# Java FundaMentals

## Prabhakar

**Tasks:**

1. Read an XML file “”student.xml” containing list of student data in the following format, deserialize them into java objects, then serialize the unique <rollnumber, total marks(Phy+chem+math)> to a text file “student.txt” with appropriate exception handling.
2. Secondly, deserialize the previously stored student.txt file with roll num and total marks. Then, serialize the top 5 students' roll numbers and total marks into excel or csv file in the following format.
3. Write the implementation for singleton class.

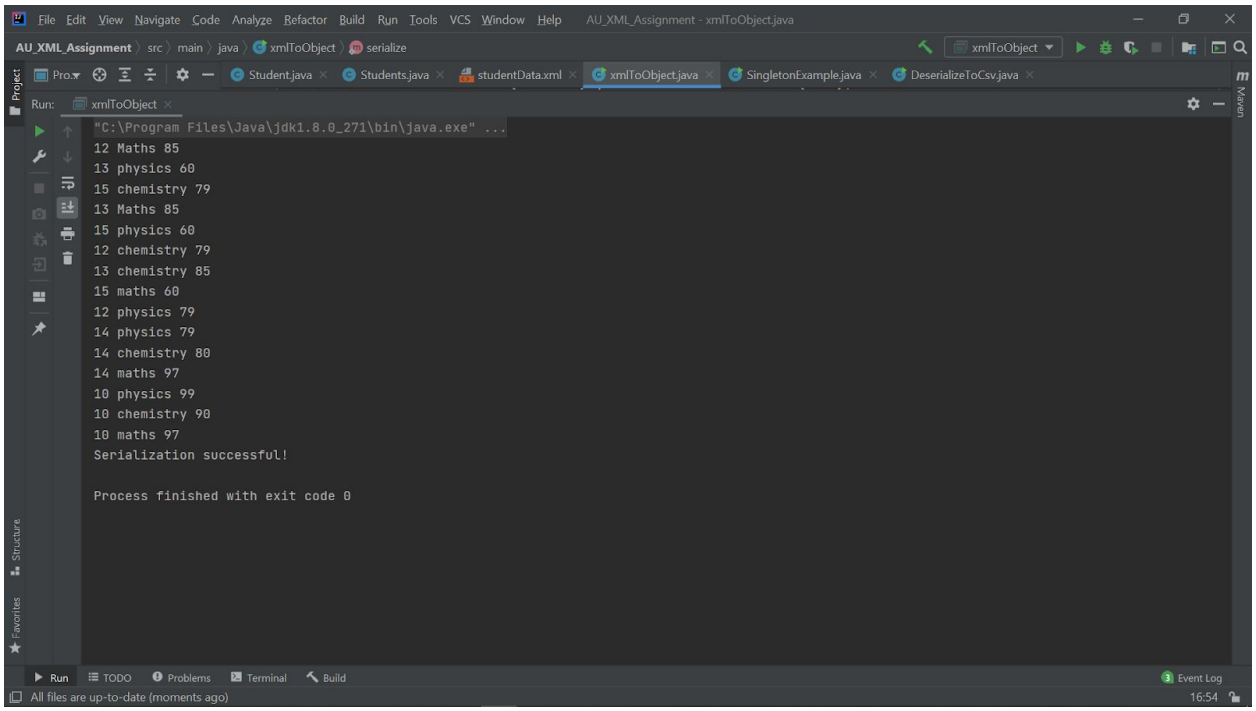
### 1. StudentData.xml

```
<students>
    <student>
        <roll>12</roll>
        <marks>85</marks>
        <subject>Maths</subject>
    </student>
    <student>
        <roll>13</roll>
        <marks>60</marks>
        <subject>physics</subject>
    </student>
    <student>
        <roll>15</roll>
        <marks>79</marks>
        <subject>chemistry</subject>
    </student>
    <student>
        <roll>13</roll>
        <marks>85</marks>
        <subject>Maths</subject>
    </student>
```

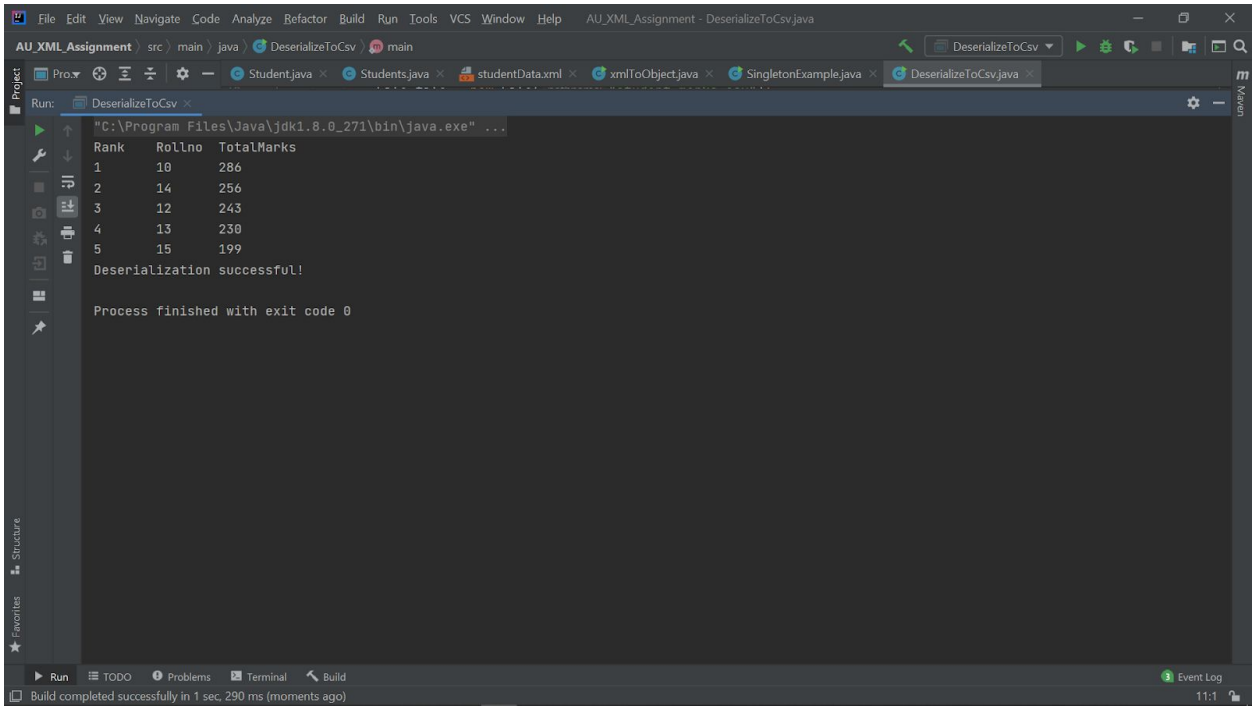
```
<student>
    <roll>15</roll>
    <marks>60</marks>
    <subject>physics</subject>
</student>
<student>
    <roll>12</roll>
    <marks>79</marks>
    <subject>chemistry</subject>
</student>
<student>
    <roll>13</roll>
    <marks>85</marks>
    <subject>chemistry</subject>
</student>
<student>
    <roll>15</roll>
    <marks>60</marks>
    <subject>maths</subject>
</student>
<student>
    <roll>12</roll>
    <marks>79</marks>
    <subject>physics</subject>
</student>
<student>
    <roll>14</roll>
    <marks>79</marks>
    <subject>physics</subject>
</student>
<student>
    <roll>14</roll>
    <marks>80</marks>
    <subject>chemistry</subject>
</student>
<student>
    <roll>14</roll>
    <marks>97</marks>
    <subject>maths</subject>
</student>
```

```
    <student>
        <roll>10</roll>
        <marks>99</marks>
        <subject>physics</subject>
    </student>
    <student>
        <roll>10</roll>
        <marks>90</marks>
        <subject>chemistry</subject>
    </student>
    <student>
        <roll>10</roll>
        <marks>97</marks>
        <subject>maths</subject>
    </student>
</students>
```

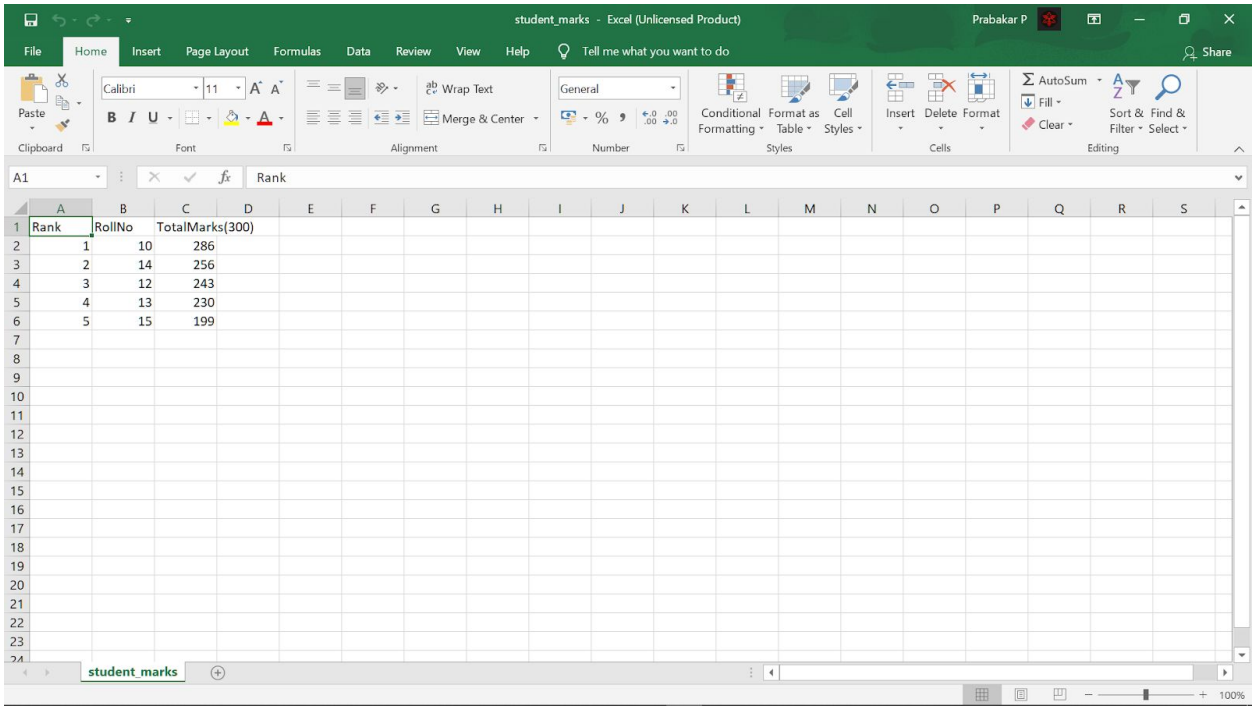
## XML file to Student Text file using Serialization:



## Deserialize the text file data to CSV file:




## CSV file:



**Singleton Implementation:**

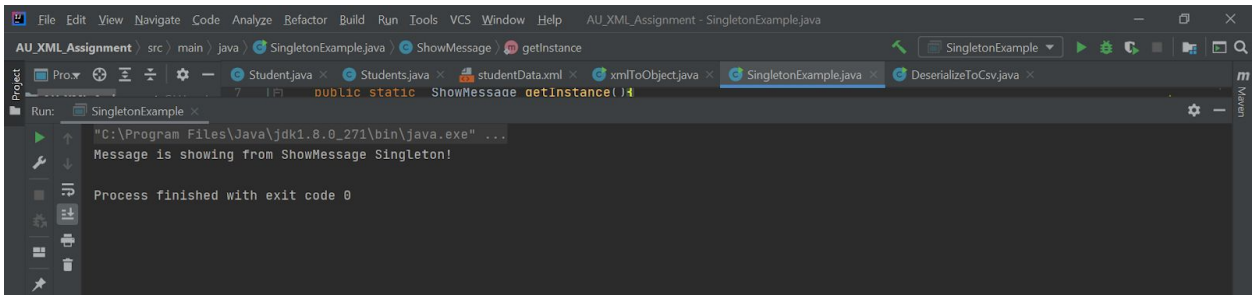
```
class ShowMessage
{
    private static ShowMessage singletonPrinter = new ShowMessage();

    private ShowMessage(){}

    public static  ShowMessage getInstance(){
        return singletonPrinter;
    }

    protected static void showData(String data){
        System.out.println(data);
    }
}


public class SingletonExample {
    public static void main(String[] args) {
        ShowMessage showMessage = ShowMessage.getInstance();
              showMessage.showData("Message  is  showing  from  ShowMessage
Singleton!");
    }
}
```




**Note:** code attached in different folder