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| Use Case Name | 01: Campus Pathfinding |
| Priority | HIGH |
| Participating Actors | User |
| Goal | To find a Path between two locations on campus |
| Trigger | User selects a starting point and an ending point |
| Precondition | User has selected two points on campus |
| Postcondition | A traversable path is drawn between the two points |
| Basic Flow | 1. User selects a starting point: a building, door, classroom, or  other selectable map location  2. User selects an ending point: a building, door, classroom, or  other selectable map location  3. User is shown a traversable path  a. User is shown shortest path (default)  b. User has previously hit the Disabled User button and is  shown a path which does not use stairs.  c. User has previously hit the Indoor Path button, and is shown  a path that is as indoor as possible  d. User has previously hit the Outdoor Path button, and is  shown a path that is as outdoor as possible |
| Exceptions | 1. *No path can be calculated between these two points*: User is notified no path exists  2. *No stairless path can be calculated these two points*: User is  notified that no stairless path exists. |
| Qualities | Intuitive, full path rendered in ≈ 5 seconds. |
| Constraints | 1. User must select two distinct points.  2. User must be shown a traversable path.  3. Disabled Users must not be directed to stairwells. |
| Includes | none |
| Extends | 02: Location Selection |
| Corresponding  User Stories | 5, 6, 7, 8 |

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| Use Case Name | 02: Location Selection |
| Priority | HIGH |
| Participating Actors | User |
| Goal | To select a building, door, classroom, or other selectable map location to receive more information about it, or to use it as a pathing waypoint. |
| Trigger | User clicks on a selectable location |
| Precondition | User is at the map overlay screen (interior or exterior) |
| Postcondition | The location is highlighted. Information and pathfinding buttons are shown. |
| Basic Flow | 1. User is at the map overlay screen (interior or exterior)  2. User selects a building, door, classroom, or other selectable  map location by either a mouse click or a touch event.  3. The point is highlighted. A popup is shown which displays  information about the selected object, along with buttons to use  the point in forming a path, or viewing the interior map (if  possible). |
| Exceptions | 1. *The clicked location is not selectable:* system takes no action.  2. *Information about the location cannot be found:* A generic U of A  logo is shown instead of information. |
| Qualities | Intuitive, location selection rendered in ≈1 second. |
| Constraints | 1. Location must be selectable. |
| Includes | none |
| Extends | none |
| Corresponding  User Stories | 3, 4 |

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| Use Case Name | 03: Current Location |
| Priority | HIGH |
| Participating Actors | User |
| Goal | To view my current location on the exterior map |
| Trigger | User clicks the ‘Find My Location’ button |
| Precondition | User is at the exterior map overlay screen |
| Postcondition | User is shown current (approximate) location with a blue dot |
| Basic Flow | 1. User Clicks ‘Find My Location’ button  2. Display the location with a blue dot  a. If the user is on a mobile device and has given the App  access to location services, we will use Google Maps to  approximate the location of the mobile device using its built in  GPS.  b. If the user is on a computer, we will use Google Maps to  approximate location of the computer by router IP. |
| Exceptions | 1. *User cannot be located*: User is shown a message describing that they cannot be located. |
| Qualities | Intuitive, location found and rendered in ≈ 2 seconds |
| Constraints | 1. User must have location services turned on. |
| Includes | none |
| Extends | none |
| Corresponding  User Stories | 1 |

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| Use Case Name | 04: Interior Map Viewing |
| Priority | HIGH |
| Participating Actors | User |
| Goal | To view the interior floors, rooms, doors, emergency exits, and services of a building |
| Trigger | User selects a building and click ‘View Interior’ button |
| Precondition | User is at the Exterior Map overlay |
| Postcondition | User is presented with the Interior Map overlay |
| Basic Flow | 1. User selects a building and then presses the ‘View Interior’  button.  2. User is shown a navigatable Interior Map overlay, which shows  the floors, rooms, doors, emergency exits, and services of the  selected building. |
| Exceptions | 1. *System cannot find Interior Map*: A message is returned to the user saying the interior map can’t be located |
| Qualities | Intuitive, Structured, map and 3d drawing rendered in ≈ 5 seconds. |
| Constraints | 1. Building must have interior map overlay.  2. Building must be selectable from exterior screen. |
| Includes | none |
| Extends | 02: Location Selection |
| Corresponding  User Stories | 2 |

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| Use Case Name | 05: Alteration of Path |
| Priority | Medium |
| Participating Actors | User |
| Goal | To modify the presented path to allow for waypoints (stops) or detours |
| Trigger | User clicks the ‘Add Waypoint’ button. |
| Precondition | User is viewing a Path between at least two points, which has  been drawn by the system. |
| Postcondition | User’s waypoint is added into the path and a new path is  calculated and presented which incorporates the waypoint or detour. |
| Basic Flow | 1. User clicks the ‘Add Waypoint’ button.  2. User clicks a selectable location.  3. The location is added to the route and the path is redrawn.  a. User may reorder the route waypoints, if desired. |
| Exceptions | 1. *The clicked location is not selectable:* system takes no action. |
| Qualities | Intuitive, Structured, new path found and rendered in ≈ 5 seconds. |
| Constraints | 1. Location must be selectable.  2. User must be shown a traversable path. |
| Includes | none |
| Extends | 01: Campus Pathfinding |
| Corresponding  User Stories | 9 |

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| Use Case Name | 06: Easily Add Service Waypoints |
| Priority | HIGH |
| Participating Actors | User |
| Goal | To add coffee or other service waypoints to my current path, automatically. |
| Trigger | User clicks the ‘Add Service Waypoint’ button and selects a service, such as coffee, from the popup list. |
| Precondition | User is viewing a Path between at least two points, which has  been drawn by the system. |
| Postcondition | User’s service waypoint is automatically added to the path. |
| Basic Flow | 1. User clicks the ‘Add Service Waypoint’ button.  2. A popup list showing the selectable services appears.  3. User selects 1 or more services.  4. Service waypoints are automatically added to the route and the  path is redrawn.  a. User may reorder the route waypoints, if desired. |
| Exceptions | *1) Desired service cannot be found:* User is notified. |
| Qualities | Intuitive, Structured |
| Constraints | 1. The nearest service should be added to the Path. |
| Includes | none |
| Extends | 01: Campus Pathfinding |
| Corresponding  User Stories | 10 |