**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 available when creating content |
| **ID** | AD.03.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.04.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.05.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>

AD01-04

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| --- | --- |
| 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 |  |

AD05

|  |  |
| --- | --- |
| 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. |

|  |  |
| --- | --- |
| 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 |  |

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| --- | --- |
| 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 |  | |

|  |  |
| --- | --- |
| Driver Name | Internet connection availability when creating content |
| Driver ID | AD.02.RELIABILITY |
| Steps | * + - 1. The application is started, user is logged in and connected to Carplay       2. User tells Siri to create content       3. Application invokes the “Internet connection check” function       4. Proceed with creating content |
| Related Design Decisions | DD01. Check Internet connection availability |

|  |  |
| --- | --- |
| Driver Name | Internet connection is not available when creating content |
| Driver ID | AD.03.RELIABILITY |
| Steps | * + - 1. The application is started, user is logged in and connected to Carplay       2. User tells Siri to create content       3. Application invokes the “Internet connection check” function       4. Inform user that Internet connection is not available and that content will be saved locally only       5. Proceed with creating content |
| Related Design Decisions | DD01. Check Internet connection availability |

|  |  |
| --- | --- |
| Driver Name | Internet Connection availability when receiving Notes |
| Driver ID | AD.04.RELIABILITY |
| Steps | * + - 1. The application is started, user is logged in and connected to Carplay       2. User tells Siri to check notes       3. Application invokes the “Internet connection check” function       4. Proceed with creating content |
| Related Design Decisions | DD01. Check Internet connection availability |

|  |  |
| --- | --- |
| Driver Name | Data Correctness when Internet is available |
| Driver ID | AD.05.FUNCTIONAL SUITABILITY |
| Steps | * + - 1. User is logged in. Application is running normally. Internet connection is available       2. User tells Siri to check content       3. Application invokes the last modify dates of the contents.       4. Proceed with reading content |
| Related Design Decisions | DD02. Check for last modified date |

|  |  |
| --- | --- |
| Driver Name | Data Correctness when Internet is NOT available |
| Driver ID | AD.06.FUNCTIONAL SUITABILITY |
| Steps | * + - 1. User is logged in. Application is running normally. Internet connection is NOT available       2. User tells Siri to check content       3. Application informs that Internet is not available.       4. Proceed with reading last received contents |
| Related Design Decisions | DD02. Check for last modified date |

|  |
| --- |
| Data Correctness when Internet is available |
| AD.05.FUNCTIONAL SUITABILITY |