# Assignment 1

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## Task 1

a) From the client side we need only a browser with access to the WWW, like a PC. On the server side we need at least one host machine, depending on the requirements, to host a web server to process client requests, and a database server (DBMS and storage) that manages the data storage and handling to the web server.
b) Presentation Tier: client side (GUI) - the browser.
Logic Tier: web server
Storage Tier: database server
c) On the Presentation Tier, the user can type the book name and search. The Presentation Tier sends the request to the Logic Tier, which interprets the request and does the needed logic to find the book, requesting the book data to the Storage Tier. Once the book is found, the data is retrieved from the Storage Tier to the Logic Tier, where it provides the needed data to the Presentation Tier.

## Task 2

With RPC, having a client and a server machine, the client needs only the call the desired function to the server machine. That call is sent and handled by RPC. The server instance needs then to handle the logic to print and manage the print queue. The result (return) of the call is also answered automatically by the RPC.

Without RPC, we need to handle the call by ourselves. Which means, first the client needs to convert the data to a pattern (e.g. JSON) and marshall (serialize) the data and send through the channel (using sockets, message queue, or another solution); when it arrives to the server, it unmarshall (deserialize) the data and then converts back the pattern to the server language, and do the same processing as before. As the server needs to answer back, the same process is made vice-versa.