***Appnext QA exercise Test Plan***

*Objectives –*

Test UI, Functionality and Performance of Appnext app on various Android mobile devices running on APIs 14-26

1. Prerequisite - Test Libraries and Dependencies presence
   1. Update from SDK manager for Emulator.
   2. Update at Google Play store on device
   3. Install the Appnext app
   4. Check that all the permissions are present and they are being asked for at run time.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Test | Required libraries and dependencies | Present | Not Present | Tested Device | Tested API |
| Presence of required libraries and dependencies | Method 1 – Define in the root level gradle of the project.  In the “Project integration App”  allprojects {  repositories {  jcenter()  maven { url "http://dl.appnext.com/" }  }  }  In the module gradle (Module App)  dependencies {  compile 'com.appnext.sdk:ads:2.+' // Mandatory  compile 'com.google.android.gms:play-services-basement:10.2.0'// Mandatory  compile 'com.google.android.gms:play-services-location:10.2.0'// Mandatory  } |  |  |  |  |
|  | Method 2 - Manual installation  AppnextAndroidSDK.aar extracted to your "libs"  In the “Project integration App” added  allprojects {  repositories {  jcenter()  flatDir {  dirs 'libs'  }  }  }  dependencies {  compile name:'AppnextAndroidSDK', ext:'aar' // Mandatory  compile 'com.google.android.gms:play-services-basement:10.2.0'// Mandatory  compile 'com.google.android.gms:play-services-location:10.2.0'// Mandatory  }  ProGuard Configuration  -keep class com.appnext.\*\* { \*; }  -dontwarn com.appnext.\*\* |  |  |  |  |

1. Check for App Permissions and Services presence

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Test | Test stages | Present | Not Present | Tested Device | Tested API |
| Latest version of Google Play Services integrated in your app. | * Update from SDK manager for Emulator. * Update at Google Play store on device | Up to date |  |  |  |
| Permissions are present in the Manifest | * android.gms.permission.ACTIVITY\_RECOGNITION * android.permission.ACCESS\_WIFI\_STATE * android.permission.READ\_PHONE\_STATE * android.permission.ACCESS\_FINE\_LOCATION * android.permission.ACCESS\_COARSE\_LOCATION * android.permission.GET\_TASKS * android.permission.REAL\_GET\_TASKS * android.permission.PACKAGE\_USAGE\_STATS   android.permission.WRITE\_EXTERNAL\_STORAGE  android.permission.CAMERA  android.permission.BLUETOOTH\_ADMIN | Present |  |  |  |
| Permissions in Manifest are being asked for at Run Time. | Installing an app, permissions must be asked for API 23 and above | Present |  |  |  |

1. Sanity Tests

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Test | Test stages | Expected Result | Actual Result | Tested Device | Tested API |
| App Opening | App opens with a defined UI (Button) | App Opens |  |  |  |
| “QA exercise” button | * button text = 'QA exercise' * button color = '#783562' * button has a unique ID * button is initialized and found by ID at onCreate * button has a click event “setOnClickListener” and it executes a command or calls a method | -Pass  -Pass  -Pass  -Pass  -Pass |  |  |  |
| Click Button | Clicking button opens Ads page | Pass |  |  |  |
| Ads page UI | Page displays Main Ad and several other Ads | Pass |  |  |  |
| Click on Ad | Clicked Ad redirects user to Google Play Store application download page | Pass |  |  |  |
| Click on “Skip” | Stops displaying Ads and returns to App MainActivity | Pass |  |  |  |
| Click on (i) | Redirects user to Appnext home web page | Pass |  |  |  |
| Click Back at Ads page | True  False | Exits page  Does nothing |  |  |  |
| Click Back at MainActivity | Closes the app | Closes the app |  |  |  |
| Open app in Landscape | Check that app opens in Landscape mode | Pass |  |  |  |
| Open app in Portrait | Check that app opens in Portrait mode | Pass |  |  |  |
| Orientation Change | * From Portrait to Landscape * From Landscape to portrait | MainActivity and Ads page rotate  MainActivity and Ads page rotate |  |  |  |
| Ads page scrollable | Scroll Ads up/down | Ads Scrollable |  |  |  |
| Exit Ads page to the main Button activity | Re-enter Ads page by clicking on “QA exercise” button, check that all the above works | Pass |  |  |  |
| Turn off WIFI and Cellular Internet | * Open application and click the “QA exercise” button * Turn on WIFI or Cellular Internet and click the button again * Open Ads page and then shut down WIFI and Cellular Internet * Click an Ad then WIFI/Cellular Internet are off | Connectivity Error from callback  Ads page opens  Ads page remain open since they are loaded and user can replay main ad  Connection error from Google Play |  |  |  |
| Turn on WIFI/Cellular Internet | * While Ads page displayed or one of the ads was clicked when there was no Internet | App resumes and re-clicking ad redirects to Google Play |  |  |  |
| Connect Device to Desktop | * Run app from Android Studio while device connected to Desktop and see errors and important messages printed to LogCat | See errors and messages |  |  |  |

1. Test Ad Unit required properties to run

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Test | Tests stages | Expected Result | Actual Result | Tested Device | Tested API |
| Appnext is being initialized at onCreate of an app. |  | Initialized |  |  |  |
| Presence of placementID | * Passed as a second parameter (after context) at new instance of Interstitial at onCreate * Check a case when nothing passed as a second parameter * Check a case that a second parameter passed is an empty String (“”) * Check a case that a second parameter passed is a wrong placementID or a random String – | Passed  compilation error  App crash  an error callback will show as a Toast that there are no ads. |  |  |  |
| Methods loadAd() and/or showAd() are at onClick event method | * Test that when only loadAd() present * Test that when only showAd() present * Test that when loadAd() and showAd()present * Test a case when no Internet connection at all | the be Ad will not shown but loaded and a callback Toast will popup that ad loaded Pass  The Ad will be shown and a callback Toast will popup that ad shown    The Ad will be shown and a callback Toast will popup that ad loaded and following it a Toast that ad shown  An Error callback will occur and a Toast message will pop up that no connection |  |  |  |

***Public APIs***

1. Classes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Test |  | Expected Result | Actual Result | Tested Device | Tested API |
| Appnext.init(context) | * Empty context * “null” context | Compilation Error  Caught exception | APPLICATION CRASHES |  |  |
| new Interstitial(context, placementID)  new Interstitial(context, placementID, config) | * Create new instance of Interstitial with a “null” at context * Create new instance of Interstitial with a String/Numeric value at context * Create new instance of Interstitial with a “null” placementID * Create new instance of Interstitial with a “” placementID * Create new instance of Interstitial with a “sdfsdf” string at placementID   Same test as section above but with configuring setters. | Caught exception  Compilation error  Caught exception  Caught exception  Application runs, clicking on a button an error callback Toast with an error “No Ads”  Configured Setters change Interstitial functionality | APPLICATION CRASHES  APPLICATION CRASHES  APPLICATION MAIN ACTIVITY IS UP, CLICKING BUTTON APP CRASHES |  |  |

1. Test Ads Configurations – Advanced Settings

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Test | Change Values of setters to see a change.  Each one of them has several values | Expected Result | Actual Result | Tested Device | Tested API |
| Test that configuration settings work.  Change values for each setting in the list to see their effect | * setButtonText("Install"); * setButtonColor("#6AB344"); * setSkipText("Skip"); * setCategories("category1,category2"); * setPostback("postback"); * setBackButtonCanClose(false); * setAutoPlay(true); * setMute(false); * setCreativeType(Interstitial.”\_\_\_\_\_“); * setOrientation(Interstitial. ”\_\_\_\_\_“); | -Button Text changes  -Button Color Changes  -Skip button text changes  -Change categories  -PostBack name changes  -this button ON/OFF  -When true plays, false doesn’t  -false plays music, true doesn’t  -Changes creative type  -changes orientation |  |  |  |

1. Use CallBacks for testing

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Test | Optional but beneficial for testing | Present | Not Present | Tested Device | Tested API |
| Make sure required imports are present in the app | import com.appnext.core.callbacks.OnAdLoaded;  import com.appnext.core.callbacks.OnAdOpened;  import com.appnext.core.callbacks.OnAdClicked;  import com.appnext.core.callbacks.OnAdClosed;  import com.appnext.core.callbacks.OnAdError; | Present |  |  |  |
| Make sure callbacks are present | adLoaded(String bannerID)  adOpened()  adClicked()  onAdClosed()  adError(String error) | Present |  |  |  |

1. In-App Header Bidding

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Test | Getter Role | Expected Result | Actual Result | Tested Device | Tested API |
| getEcpm | Returns the predicted ECPM value of the banner that is about to be loaded (float  type) | An up next banner value (float) |  |  |  |
| getPpr | Returns the predicted price per request value (ECPM value / 1000) (float type) | Price (float) |  |  |  |
| getBanner | Returns the banner ID of the banner that is about to load (String type) | Banner ID (String) |  |  |  |

1. Performance (Assuming I have the necessary tools)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Test | Time and memory consumption | Expected Result | Actual Result | Tested Device | Tested API |
| GPU | How much GPU time and percent consumed for loading |  |  |  |  |
| RAM | How much RAM used during the operation |  |  |  |  |
| Loading Time | How much time took to load |  |  |  |  |

1. Regression Tests

Should be tested according to bugs fixed in previous versions.

Versions defined in “Change Log”.