# A. OLAP and Data Warehouse (25%)

Consider the following table called **Books**:

| Title | Author | Publisher | DatePublished | Genre | Pages |
|---|---|---|---|---|---|
| War and Peace [WP] | Tolstoy | The Russian Messenger [TRM] | 1869 | Novel [N] | 1225 |
| The Hobbit [TH] | Tolkien | George Allen & Unwin [GAU] | 1937 | Fantasy/Sci-Fi [F] | 310 |
| Pride and Prejudice [PP] | Austen | Egerton [EGE] | 1813 | Novel [N] | 392 |
| The Lord of the Rings [LR] | Tolkien | George Allen & Unwin [GAU] | 1954 | Fantasy/Sci-Fi [F] | 1137 |
| Animal Farm [AF] | Orwell | Secker and Warburg [S&W] | 1945 | Novel [N] | 112 |
| 1984 [1984] | Orwell | Secker and Warburg [S&W] | 1949 | Fantasy/Sci-Fi [F] | 279 |

and the following query called **Q₁**

        SELECT Author, Genre, Sum(Pages) AS SumPages
        FROM Books
        WHERE Pages <= 1200
        GROUP BY Author, Genre

1) Show the result of query **Q₁** by filling in the table below (you may not need to use all the rows and columns). [**Don't waste time: use abbreviations as indicated in square brackets!**]

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2) On the result you obtained in point 1), perform now a **rollup** operation on **Genre** and show the result by filling in the table below (you may not need to use all the rows and columns)

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3) On the result obtained in point 2), perform now a **drill-down** operation on the **DatePublished** dimension, keeping it at the "decade" level. Show the result by filling in the table below (you may not need to use all the rows and columns)

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4) Let **Q₂** be the same query as **Q₁** but with the "WITH ROLLUP" clause at the end. Show the result of query **Q₂** by filling in the table below (you may not need to use all the rows and columns)

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