

## Case Study – 12

### (20 points)

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**Submission:** Save this Word document with your answers as a PDF file and upload the PDF file to Canvas.

(10 pts) Identify the security concerns in the Book Exchange system and how they should be addressed in the system. (250 words minimum)

Most of the security concerns for the Book Exchange system are centered around account information, breach of data, and malicious content circulating on the application. Users, members and administrators specifically, are required to provide a home address, email, and optionally a payment method that attaches to their account. If another user or a hacker were to gain access to any member or administrator's account information, they could potentially have their home address or payment information exposed. This obviously raises further concerns, but the stem of the problem was the hacker's ability to access the Book Exchange system's information. Another possible security concern is the deletion, editing, or removal of data from the Book Exchange system's database. The Book Exchange system centers around its ability to provide users with access to books through its vast library of titles and information surrounding each of them. A hacker removing this information from the system or gaining access to it for free is extremely damaging to both the Book Exchange system and each one of its users. Finally, another security concern that could potentially be the most damaging is the possibility of malicious content. Hackers or system abusers may find ways to implement malicious links and messages into the forums or private messages that could steal users' data. On top of this, if a hacker were to gain access to account information of the members, they would also gain access to each members' email address and could proceed to abuse phishing attempts through malicious emails and messages. There are many security concerns that can affect both the users and the Book Exchange system's database.

(10 pts) Develop a cloud-based backup strategy for the Book Exchange system. Include cost estimates for your strategy. (250 words minimum)

To address the Book Exchange system's possible security concerns, a cloud-based backup strategy may be necessary to secure the integrity of the system's database and library. Alongside a manual backup schedule for the Book Exchange system's library database, an automatic backup system may need to be implemented to ensure that the system's files stay secure and up to date. Standard user error may become an issue if manual backups are solely relied upon, so the addition of automatically scheduled backups to the cloud can negate the possibility of users forgetting to backup the system or running into manual errors when attempting to back it up. Another possible solution is the addition of a secondary database that is used for only the purpose of having a backup system. A single database system that gets corrupted or has data removed will have trouble with maintenance and the reversal of any errors that may occur. Adding a second database that serves solely as a backup for the first can provide double security for any errors or problems with the first and may also act as a form of "version control" for the main database should the users want to revert to a former version of the database's library. From case study ten's calculations of web servers and database costs, a singular

database may end up costing around five thousand dollars per year. A secondary database used only for backups and version control would only need to be up to the same standard as the original database and has no need to be above it. Therefore, a secondary database system can be cheaper than the first as it is not required to be constantly used and updated. With that said, a second database option could drop to a cheap price of three thousand dollars per year. With the addition of the second database, the costs of data and a library could rise anywhere from eight thousand dollars per year to ten thousand dollars per year.