**Risk Assessment Initial Review**

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| Risk ID | Description | Evaluation | Likelihood | Impact level | Responsibility | Response | Control Measures |
| 1. | Virtual Machine goes down or becomes inaccessible | The application can no longer run and will go offline | Low | High | Google Cloud Service | Use a different Virtual Machine to recreate the infrastructure | Use infrastructure as code to quickly recreate machine |
| 2 | Database goes down | The application will no longer function | Low | High | Google Cloud Services | Use another instance to recreate the database | Use infrastructure as code to quickly recreate database |
| 3 | Unknown user may connect if Jenkins port is allowing all | The app would be compromised as the intent of the user is unknown, however the user must also have the details of the admin account | Low | High | Developer | Redo and create new admin account with more secure details | Allow specific IP addresses only and keep admin account details secure |
| 4 | Broken version deployed onto production | Deployed version may have issues | Medium | Medium | Developer | Revert into the most recent version that is stable | Automate tests before deployment |
| 5 | Poor time management | Could result in MVP not being met which could affect the relationship with the client | Medium | Dependent on level,  Medium/High | Developer | Aim to keep relationship with client intact | Use an organised plan to ensure MVP is met |
| 6 | Adaptation the project specification | Dependant on level and time of change, could influence all aspects of the project. | Low | Medium/High | Client | If MVP could not be met, organize an extension with the client | Prioritise aspects of the project that are less likely to be adapted. |
| 7 | GCP free trial credits finishing | Project would  be negatively affected as services from GCP are vital for the project | Dependant on amount of free trial credits currently held,  Low/Medium/High | Medium/High | Developer | Purchase more credits or use other services | Only use services that are needed for the project and stop all instances that are unrelated to the project |
| 8 | Docker container crashing or not working as it should | Depending on which container, the application would either not work properly or not work at all | Low | Medium | Developer | Attempt to fix the container or create a new container | Use Docker-Swarm so that if any of the containers were to fail, it would not affect the application in any way |
| 9 | Possibility of illness | Could result in a time loss as well as a loss in the quality of the project | Medium | Medium | Developer | If possible attempt to complete project and if not, contact client to make the correct arrangements | Continue with usual basic hygiene routine and ensure adequate food/drink intake is met |

**Risk Assessment Final Review**

Any updates to the original Risk Assessment are in purple.

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| Risk ID | Description | Evaluation | Likelihood | Impact level | Responsibility | Response | Control Measures | Final Reviews |
| 1. | Virtual Machine goes down or becomes inaccessible | The application can no longer run and will go offline | Low | Very High | Google Cloud Service,  Developer | Use a different Virtual Machine to recreate the infrastructure | Use infrastructure as code to quickly recreate machine,  Continually push your code to a git repository so that if this occurred, you could clone your code into your new VM and continue from there | I suffered a dire issue regarding this risk as my VM became inaccessible. This issue was dire because I had not been continually pushing my code to a git repository and I had to start my application from the beginning. I had not planned for a risk of this impact level to occur and so this resulted in me not completing my application to the level I anticipated it to be. |
| 2 | Database goes down | The application will no longer function | Low | High | Google Cloud Services | Use another instance to recreate the database | Use infrastructure as code to quickly recreate database, Push the code used for the Database to a git repository as some of the code can be used in the new instance | I did not experience this issue, however the issue I experienced regarding the VM is similar in some ways. I recommend taking the proper control measures to ensure the impact level is minimalised. |
| 3 | Unknown user may connect if Jenkins port is allowing all | The app would be compromised as the intent of the user is unknown, however the user must also have the details of the admin account | Low | High | Developer | Redo and create new admin account with more secure details | Allow specific IP addresses only and keep admin account details secure | Although I allowed all to connect to the port, I ensured my admin account details were kept secure. After I had to restart building the application I unfortunately did not get to implement Jenkins into my app, so this risk became obsolete. |
| 4 | Broken version deployed onto production | Deployed version may have issues | Medium | Medium | Developer | Revert into the most recent version that is stable | Automate tests before deployment | I did not experience any issues regarding this risk and I was unable to consider the control measures as Jenkins was not implemented. |
| 5 | Poor time management | Could result in MVP not being met which could affect the relationship with the client | Medium | Dependent on level,  Medium/High | Developer | Aim to keep relationship with client intact | Use an organised plan to ensure MVP is met, plan ahead for any issues that may occur and the amount of project time it would take up | Although I managed my general project time fairly well, I did not take into consideration the time it would take for any issues that occur. When I was faced with a profoundly serious issue, I did not have the time needed to rectify all issues before the end of the project. I would consider this poor time management and recommend that planning for similar risks in the future would be vital. |
| 6 | Adaptation the project specification | Dependant on level and time of change, could influence all aspects of the project. | Low | Medium/High | Client | If MVP could not be met, organize an extension with the client | Prioritise aspects of the project that are less likely to be adapted. | The project specification was not changed throughout the project and therefore this risk has not raised any issues. |
| 7 | GCP free trial credits finishing | Project would  be negatively affected as services from GCP are vital for the project | Dependant on amount of free trial credits currently held,  Low/Medium/High | Medium/High | Developer | Purchase more credits or use other services | Only use services that are needed for the project and stop all instances that are unrelated to the project, set the space needed for certain services to be what is necessary for your project | Although I still have a healthy amount of free trial credits remaining, I ensured that I undertook all control measures as well as making sure I am only paying for the space I need and not wasting my credits on unnecessary space. |
| 8 | Docker container crashing or not working as it should | Depending on which container, the application would either not work properly or not work at all | Low | Medium | Developer | Attempt to fix the container or create a new container | Use Docker-Swarm so that if any of the containers were to fail, it would not affect the application in any way | As a result of my Virtual Machine crashing, my new application did not get to implement Docker-Swarm, however I did not experience any issues regarding any of my docker containers. |
| 9 | Possibility of illness | Could result in a time loss as well as a loss in the quality of the project | Medium | Medium | Developer | If possible attempt to complete project and if not, contact client to make the correct arrangements | Continue with usual basic hygiene routine and ensure adequate food/drink intake is met, follow government guidelines regarding Covid-19 | I undertook the control measures and I also followed government guidelines regarding the current Covid-19 pandemic in order to reduce the possibility of illness. |