**2.4 Assumptions, dependencies and constraints**

[D1] - Registration is via the phone number.

[D2] - The device must have stable access to the Internet to establish a user status and queue calculation.

[D3] - The user goes to the selected shop according to the notification on the mobile device.

[D4] - The user should follow the rules that will be notified on the device (i.e. social distance, the presence of a mask, allocated time for purchase).

[D5] - People who cannot use the device should easily integrate into the queue by registering on the spot.

[D6] - The customer will enter/exit the store using a QR code.

[D7] - Store owners will have access to an expanded version of the app for more control and tracking of the flow of customers.

[D8] – The user should denote the supposed departments to visit.

[D9] – Store owner must specify the area of the shop and departments.

[D10] – The ticket given by machine will contain information about the customer arrival/departure time.

[D11] - Store owner has extended functionality, which includes features to monitor the human flow in the shop.

[D12] – The user is going to the store by shortest path.

[D13] – If the user is late more than 10 minutes (according to his/her appointed time) he/she is removing from the queue.

[D14] – It is possible to cancel the booking, if user plans are changed.

[D15] – The location of the user is obtained by GPS. The locations of the stores are retrieved by API.

For the personal use of the application, the user must have a mobile phone or a tablet, if he doesn’t want to install the app or he doesn’t have the phone/tablet, then he can use the store machine. Again, in case of personal use the device must match the following characteristics: 2G/3G/4G/802.11 (a/b/g/n/ac) Internet connection, it’s welcomed if this device had GPS function enabled.

The device of common use must be connected to a permanent power supply. Device of common use must have the touch screen to provide a communication interface, also it must have facilities to print tickets.

For the personnel staff access, there must be any device (a PC, a laptop, a tablet, etc.) that has a stable connection to the Internet. Also, the application uses the Yandex Maps API that provides more lightweight architecture.