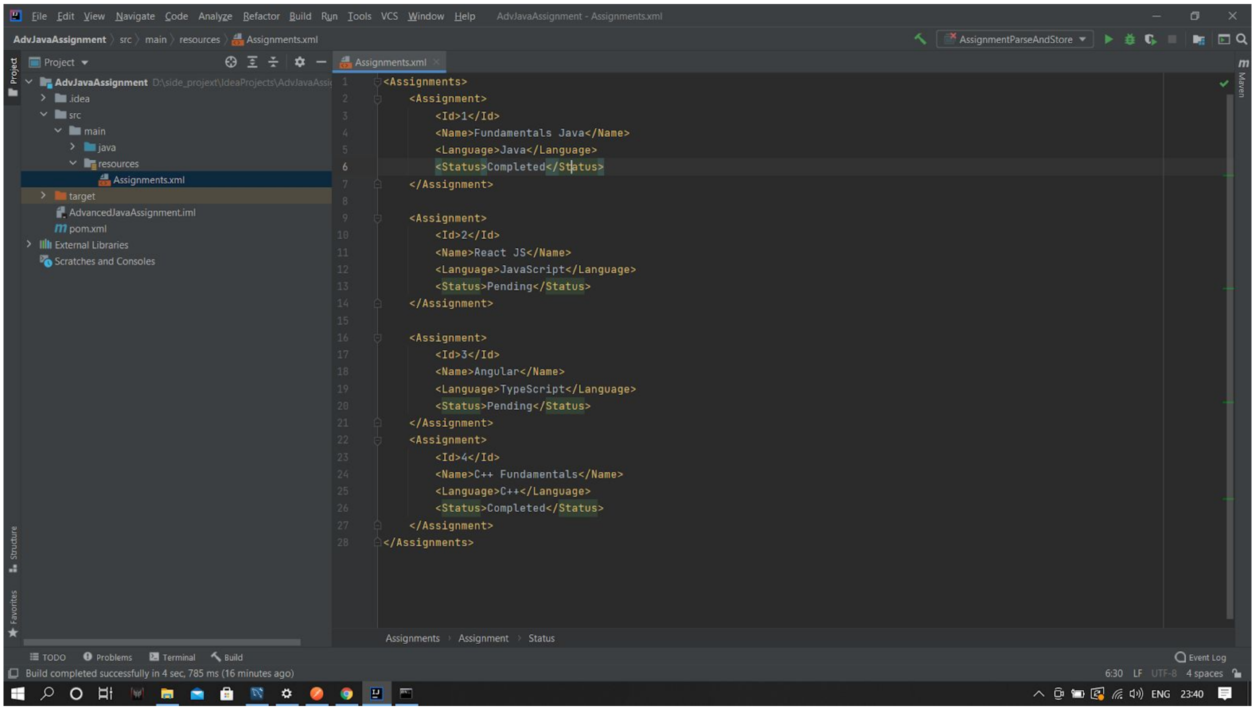
Advanced Java assignment

Maithreyan K

1. Takes in assignment related information (name, prg_language, status update) in XML file

XML Data



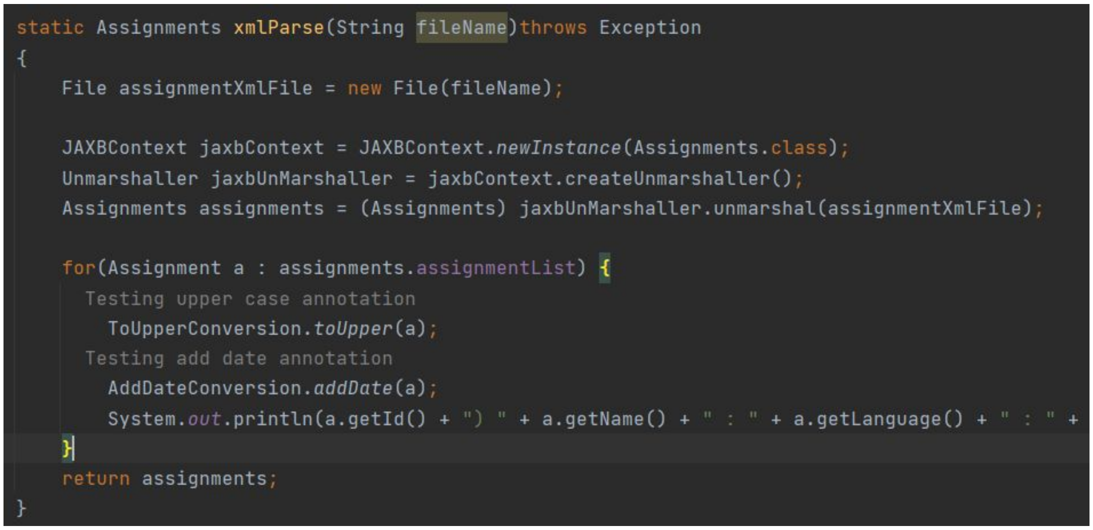
```xml
<Assignments>
    <Assignment>
        <Id>1</Id>
        <Name>Fundamentals Java</Name>
        <Language>Java</Language>
        <Status>Completed</Status>
    </Assignment>

    <Assignment>
        <Id>2</Id>
        <Name>React JS</Name>
        <Language>JavaScript</Language>
        <Status>Pending</Status>
    </Assignment>

    <Assignment>
        <Id>3</Id>
        <Name>Angular</Name>
        <Language>TypeScript</Language>
        <Status>Pending</Status>
    </Assignment>
    <Assignment>
        <Id>4</Id>
        <Name>C++ Fundamentals</Name>
        <Language>C++</Language>
        <Status>Completed</Status>
    </Assignment>
</Assignments>
```

Build completed successfully in 4 sec, 785 ms (16 minutes ago)

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help
AdvJavaAssignment - Assignments.xml
AdvJavaAssignment 〉 src 〉 main 〉 resources 〉 Assignments.xml
AssignmentParseAndStore
Project
AdvJavaAssignment D:\side_project\IdeaProjects\AdvJavaAssi
.idea
src
main
java
resources
Assignments.xml
target
AdvancedJavaAssignment.iml
pom.xml
External Libraries
Scratches and Consoles
Assignments 〉 Assignment 〉 Status
TODO
Problems
Terminal
Build
Event Log
6:30 LF UTF-8 4 spaces
ENG 23:40

2. Parses the xml (Preferably using JAXB)

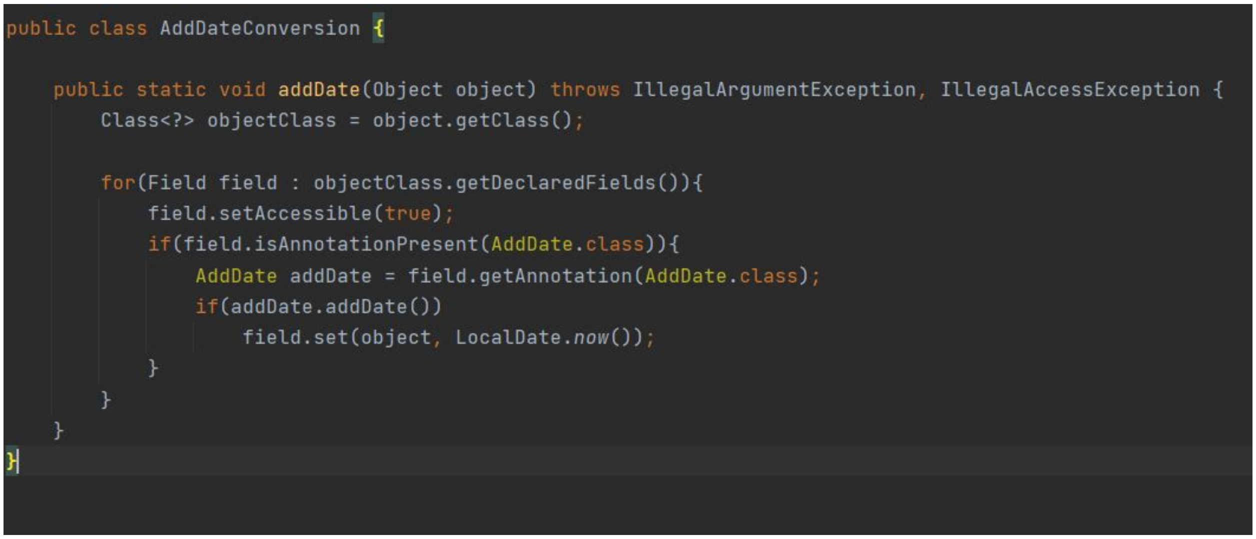
unmarshalling of xml using jaxb



```
static Assignments xmlParse(String fileName)throws Exception
{
    File assignmentXmlFile = new File(fileName);

    JAXBContext jaxbContext = JAXBContext.newInstance(Assignments.class);
    Unmarshaller jaxbUnMarshaller = jaxbContext.createUnmarshaller();
    Assignments assignments = (Assignments) jaxbUnMarshaller.unmarshal(assignmentXmlFile);

    for(Assignment a : assignments.assignmentList) {
      Testing upper case annotation
        ToUpperConversion.toUpper(a);
      Testing add date annotation
        AddDateConversion.addDate(a);
        System.out.println(a.getId() + ") " + a.getName() + " : " + a.getLanguage() + " : " +
    }
    return assignments;
}
```

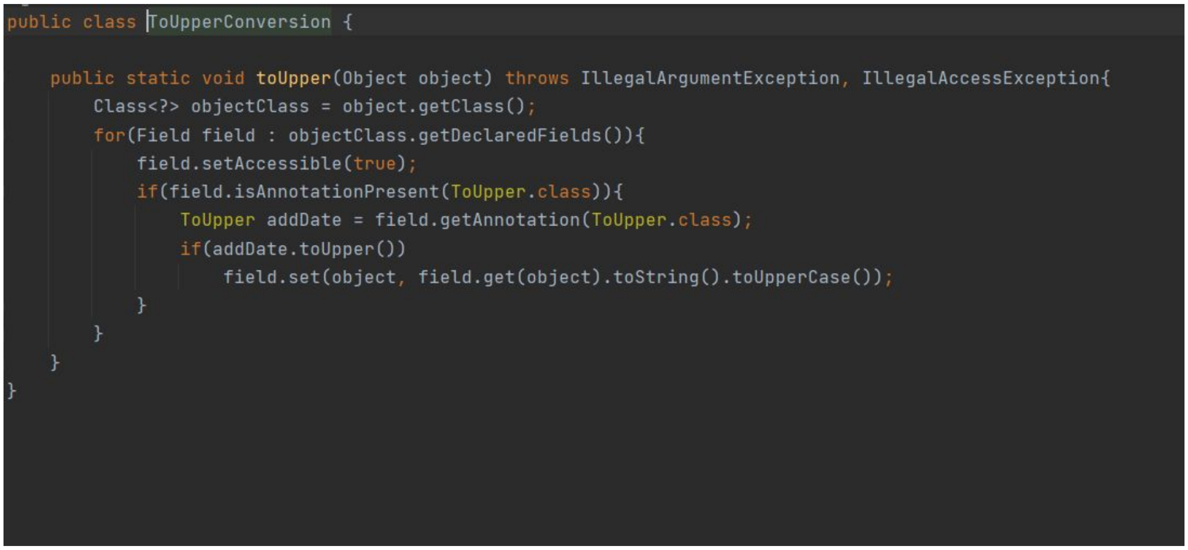
3. Create a custom annotation to Capitalize names (name, language) in the assignment data and add date whenever you are processing a new record.

DateConversion

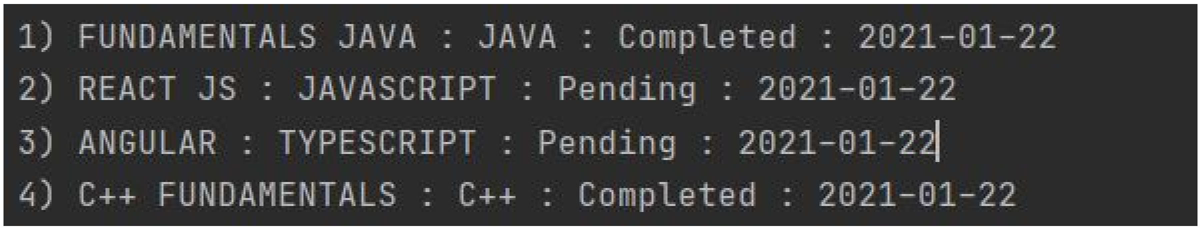


```
public class AddDateConversion {

    public static void addDate(Object object) throws IllegalArgumentException, IllegalAccessException {
        Class<?> objectClass = object.getClass();

        for(Field field : objectClass.getDeclaredFields()){
            field.setAccessible(true);
            if(field.isAnnotationPresent(AddDate.class)){
                AddDate addDate = field.getAnnotation(AddDate.class);
                if(addDate.addDate())
                    field.set(object, LocalDate.now());
            }
        }
    }
}
```

ToUpperConversion

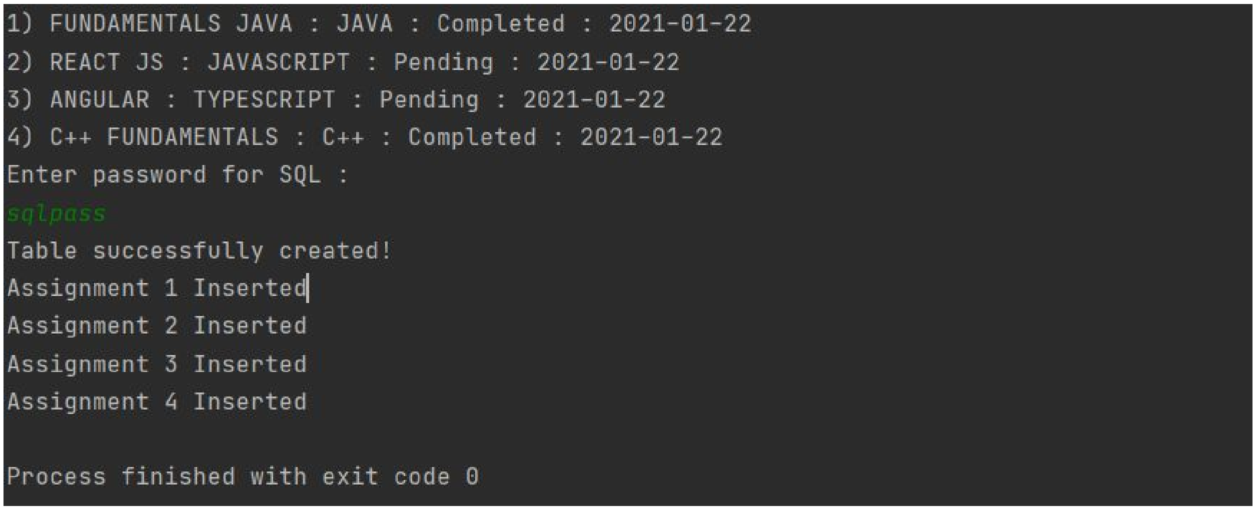


```java
public class ToUpperConversion {

    public static void toUpper(Object object) throws IllegalArgumentException, IllegalAccessException{
        Class<?> objectClass = object.getClass();
        for(Field field : objectClass.getDeclaredFields()){
            field.setAccessible(true);
            if(field.isAnnotationPresent(ToUpper.class)){
                ToUpper addDate = field.getAnnotation(ToUpper.class);
                if(addDate.toUpper())
                    field.set(object, field.get(object).toString().toUpperCase());
            }
        }
    }
}
```



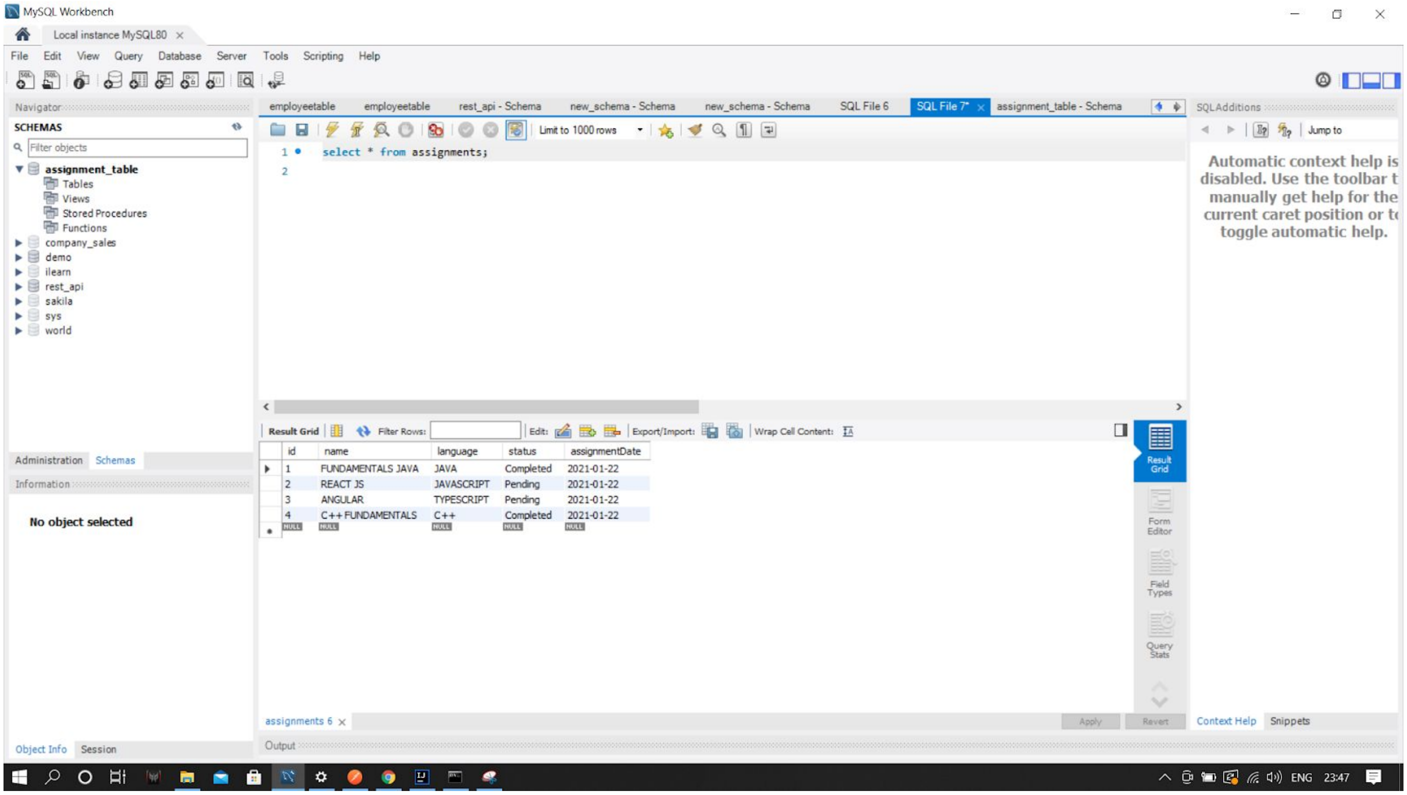
```
1) FUNDAMENTALS JAVA : JAVA : Completed : 2021-01-22
2) REACT JS : JAVASCRIPT : Pending : 2021-01-22
3) ANGULAR : TYPESCRIPT : Pending : 2021-01-22
4) C++ FUNDAMENTALS : C++ : Completed : 2021-01-22
```

4. Store details in MySQL DB using JDBC



```
1) FUNDAMENTALS JAVA : JAVA : Completed : 2021-01-22
2) REACT JS : JAVASCRIPT : Pending : 2021-01-22
3) ANGULAR : TYPESCRIPT : Pending : 2021-01-22
4) C++ FUNDAMENTALS : C++ : Completed : 2021-01-22
Enter password for SQL :
sqlpass
Table successfully created!
Assignment 1 Inserted
Assignment 2 Inserted
Assignment 3 Inserted
Assignment 4 Inserted

Process finished with exit code 0
```

Database Entry



```
select * from assignments;
```

id	name	language	status	assignmentDate
1	FUNDAMENTALS JAVA	JAVA	Completed	2021-01-22
2	REACT JS	JAVASCRIPT	Pending	2021-01-22
3	ANGULAR	TYPESCRIPT	Pending	2021-01-22
4	C++ FUNDAMENTALS	C++	Completed	2021-01-22
NULL	NULL	NULL	NULL	NULL

No object selected

Automatic context help is disabled. Use the toolbar t manually get help for the current caret position or t toggle automatic help.