

Project Design Phase-II
Solution Requirements (Functional & Non-functional)

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| Date | 16 October 2022 |
| Team ID | PNT2022TMID47439 |
| Project Name | A new hint to transportation - Analysis of the NYC bike share system |
| Maximum Marks | 4 Marks |

Functional Requirements:

Following are the functional requirements of the proposed solution.

| FR No. | Functional Requirement (Epic) | Sub Requirement (Story / Sub-Task) |
|--------|-------------------------------|--|
| FR-1 | user data collection: | The information is available on the official Lyft Citi Bike website to aid in research, development, visualisation, etc. These released files are where the data is gathered. |
| FR-2 | Analysis of the user data | This data is used as input for various types of visualisations, as well as for analysis and the creation of a dashboard.. |
| FR-3 | Display of data | This dashboard is used to find the customer and subscriber with gender, to find the total number of trips, and to calculate the number of bikes used by respective age groups. It also displays the top bike used with respect to trip duration the top 10 Start Station and Names with respect to customer age group. |

Non-functional Requirements:

Following are the non-functional requirements of the proposed solution.

| FR No. | Non-Functional Requirement | Description |
|--------|----------------------------|---|
| NFR-1 | Usability | This dashboard offers an easily comprehensible report that helps many locals and visitors who use bicycles to get work done and have fun. It has several advantages, including measuring distance and assisting with duties like route planning, expanding the bicycle sharing system, producing required bikes, etc. Systems for sharing bicycles may result in lower car emissions, lower energy use, better health outcomes, personal financial savings, and lower traffic and fuel use. |
| NFR-2 | Security | The need to secure data is very important as its crucial in a data analytics domain,hence access can be restricted using levels of authorization. |

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| NFR-3 | Reliability | It's always essential to have backup of data in case of corruption of server or complete wipe out In unfortunate situations |
| NFR-4 | Performance | Operational effectiveness and spatial effectiveness are the two criteria used to measure bike sharing system performance. The operational effectiveness of the bike sharing program strives to comprehend the traits of public bike riders and assess the state of the bike lanes from their point of view. The dashboard for the bike sharing system's effectiveness looks at the characteristics of bike stations and the distances between them and other amenities. The public bicycle sharing program can be improved using the evaluation's findings. |
| NFR-5 | Availability | A bicycle-sharing system is a type of shared transportation service in which bicycles are made available to individuals for short-term use at a low or no cost. The programs themselves include both docking and dockless systems, with docking systems allowing users to borrow a bike from a dock and return it to another node or dock within the system — and dockless systems providing a node-free system based on smart technology. Systems in either format may use smartphone web mapping to locate available bikes and docks. |
| NFR-6 | Scalability | This analysis provides evidence of bike sharing systems' potential contribution to a more resilient transportation system, as they can quickly provide alternative transportation options to urban residents. As more data becomes available, particularly in other areas with similarly comprehensive bike sharing systems, this analysis will be able to provide a clearer picture of the role of this mode of transportation in these emergency situations and provide more accurate results. With increasing scale there shouldn't be any compromises |