catogories	Book_ID	Pub_ID	Quantity
▶	September	Friendship	4418	103	45
	September	Romantic	4463	103	40
	October	Fiction	4254	101	25
	October	Romantic	4516	103	30
	October	Romantic	4661	101	30
	October	Affection	4866	102	35

Question 6 iii

Inv_Num	Inv_Date	Pub_Name	Address	Total_Quantity_Of_Ordered_Book	Total_Amount_To_Be_Pa
502	2020-10-24	John	1. Jalan TSB10, Taman Perindustrian Sungai Bul...	120	1860.00
501	2020-09-30	Shawn	21-A, Jalan SG 8/7, Taman Sri Gombak, Batu Ca...	85	1350.50

Question 6 iv

	Total_Number_of_Registered_Members	Total_Female_Member	Total_Male_Member
▶	3	2	1

Question 6 v

	Cus_ID	Cus_Name	Cus_Address	Cus_PhoneNum	Book_ID	Book_Name	Quantity	Order_Date	StatusOfDeliver
▶	203	Jane	2, Jalan Bukit Cheras 18, Taman Bukit Cheras, ...	123993235	4418	Angel And Master	1	2020-01-22	Delivered
	203	Jane	2, Jalan Bukit Cheras 18, Taman Bukit Cheras, ...	123993235	4866	A Promise Under The Star	2	2020-01-22	Delivered
	201	Alice	G16,PV13 Platinum Lake Condominium, No.9, Ja...	134551314	4254	Magic Kingdom	3	2020-01-31	Not Delivered
	201	Alice	G16,PV13 Platinum Lake Condominium, No.9, Ja...	134551314	4516	Ashes Of Love	1	2020-01-31	Not Delivered
	201	Alice	G16,PV13 Platinum Lake Condominium, No.9, Ja...	134551314	4661	Take You Away	4	2020-01-31	Not Delivered
	202	James	Jalan Wangsa Perdana 1, Wangsa Maju, 53300...	167654421	4463	A Belated Letter	2	2020-03-20	Not Delivered

Question 6 vi

	Catogories	Book_ID	Book_Name	Quantity
▶	Fiction	4254	Magic Kingdom	25
	Friendship	4418	Angel And Master	45
	Romantic	4463	A Belated Letter	40
	Romantic	4516	Ashes Of Love	30
	Romantic	4661	Take You Away	30
	Affection	4866	A Promise Under The Star	35