**Requirement Analysis:**

Functional Requirements:

1. Application

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| **Requirement#: F1.1** | **Requirement Type:** Functional | **Use Case:** |
| **Description:** The application should be able to locate the user in a very small radius of approximately 2 – 3 meters. | | |
| **Rationale:** Locate the user | | |
| **Source:** Application | | |
| **Fit Criterion:** The exact location of a user is determined | | |
| **Dependencies:** None | | |
| **Rank of importance:** Critical | | |
| **Supporting Materials:** None | | |
| **History:** Created by Mir Mohsin Ali 08/10/2017 | | |

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| **Requirement#: F1.2** | **Requirement Type:** Functional | **Use Case:** |
| **Description:** Find out the shortest path the user can walk on to reach the target building. | | |
| **Rationale:** Find the shortest path. | | |
| **Source:** Application | | |
| **Fit Criterion:** The shortest path to the destination is determined. | | |
| **Dependencies:** The shortest path to the destination must exist. | | |
| **Rank of importance:** Critical | | |
| **Supporting Materials:** None | | |
| **History:** Created by Mir Mohsin Ali 08/10/2017 | | |

1. User Interface

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| **Requirement#: F2.1** | **Requirement Type:** Functional | **Use Case:** |
| **Description:** A search option should allow the user to input a building number. | | |
| **Rationale:** Locate the user | | |
| **Source:** User | | |
| **Fit Criterion:** The exact location of a user is determined. | | |
| **Dependencies:** None | | |
| **Rank of importance:** Critical | | |
| **Supporting Materials:** None | | |
| **History:** Created by Mir Mohsin Ali 08/10/2017 | | |



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| **Requirement#: F2.2** | **Requirement Type:** Functional | **Use Case:** |
| **Description:** A direction indicator should point towards the destination. | | |
| **Rationale:** An indicator pointing towards destination. | | |
| **Source:** User Interface | | |
| **Fit Criterion:** A pointer towards the destination displayed on the screen. | | |
| **Dependencies:** A destination must exist to be pointed towards. | | |
| **Rank of importance:** Critical | | |
| **Supporting Materials:** None | | |
| **History:** Created by Mir Mohsin Ali 08/10/2017 | | |



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| **Requirement#: F2.3** | **Requirement Type:** Functional | **Use Case:** |
| **Description:** The direction indicator should move with respect to the movements of the phone. | | |
| **Rationale:** Direction indicator moving with respect to location of user and destination. | | |
| **Source:** User Interface | | |
| **Fit Criterion:** A pointer towards the destination displayed on the screen. | | |
| **Dependencies:** A destination must exist to be pointed towards. | | |
| **Rank of importance:** Critical | | |
| **Supporting Materials:** None | | |
| **History:** Created by Mir Mohsin Ali 08/10/2017 | | |

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| **Requirement#: F2.4** | **Requirement Type:** Functional | **Use Case:** |
| **Description:** There should be a distance indicator which shows the distance between the user and the destination. | | |
| **Rationale:** Distance indicator showing distance between user and destination. | | |
| **Source:** User Interface | | |
| **Fit Criterion:** An indicator showing the distance. | | |
| **Dependencies:** A destination must exist to calculate the distance. | | |
| **Rank of importance:** Critical | | |
| **Supporting Materials:** None | | |
| **History:** Created by Mir Mohsin Ali 08/10/2017 | | |



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| **Requirement#: F2.5** | **Requirement Type:** Functional | **Use Case:** |
| **Description:** There should be a distance indicator which shows the distance between the user and the destination. | | |
| **Rationale:** Distance indicator showing distance between user and destination. | | |
| **Source:** User Interface | | |
| **Fit Criterion:** An indicator showing the distance. | | |
| **Dependencies:** A destination must exist to calculate the distance. | | |
| **Rank of importance:** Critical | | |
| **Supporting Materials:** None | | |
| **History:** Created by Mir Mohsin Ali 08/10/2017 | | |



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| **Requirement#: F2.6** | **Requirement Type:** Functional | **Use Case:** |
| **Description:** The value on the distance indicator should change with respect to the movements of the phone. | | |
| **Rationale:** Change in value on the distance indicator. | | |
| **Source:** User Interface | | |
| **Fit Criterion:** Distance changing on the indicator. | | |
| **Dependencies:** The distance should change to calculate the new distance. | | |
| **Rank of importance:** Critical | | |
| **Supporting Materials:** None | | |
| **History:** Created by Mir Mohsin Ali 08/10/2017 | | |



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| **Requirement#: F2.7** | **Requirement Type:** Functional | **Use Case:** |
| **Description:** A label should be showing the estimated time of arrival to the target building and the estimated time left to reach the target building. | | |
| **Rationale:** A label showing the estimated time of arrival. | | |
| **Source:** User Interface | | |
| **Fit Criterion:** An estimated time of arrival should be calculated and displayed. | | |
| **Dependencies:** There should be a distance to calculate estimated time of arrival. | | |
| **Rank of importance:** Critical | | |
| **Supporting Materials:** None | | |
| **History:** Created by Mir Mohsin Ali 08/10/2017 | | |



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| **Requirement#: F2.8** | **Requirement Type:** Functional | **Use Case:** |
| **Description:** When the camera of the phone is pointed towards the target building, there should be a label with the building name on it where the building is located. | | |
| **Rationale:** A label identifying the building searched for. | | |
| **Source:** User Interface | | |
| **Fit Criterion:** Building name identified and displayed. | | |
| **Dependencies:** A building should be searched to identify that building. | | |
| **Rank of importance:** Critical | | |
| **Supporting Materials:** None | | |
| **History:** Created by Mir Mohsin Ali 08/10/2017 | | |



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| **Requirement#: F2.9** | **Requirement Type:** Functional | **Use Case:** |
| **Description:** There should also be a mini map on the corner of the screen while navigating the user to the target building to show the complete or the leftover path with the user in the center. | | |
| **Rationale:** A minimap showing the path to the destination | | |
| **Source:** User Interface | | |
| **Fit Criterion:** Path calculated and displayed on minimap | | |
| **Dependencies:** There should be a destination to calculate and display the path to it. | | |
| **Rank of importance:** Critical | | |
| **Supporting Materials:** None | | |
| **History:** Created by Mir Mohsin Ali 08/10/2017 | | |



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| **Requirement#: F2.10** | **Requirement Type:** Functional | **Use Case:** |
| **Description:** The mini map should be able to show the direction the user is facing on the path shown. | | |
| **Rationale:** Direction of user shown on minimap. | | |
| **Source:** User Interface | | |
| **Fit Criterion:** User’s direction determined and displayed. | | |
| **Dependencies:** A search should be active to display the direction of user. | | |
| **Rank of importance:** Critical | | |
| **Supporting Materials:** None | | |
| **History:** Created by Mir Mohsin Ali 08/10/2017 | | |

1. Search Function:

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| **Requirement#: F3.1** | **Requirement Type:** Functional | **Use Case:** |
| **Description:** The search function must be able to locate the accurate building. | | |
| **Rationale:** Search functions accurately locates the destination. | | |
| **Source:** Search function | | |
| **Fit Criterion:** Destination located accurately. | | |
| **Dependencies:** A search should be made to locate the destination. | | |
| **Rank of importance:** Critical | | |
| **Supporting Materials:** None | | |
| **History:** Created by Mir Mohsin Ali 09/10/2017 | | |



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| **Requirement#: F3.2** | **Requirement Type:** Functional | **Use Case:** |
| **Description:** An autofill functionality should be available which shows previous searches or most popular searches. | | |
| **Rationale:** Autofill showing previous and popular searches. | | |
| **Source:** Search function | | |
| **Fit Criterion:** Autofill displays precious and popular searches. | | |
| **Dependencies:** The search bar should be selected to display autofill options. | | |
| **Rank of importance:** Critical | | |
| **Supporting Materials:** None | | |
| **History:** Created by Mir Mohsin Ali 09/10/2017 | | |



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| **Requirement#: F3.2** | **Requirement Type:** Functional | **Use Case:** |
| **Description:** The autofill for different locations should also show their respective distances from the user’s position on the right side of the autofill box. | | |
| **Rationale:** Distances to autofill options also displayed. | | |
| **Source:** Search function | | |
| **Fit Criterion:** Autofill displays distances of the options on the right side. | | |
| **Dependencies:** The search bar should be selected to display autofill options. | | |
| **Rank of importance:** Critical | | |
| **Supporting Materials:** None | | |
| **History:** Created by Mir Mohsin Ali 09/10/2017 | | |