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Batch: BSCS-01

Section: B

Course: Compiler Construction

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Date of Submission: 14/1/2023

5th Semester

Assignment # 3

CODE:

```
import xml.etree.ElementTree as ET
import csv
class Dom2Parser:
    def __init__(self):
        self.xml_file = ET.parse("compiler.xml")
        self.root = self.xml_file.getroot()
        self.book_div = self.root.find("book")

    def print_parsed_data(self):
        with open("mycsv.csv" , "w",newline='') as file:
            csvreader = csv.writer(file)
            csvreader.writerow(["Book_Id","Author_Name","Title","Genre","Price",
"Publish_date","Description"])
            for child in self.xml_file.getroot():
                print("Book_Id:", child.attrib)
                print("Author_Name:", child.find("author").text)
                print("Title:", child.find("title").text)
                print("Genre:", child.find("genre").text)
                print("Price:", child.find("price").text)
                print("Publish_date:", child.find("publish_date").text)
                print("Description:", child.find("description").text)
                print()
                csvreader.writerow([child.attrib['id'],
                                child.find("author").text,
                                child.find("title").text,
                                child.find("genre").text,child.find("price").text,
                                child.find("publish_date").text,
                                child.find("description").text]
                                )
                #self.book_div = self.book_div.find("book")

    def write_to_file(self):
        with open("parsed_data.txt", "w") as f:
            for child in self.xml_file.getroot():
                print("Book_Id:", child.attrib)
                print("author:", child.find("author").text)
                print("title:", child.find("title").text)
                print("genre:", child.find("genre").text)
                print("price:", child.find("price").text)
                print("publish_date:", child.find("publish_date").text)
                print("description:", child.find("description").text)
                print()

if __name__ == "__main__":
    parser = Dom2Parser()
    parser.print_parsed_data()
```

EXPLANATION:

This code defines a class called "Dom2Parser" that uses the xml.etree.ElementTree library to parse an xml file called "compiler.xml". The class has two methods: "print_parsed_data" and "write_to_file".

The "init" method initializes the class by parsing the xml file and getting the root element of the xml file. It also finds the "book" element in the xml file.

The "print_parsed_data" method first opens a CSV file called "mycsv.csv" and writes the headers of the columns. Then, it iterates over the root element of the xml file (which should be a collection of "book" elements), and for each child element (which should be a "book" element), it prints and writes to the csv the attributes of the "book" element, such as "Book_Id", "Author_Name", "Title", "Genre", "Price", "Publish_date", "Description".

The "write_to_file" method opens a text file called "parsed_data.txt" and writes the same information as "print_parsed_data" method, but in text file.

Finally, the code runs the methods if it is executed as the main script.

OUTPUT:

```
C:\Users\Saad\PycharmProjects\pythonProject8\venv\Scripts\python.exe C:\Users\Saad\PycharmProjects\pythonProject8\main.py
Book_Id: {'id': 'bk101'}
Author_Name: Gambardella, Matthew
Title: XML Developer's Guide
Genre: Computer
Price: 44.95
Publish_date: 2000-10-01
Description: An in-depth look at creating applications
            with XML.

Book_Id: {'id': 'bk102'}
Author_Name: Ralls, Kim
Title: Midnight Rain
Genre: Fantasy
Price: 5.95
Publish_date: 2000-12-16
Description: A former architect battles corporate zombies,
            an evil sorceress, and her own childhood to become queen
            of the world.

Book_Id: {'id': 'bk103'}
Author_Name: Corets, Eva
Title: Maeve Ascendant
Genre: Fantasy
Price: 5.95
Publish_date: 2000-11-17
Description: After the collapse of a nanotechnology
            society in England, the young survivors lay the
            foundation for a new society.
```

Book_Id: {'id': 'bk104'}
Author_Name: Corets, Eva
Title: Oberon's Legacy
Genre: Fantasy
Price: 5.95
Publish_date: 2001-03-10
Description: In post-apocalypse England, the mysterious agent known only as Oberon helps to create a new life for the inhabitants of London. Sequel to Maeve Ascendant.

Book_Id: {'id': 'bk105'}
Author_Name: Corets, Eva
Title: The Sundered Grail
Genre: Fantasy
Price: 5.95
Publish_date: 2001-09-10
Description: The two daughters of Maeve, half-sisters, battle one another for control of England. Sequel to Oberon's Legacy.

Book_Id: {'id': 'bk106'}
Author_Name: Randall, Cynthia
Title: Lover Birds
Genre: Romance
Price: 4.95
Publish_date: 2000-09-02
Description: When Carla meets Paul at an ornithology conference, tempers fly as feathers get ruffled.

Book_Id: {'id': 'bk107'}
Author_Name: Thurman, Paula
Title: Splish Splash
Genre: Romance
Price: 4.95
Publish_date: 2000-11-02
Description: A deep sea diver finds true love twenty
thousand leagues beneath the sea.

Book_Id: {'id': 'bk108'}
Author_Name: Knorr, Stefan
Title: Creepy Crawlies
Genre: Horror
Price: 4.95
Publish_date: 2000-12-06
Description: An anthology of horror stories about roaches,
centipedes, scorpions and other insects.

Book_Id: {'id': 'bk109'}
Author_Name: Kress, Peter
Title: Paradox Lost
Genre: Science Fiction
Price: 6.95
Publish_date: 2000-11-02
Description: After an inadvertant trip through a Heisenberg
Uncertainty Device, James Salway discovers the problems
of being quantum.

Book_Id: {'id': 'bk110'}
Author_Name: O'Brien, Tim
Title: Microsoft .NET: The Programming Bible

```

Book_Id: {'id': 'bk110'}
Author_Name: O'Brien, Tim
Title: Microsoft .NET: The Programming Bible
Genre: Computer
Price: 36.95
Publish_date: 2000-12-09
Description: Microsoft's .NET initiative is explored in
             detail in this deep programmer's reference.

Book_Id: {'id': 'bk111'}
Author_Name: O'Brien, Tim
Title: MSXML3: A Comprehensive Guide
Genre: Computer
Price: 36.95
Publish_date: 2000-12-01
Description: The Microsoft MSXML3 parser is covered in
             detail, with attention to XML DOM interfaces, XSLT processing,
             SAX and more.

Book_Id: {'id': 'bk112'}
Author_Name: Galos, Mike
Title: Visual Studio 7: A Comprehensive Guide
Genre: Computer
Price: 49.95
Publish_date: 2001-04-16
Description: Microsoft Visual Studio 7 is explored in depth,
             looking at how Visual Basic, Visual C++, C#, and ASP+ are
             integrated into a comprehensive development
             environment.

Process finished with exit code 0

```

	A	B	C	D	E	F	G	H	I
1	Book_Id	Author_Name	Title	Genre	Price	Publish_date	Description		
2	bk101	Gambardella, Matthew	XML Developer's Guide	Computer	44.95	10/1/2000	An in-depth look		
3	bk102	Ralls, Kim	Midnight Rain	Fantasy	5.95	12/16/2000	A former		
4	bk103	Corets, Eva	Maeve Ascendant	Fantasy	5.95	11/17/2000	After the		
5	bk104	Corets, Eva	Oberon's Legacy	Fantasy	5.95	3/10/2001	In post-		
6	bk105	Corets, Eva	The Sundered Grail	Fantasy	5.95	9/10/2001	The two		
7	bk106	Randall, Cynthia	Lover Birds	Romance	4.95	9/2/2000	When Carla		
8	bk107	Thurman, Paula	Splish Splash	Romance	4.95	11/2/2000	A deep sea diver		
9	bk108	Knorr, Stefan	Creepy Crawlies	Horror	4.95	12/6/2000	An anthology of		
10	bk109	Kress, Peter	Paradox Lost	Science Fiction	6.95	11/2/2000	After an		
11	bk110	O'Brien, Tim	Microsoft .NET: The Programming Bible	Computer	36.95	12/9/2000	Microsoft's .NET		
12	bk111	O'Brien, Tim	MSXML3: A Comprehensive Guide	Computer	36.95	12/1/2000	The Microsoft		
13	bk112	Galos, Mike	Visual Studio 7: A Comprehensive Guide	Computer	49.95	4/16/2001	Microsoft Visual		
14									
15									
16									

Github Link:

<https://github.com/saadii124>