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| **Risk** | **Cause & Effect** | **Date identified** | **Probability** | **Likelihood** | **Impact** | **Risk Mitigation** |
| **Project Risks** | | | | | | |
| Lack of clear planning | Not enough time allocated to planning. Would lead to a lack of clear direction for the project | 30/04/2020 | 2 | Unlikely | High | Allocate the first hours/days of the project to planning the project based off the brief and ensuring enough time is allocated to delivering the minimum requirements for the client. Focus on:   * Answering initialisation questions * Developing a BOSCARD * Developing a Business Case |
| Not able to track progress effectively | Not implementing a method/software to write down tasks against time. Lose sight of what task needs to be completed and what is already completed | 30/04/2020 | 3 | Occasional | Medium | Use a Kanban board (Trello) to track project progress effectively having the columns:   * Product backlog items * In progress * Done   Also, set up an excel sheet to track work effort by writing tasks completed each day, time spent and regularly reviewing what is going well, what isn’t and how can I improve |
| Lack of understanding the project brief, deliverables and scope | Not enough time spent analysing brief and breaking down tasks. Potential to not deliver the correct product/application | 30/04/2020 | 2 | Unlikely | High | During planning phase, read the project brief multiple times and breakdown each task on Trello based off the brief. Also, regularly revisit the brief during the project |
| Bad management of changes | Not allowing for contigency time or flexibility in the project. The effect would be not meeting the project deadline | 30/04/2020 | 3 | Occasional | Medium | Adopt Agile methodologies in my working style such as, conducting sprints and regularly reviewing any software I develop across multiple software platforms. Also keep looking at the user stories or use case for the project |
| Poor management of time | Lack of planning and analysis of project tasks at the beginning. The effect would be missing the project deadline | 30/04/2020 | 3 | Occasional | High | Look at the timescale from the project start date (29/04/2020) to the project deadline (15/05/2020) and determine time available to spend on project. Then allocate suitable timeframes for each deliverable in the project |
| Poor delivery of final presentation and answering questions | Lack of preparation and practice for presentation. Audience/client would not understand the functionality of the application or progress of project | 30/04/2020 | 2 | Unlikely | Medium | Have final application developed by (13/05/2020) leaving 2 days to prepare and practice for final presentation |
| **Technical Risks** | | | | | | |
| Incorrect modelling of database relationships | Poor planning at ERD stage. Database will provide inaccurate information about the inventory i.e M2M relationship developed | 30/04/2020 | 1 | Very Unlikely | High | Draw out tables in full and develop an ERD format to ensure relationships are modelled accurately, using QA material and google to fully understand data table relationships |
| Failure to understand purpose of data in database | Poor understanding of clients/users requirements. Delivering a database that cannot be managed/manipulated like the clients inventory as desired | 30/04/2020 | 1 | Very Unlikely | Medium | Analyse fields in the three tables (Customers, Products, Orders) within the database and develop reasoning for each data type and constraint assigned to the fields. Set up each table in Excel explaining this information. |
| Poor documentation of all software tools | Inhibits troubleshooting, improvements and continuity. Should make it easy for someone to takeover database | 30/04/2020 | 3 | Occasional | Low | Develop a word document that is split into specific sections for each software tool I will use in the project. Explain the reasons for using each tool and how I have used them to create different products. Also explain the main functionality and commands needed to use my products in simple terms. Use K.I.S.S in my language.  Also, make sure to update documentation on GitHub when making commits |
| Not enough testing coverage of each development | Not enough time allocated to testing. End application might be functional but produce bugs when deployed to the client | 30/04/2020 | 4 | Likely | High | Research how testing is conducted for each software tool used i.e for java and MySQL. Based off this research plan how much time should be spent on testing my applications |
| Lack of technical knowledge in Java, Junit and Git and CI server | New to working with these different software’s. Might slow progress of developing a functioning application | 30/04/2020 | 4 | Likely | Medium | Research these software tools during my spare time. Also, on weekends, make sure I to try use the software tools I am unfamiliar with to get an idea of how they work. |
| Poor repository management | Poor documentation and labelling associated with commits. Lose track of latest codes or where current application stands in development process | 30/04/2020 | 2 | Unlikely | Low | Make sure I clearly define every branch and commit within my repository on GitHub.  Before making commits and merging branches check the contents of my files I am committing and those stored on my branches to avoid confusion.  Leave clear explanations of each action I make in GitHub to allow for easier repository management and traceability |
| Not delivering a fully functioning application with the minimum requirements | Not planning time and resources effectively enough to meet minimum requirements. Leads to an unhappy client and failure to execute the project | 30/04/2020 | 3 | Occasional | High | Make sure the plan for the project is geared towards meeting the minimum requirements by regularly reviewing the project progress and ensuring I adapt where necessary and maintain an Agile working style. |

**Additional Risks to consider**

* Developing a database for a book store means you have to think of the relationship between books and authors. One book can have multiple authors and one author can write many books, creating a Many to Many relationship
  + To account for this issue in your database design you would have to add a separate table for authors and develop a junction table that combines the authors and books table.