**Drivers:**

**Statuses: Open, To Do, In progress, Done, Closed**

**Driver NO 1.1**

**Categorization**

|  |  |
| --- | --- |
| **Driver Name** | Internet Connection availability when login |
| **ID** | AD.01.RELIABILITY |
| **Status** | Open |
| **Priority** | High |

**Responsibilities**

|  |  |
| --- | --- |
| **Supporter** |  |
| **Sponsor** |  |
| **Author** | Arian Ajdari |
| **Inspector** | Rodrigo Falcao |

|  |  |  |
| --- | --- | --- |
| **Description** | | **Quantification** |
| **Environment** | Application is installed. System is running in normal mode. Internet is available. | Previous logins >= 0;  Mode = Normal |
| **Stimulus** | 1. User logs in | Data size ≤ 1 KB |
| **Response** | User is transferred to the home screen. | Response time ≤ 1 sec |

**Driver NO 1.2**

**Categorization**

|  |  |
| --- | --- |
| **Driver Name** | Internet Connection availability when creating content |
| **ID** | AD.02.RELIABILITY |
| **Status** | Open |
| **Priority** | High |

**Responsibilities**

|  |  |
| --- | --- |
| **Supporter** |  |
| **Sponsor** |  |
| **Author** | Arian Ajdari |
| **Inspector** | Rodrigo Falcao |

|  |  |  |
| --- | --- | --- |
| **Description** | | **Quantification** |
| **Environment** | Application is installed. Application is connected to Carplay. Internet connection is available | Previous starts >= 0;  Mode = Normal |
| **Stimulus** | 1. User tells Siri to Create Content (Notes) |  |
| **Response** | The data is locally saved and delivered to JD database |  |

**Driver NO 1.2**

**Categorization**

|  |  |
| --- | --- |
| **Driver Name** | Internet Connection is not availabile when creating content |
| **ID** | AD.02.RELIABILITY |
| **Status** | Open |
| **Priority** | High |

**Responsibilities**

|  |  |
| --- | --- |
| **Supporter** |  |
| **Sponsor** |  |
| **Author** | Arian Ajdari |
| **Inspector** | Rodrigo Falcao |

|  |  |  |
| --- | --- | --- |
| **Description** | | **Quantification** |
| **Environment** | Application is installed. Application is connected to Carplay. Internet connection is available | Previous starts >= 0;  Mode = Normal |
| **Stimulus** | 1. User tells Siri to Create Content (Notes) |  |
| **Response** | The data is locally saved and delivered to JD database whenever Internet connection becomes available |  |

**Driver NO 1.3**

**Categorization**

|  |  |
| --- | --- |
| **Driver Name** | Internet Connection availability when receiving Notes |
| **ID** | AD.03.RELIABILITY |
| **Status** | Open |
| **Priority** | High |

**Responsibilities**

|  |  |
| --- | --- |
| **Supporter** |  |
| **Sponsor** |  |
| **Author** | Arian Ajdari |
| **Inspector** | Rodrigo Falcao |

|  |  |  |
| --- | --- | --- |
| **Description** | | **Quantification** |
| **Environment** | Application is installed and connected to Carplay. Internet connection is available. | Previous starts >= 0;  Mode = Normal |
| **Stimulus** | 1. User initiates receiving Notifications operation |  |
| **Response** | Application receives notifications and read over Siri for the User |  |

**Driver NO 2.1**

**Categorization**

|  |  |
| --- | --- |
| **Driver Name** | Data Correctness when Internet is available |
| **ID** | AD.02.FUNCTIONAL SUITABILITY |
| **Status** | Open |
| **Priority** | High |

**Responsibilities**

|  |  |
| --- | --- |
| **Supporter** |  |
| **Sponsor** |  |
| **Author** | Talant Asankozhoev |
| **Inspector** | Rodrigo Falcao |

|  |  |  |
| --- | --- | --- |
| **Description** | | **Quantification** |
| **Environment** | User is logged in. Application is running normally. Internet connection is available. | Previous starts >= 0;  Internet Availability = TRUE |
| **Stimulus** | One of the below operations (related with JD data) is initiated:   * User creates note * Application receives notes |  |
| **Response** | Data exchange using JD API happened. As a result User received latest data from JD DB or data is correctly saved in JD DB. |  |

**Driver NO 2.2**

**Categorization**

|  |  |
| --- | --- |
| **Driver Name** | Data Correctness when Internet is NOT available |
| **ID** | AD.02.FUNCTIONAL SUITABILITY |
| **Status** | Open |
| **Priority** | High |

**Responsibilities**

|  |  |
| --- | --- |
| **Supporter** |  |
| **Sponsor** |  |
| **Author** | Talant Asankozhoev |
| **Inspector** | Rodrigo Falcao |

|  |  |  |
| --- | --- | --- |
| **Description** | | **Quantification** |
| **Environment** | User is logged in. Application is running normally. Internet connection is NOT available | Previous starts >= 0;  Internet Availability = TRUE |
| **Stimulus** | One of the below operations (related with JD data) is initiated:   * User creates note * Application receives notes |  |
| **Response** | Data is saved locally and marked “to be synced” as soon as Internet connection is there. |  |

**Driver NO 3**

**Categorization**

|  |  |
| --- | --- |
| **Driver Name** | Geolocation Data is Complete |
| **ID** | AD.03.FUNCTIONAL SUITABILITY |
| **Status** | Open |
| **Priority** | High |

**Responsibilities**

|  |  |
| --- | --- |
| **Supporter** |  |
| **Sponsor** |  |
| **Author** | Arian Ajdari |
| **Inspector** | Rodrigo Falcao |

|  |  |  |
| --- | --- | --- |
| **Description** | | **Quantification** |
| **Environment** | User is logged in and has enabled geolocation capabilities. System is running normally. | Previous starts >= 0;  Geolocation = TRUE |
| **Stimulus** | User performs one of below operations which requires geolocation data:   * User creates note * Application receives notes |  |
| **Response** | For every operation requiring geolocation data, the geolocation is tagged successfully and normal execution resumes. | Coordinates accuracy < 5m |

**Driver NO 4.1**

**Categorization**

|  |  |
| --- | --- |
| **Driver Name** | Data Resource Utilization for upload |
| **ID** | AD.04.PERFORMANCE EFFICIENCY |
| **Status** | Open |
| **Priority** | High |

**Responsibilities**

|  |  |
| --- | --- |
| **Supporter** |  |
| **Sponsor** |  |
| **Author** | Talant Asankozhoev |
| **Inspector** | Rodrigo Falcao |

|  |  |  |
| --- | --- | --- |
| **Description** | | **Quantification** |
| **Environment** | User is logged in and has internet access. System is running normally. | Previous starts >= 0;  Internet Availability = TRUE  **144Kb/s ≤** Internet connection bandwidth **≤ 1Mb/s** |
| **Stimulus** | User performs one of below operations which requires transfer of the data over the internet:   * User creates note | Data size ≤ 1 KB |
| **Response** | All information is transferred successfully to the JD Database. | Response time ≤ 1 sec |

**Driver NO 4.2**

**Categorization**

|  |  |
| --- | --- |
| **Driver Name** | Data Resource Utilization for download |
| **ID** | AD.04.PERFORMANCE EFFICIENCY |
| **Status** | Open |
| **Priority** | High |

**Responsibilities**

|  |  |
| --- | --- |
| **Supporter** |  |
| **Sponsor** |  |
| **Author** | Talant Asankozhoev |
| **Inspector** | Rodrigo Falcao |

|  |  |  |
| --- | --- | --- |
| **Description** | | **Quantification** |
| **Environment** | User is logged in and has internet access. System is running normally. | Previous starts >= 0;  Internet Availability = TRUE  **144Kb/s ≤** Internet connection bandwidth **≤ 1Mb/s** |
| **Stimulus** | User performs one of below operations which requires transfer of the data over the internet:   * Application receives notes | Data size ≤ 10 KB |
| **Response** | All information is received successfully from the JD Database | Response time ≤ 1 sec |

**Driver NO 5.1**

**Categorization**

|  |  |
| --- | --- |
| **Driver Name** | PRODUCT MAINTAINABILITY |
| **ID** | AD.05.MAINTAINABILITY |
| **Status** | Open |
| **Priority** | Low |

**Responsibilities**

|  |  |
| --- | --- |
| **Supporter** |  |
| **Sponsor** |  |
| **Author** | Arian Ajdari |
| **Inspector** | Rodrigo Falcao |

|  |  |  |
| --- | --- | --- |
| **Description** | | **Quantification** |
| **Environment** | Development Environment (XCode) |  |
| **Stimulus** | Development Activity |  |
| **Response** | Complete Architecture and Features should be developed in such a way to satisfy the following criteria:   * Modularity | For each User screen should have 1 View, 1 Delegate, 1 Controller classes. |

**Driver NO 5.2**

**Categorization**

|  |  |
| --- | --- |
| **Driver Name** | PRODUCT MAINTAINABILITY |
| **ID** | AD.05.MAINTAINABILITY |
| **Status** | Open |
| **Priority** | Low |

**Responsibilities**

|  |  |
| --- | --- |
| **Supporter** |  |
| **Sponsor** |  |
| **Author** | Arian Ajdari |
| **Inspector** | Rodrigo Falcao |

|  |  |  |
| --- | --- | --- |
| **Description** | | **Quantification** |
| **Environment** | Development Environment (XCode) |  |
| **Stimulus** | Development Activity |  |
| **Response** | Complete Architecture and Features should be developed in such a way to satisfy the following criteria:   * Reusability | Generalization of classes should be used actively. For each action seperate method should be developed, so that it could be reused later. |

**Driver NO 5.3**

**Categorization**

|  |  |
| --- | --- |
| **Driver Name** | PRODUCT MAINTAINABILITY |
| **ID** | AD.05.MAINTAINABILITY |
| **Status** | Open |
| **Priority** | Low |

**Responsibilities**

|  |  |
| --- | --- |
| **Supporter** |  |
| **Sponsor** |  |
| **Author** | Arian Ajdari |
| **Inspector** | Rodrigo Falcao |

|  |  |  |
| --- | --- | --- |
| **Description** | | **Quantification** |
| **Environment** | Development Environment (XCode) |  |
| **Stimulus** | Development Activity |  |
| **Response** | Complete Architecture and Features should be developed in such a way to satisfy the following criteria:   1. Analysability | Each software component should be documented properly. |

**Decisions:**

<https://www.hackingwithswift.com/example-code/system/how-to-make-an-action-repeat-using-timer>

AD01

|  |  |
| --- | --- |
| Name | Check Internet connection availability |
| ID | DD.01 |
| Explanation | User actions or Periodically running jobs requiring internet connection are always preceded by “checking Internet connection availabality” utility function. |

|  |  |
| --- | --- |
| Pros | Cons |
| * Very fast responses, that leads to good user experience * Reliable, because we dont need to preprocess and send data | * Extra function call for Internet connection availability check |
| Assumptions&Quantifications | Trade-offs |
| * Internet connection availability check run successfully |  |

AD02

|  |  |
| --- | --- |
| Name | Check for last modified date |
| ID | DD.02 |
| Explanation | In order to be sure for the correctness of data, we always check for last modify date from JD API. |

|  |  |
| --- | --- |
| Pros | Cons |
| * Very fast responses, that leads to good user experience * Reliable, because we don’t need to preprocess and send/receive data | * Extra API call for last modify date check * Additional implementation |
| Assumptions&Quantifications | Trade-offs |
| * Internet connection is available. * Little impact on app performance | * ?Maintainability |

|  |  |
| --- | --- |
| Name | Always Pull data using JD API |
| ID | DD.03 |
| Explanation | In order to be sure of the correctness of data, we always pull data using JD API. |

|  |  |
| --- | --- |
| Pros | Cons |
| * Reliable * Correct | * Extra API call * Additional implementation * Increased Data Consumption |
| Assumptions&Quantifications | Trade-offs |
| * Internet connection is available. * Data is reliable and correct | * Performance |

|  |  |
| --- | --- |
| Name | Create local DB |
| ID | DD.04 |
| Explanation | * Data pulled from JD API needs to be stored on the phone * Data that needs to be send to the JD API is locally stored on the phone. |

|  |  |
| --- | --- |
| Pros | Cons |
| * Increased Performance | * Increased App complexity * Additional implementation * Increased Data Consumption (Internet) * Requires More Storage on the Phone |
| Assumptions&Quantifications | Trade-offs |
| * Provides groundwork for data correctness. * Data is reliable and correct | * Maintainability |

|  |  |
| --- | --- |
| Name | Create file to save data in JSON format |
| ID | DD.05 |
| Explanation | Data pulled from JD API needs to be stored on the phone in appropriate format. |

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| --- | --- |
| Pros | Cons |
| * Storage Efficient | * Data manipulation is more complicated in respect to Database * File growth could handicap performance in respect to data manipulation |
| Assumptions&Quantifications | Trade-offs |
| * Provides groundwork for data correctness. * Data is reliable and correct | * Maintainability |

AD.03

|  |  |
| --- | --- |
| Name | Check if GPS is enabled |
| ID | DD.06 |
| Explanation | When user initiates an operation, that requires GPS location information, Application should check if GPS is enabled. |

|  |  |
| --- | --- |
| Pros | Cons |
| * Good user experience. We only check if GPS is enabled on device and ask user immediately to enable. | * Extra function call * Additional implementation |
| Assumptions&Quantifications | Trade-offs |
| * Device has GPS module | * Maintainability * Performance |

|  |  |
| --- | --- |
| Name | Tagging GPS coordinates |
| ID | DD.07 |
| Explanation | If the user proceeds with the operation that requires GPS info, then get GPS location and save together with other data. |

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| --- | --- |
| Pros | Cons |
| * GPS data can be used later | * Extra function call |
| Assumptions&Quantifications | Trade-offs |
| * GPS info acquired synchronously within the main operation |  |

AD.04

|  |  |
| --- | --- |
| Name | Check Internet connection type |
| ID | DD.08 |
| Explanation | When user initiates an operation, that requires Internet connection, Application should check the connection type. |

|  |  |
| --- | --- |
| Pros | Cons |
| * Good user experience. * Data transfer efficiency | * Extra function call * Additional implementation |
| Assumptions&Quantifications | Trade-offs |
| * Device has at least 3G support | * Maintainability |

|  |  |
| --- | --- |
| Name | Provide option for user in Settings for data uploading ways |
| ID | DD.09 |
| Explanation | User sets the data usage ways over the Internet in the Settings |

|  |  |
| --- | --- |
| Pros | Cons |
| * Good user experience. * Data transfer efficiency | * Increased complexity of the App * Additional implementation |
| Assumptions&Quantifications | Trade-offs |
|  | * Maintainability * Performance |

AD.05

|  |  |
| --- | --- |
| Name | Follow the official Apple guide for developers |
| ID | DD.10 |
| Explanation | <https://help.apple.com/xcode/mac/current/#/dev8b4250b57> |

|  |  |
| --- | --- |
| Pros | Cons |
| * Good Application maintenance |  |
| Assumptions&Quantifications | Trade-offs |
| * Team is not experienced * All documentation and source code is transferred to the client |  |

AD.06

|  |  |
| --- | --- |
| Name | Use Apple Software development guidelines concerning Carplay |
| ID | DD.11 |
| Explanation | TODO |

|  |  |
| --- | --- |
| Pros | Cons |
| * Limited scope of possible features * Saving time | * Limitations in creativeness |
| Assumptions&Quantifications | Trade-offs |
| * Apple imposes strict guidelines for developments of App for Carplay |  |

|  |  |
| --- | --- |
| Name | Focus on “Messaging and VoIP” Application type |
| ID | DD.12 |
| Explanation |  |

|  |  |
| --- | --- |
| Pros | Cons |
| * Limited scope of possible features | * Limitations in creativeness |
| Assumptions&Quantifications | Trade-offs |
| * Apple imposes strict guidelines for developments of App for Carplay * Only subset of the “Messaging and VoIP” libraries used |  |

**Driver Solutions**

|  |  |
| --- | --- |
| Driver Name | Internet connection availability when login |
| Driver ID | AD.01.RELIABILITY |
| Steps | * + - 1. The application is started and ready for entering login credentials       2. Invoke the “Internet connection check” function       3. Inform user if Internet connection is not available       4. Proceed with login |
| Related Design Decisions | DD01. Check Internet connection availability |

|  |  |  |
| --- | --- | --- |
| Pros & Opportunities | | Cons & Risks |
| * User is informed if Internet is not available on beforehand even before filling user credentials or pressing Login button * There is no extra Login function invocation when Internet is not available | | * Extra function call |
| Assumptions & Quantifications | | Trade-offs |
| * User is informed appropriately | |  |
| Manifestation Links |  | |