3.2 Non-Functional Requirements

3.2.1 Performance/Response time requirement

There are no standards for response time, therefore Golden Years should response within 300-500ms (Stack Overflow, 2017). Ideal page response/ loading time would be 200-300ms but 500 is still acceptable for the purpose of the project

3.2.2 Availability requirement

Application run time would be 24h, also booking system would run 24h. As application presents users with both- events information and booking system, it should be available throughout bank holidays and any other holidays.

Golden Years should be available to access from any device, connected to the internet with wire or via wi-fi.

* + 1. Recovery requirement

Recovery time after a downtime, shouldn’t be longer than 24 hours. Maximum accepted offline time - RTO (recovery time objectives) shouldn’t pass 48h. RPO (recovery point objective) ideal time shouldn’t pass 8h, as this would be the maximum accepted time when data can be lost from Golden Years (Cloud Google, 2017).

Backup for inserted transaction data should be every 5 minutes since the payment information is sensitive and will also rely on payment systems such as bank or paypal.

Recovery and availability requirement are connected in terms of creating back up server and creating back up data, to ensure fluent run of the server in the case of major disaster such as system down, power down etc.

* + 1. Robustness requirement

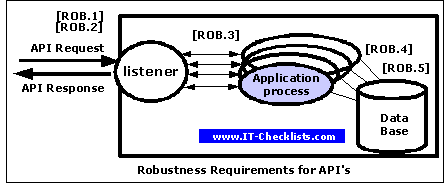
Listener should reject API requests, that are invalid.

Unexpected flood of requests (happen due to errors or attack), should be resisted by listener.

Listener or database sessions shouldn’t be able to create amount of processes exceeding or reaching maximum session limit. It should limit them instead.

Application should terminate and provide error message whether an error occurred (i.e. lack of connection to database) or application is not available (i.e. due to chosen payment method issues – bank application maintenance).

Database should be protected from reaching session limit.



* + 1. Security requirement

Security of application should be incorporated into it's developing process. Good authentication process (possibly tied to user ID and/or IP), encrypting and backing data and databases, access protection for data and databases, right handling of the session etc. Login and password should be encrypted, same as sensitive data such payments. Timeout message should pop up on the screen after 5 minutes of user inactivity. There should be confirmation timeout button, so the user is aware and can log back in before performing another action.

* + 1. Reliability requirement

In order to provide reliability of the application:

* Time between application failures should not exceed 1 per 6 months.
* Components failure should not occur more than 1 per 6 months.

Possible errors inducted by maintenance of the system, should not exceed 2 per year

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* + 1. Maintainability requirement

Golden Yeas will go through testing faze before launching. Testing would ensure discovery and elimination of possibly occurring errors (errors can occur in design, code or logic level of application).

Support after the launch would be handled by both the Support Team and the Development Team for a period of 1 month, to allow for a fast response and fixing of any core issues. After that period support queries should be handled solely by the Support Team.

* + 1. Portability requirement

Golden Years is an online based application. Therefore, it requires an internet connection to ensure proper functioning. It's not a standalone application and can' be for example downloaded and stored (ie. on USB drive).

* + 1. Usability requirement

As special purpose application, that is to server senior users, the application should have clear and simple interface. Also, to ensure clear view and ease of the usage, Golden Years content should be presented with bigger than standard font size and contain bigg, easy to see and click buttons.

* + 1. Reusability requirement

Golden Years team have not created any similar project, there are no component that can be reused in the development of the application. However, the use and modification of pre-existing web application components templates is considered.

performance - Is there some industry standard for unacceptable webapp response time? - Stack Overflow. 2017. performance - Is there some industry standard for unacceptable webapp response time? - Stack Overflow. [ONLINE] Available at: <https://stackoverflow.com/questions/184814/is-there-some-industry-standard-for-unacceptable-webapp-response-time>. [Accessed 03 October 2017].

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Google Cloud Platform. 2017. How to Design a Disaster Recovery Plan  |  Solutions  |  Google Cloud Platform. [ONLINE] Available at: <https://cloud.google.com/solutions/designing-a-disaster-recovery-plan>. [Accessed 04 October 2017]