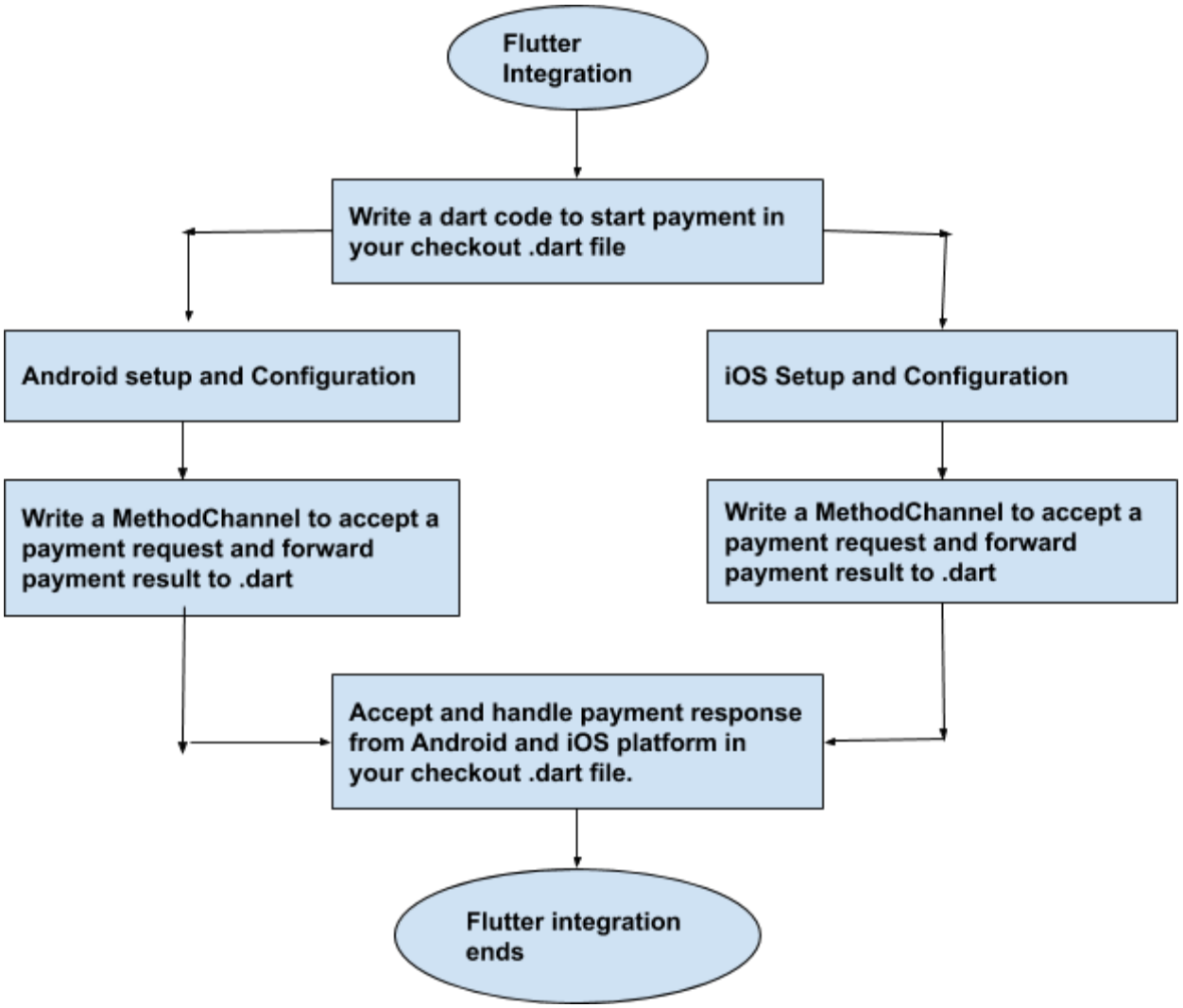
PayWithEaseBuzz Payment kit Integration (Flutter)



- **Dart Setup:**
  1. Write the below **.dart** code in your checkout file (On click of pay button)

     1.1: Write MethodChannel declaration as below.

```
static MethodChannel _channel = MethodChannel('easebuzz');
```

     1.2: Write below code to start payment.

```
async {
        String txnid = "abcd";
       String amount = "2.0";
       String productinfo= "test info";
       String firstname= "test user";
       String email = "testing@gamil.com";
       String phone = "1234567890";
       String key = "XXXXXXXXXXX";
       String udf1 = "";
       String udf2 = "";
       String udf3 = "";
       String udf4 = "";
       String udf5 = "";
       String address1="test address one";
       String address2="test address two";
       String city="";
       String state="";
       String country="";
       String zipcode="";
       String hash="Create hash as per below procedure";
       String pay_mode="production";
       String unique_id="11345";
       Object parameters = {"txnid":txnid,"amount":amount, "productinfo":productinfo,
                       "firstname":firstname,"email":email,"phone":phone,
                       "key":key,"udf1":udf1,"udf2":udf2,"udf3":udf3,
                       "udf4":udf4,"udf5":udf5,"udf6":udf6,"udf7":udf7,
                       "udf8":udf8,"udf9":udf9,"udf10":udf10,"address1":address1,
                      "address2":address2,"city":city,"state":state,"country":country,
       "Zipcode":zipcode,"hash":hash,"pay_mode":pay_mode,"unique_id":unique_id};
 final payment_response = await _channel.invokeMethod("payWithEasebuzz", parameters)
}

// payment_response is the HashMap contains the result of payment.
```

Hash generation (sha512): Hash is a mandatory parameter – used specifically to avoid any tampering during the transaction. It is sha512 encrypted string. And hash sequence is mentioned below.

Hash sequence:
key|txnid|amount|productinfo|firstname|email_id|udf1|udf2|udf3|udf4|udf5|||||salt|key

Generate the sha512 of above hash sequence. and pass as a hash parameter.

Note:

1. Make sure the parameters that you are passing to Easebuzz SDK intent should exactly be the same which has been used to generate the hash.
For example.
 1. If you used demo@gmail.com to generate the hash and Demo@gmail.com is passed to SDK intent, Then It will throw an error.
 2. If you appended space to any parameter while generating a hash and passed the space appended parameter to SDK intent then It will throw an error.
 3. If you are using amount 1.00, Then It will throw an error. Please use amount like 1.0 (Complete number's amount). The amount like 1.12 will work fine.

Suggestion: It would be more secure if the hash generation process is done at back end (Server Side)

- ## Android Setup:

1. Copy **peb-lib.aar** file into android/app/libs/ folder of your flutter application.
2. Proguard Rules configurations:
   Add below line to your proguard rules.

```
-keepclassmembers class com.easebuzz.payment.kit.**{
        *;
    }
```

3. Build.gradle(app) modifications.
   Add this line to build.gradle (app)

```
defaultConfig {
        multiDexEnabled true
    }
```

Add the following lines to packagingOptions,

```
exclude 'META-INF/DEPENDENCIES'
exclude 'META-INF/NOTICE'
exclude 'META-INF/LICENSE'
exclude 'META-INF/LICENSE.txt'
exclude 'META-INF/NOTICE.txt'
```

Add the following line to dexOptions.

```
javaMaxHeapSize "4g"
```

Add repositories section as follows.

```
repositories {
    flatDir {
        dirs 'libs'
```

```
        }
    }
```

Add the following dependencies

1.compile(name: 'peb-lib', ext: 'aar')
2. compile 'com.android.support:appcompat-v7:28.0.0'
3. compile 'com.android.support:design:28.0.0'
5. compile 'com.android.support:cardview-v7:28.0.0'
6. compile 'com.android.support:recyclerview-v7:28.0.0'
7. compile 'com.squareup.picasso:picasso:2.71828'
8. compile 'com.squareup.okhttp:okhttp:2.4.0'
9. compile 'com.squareup.okhttp:okhttp-urlconnection:2.2.0'
10. compile 'com.squareup.retrofit2:retrofit:2.3.0'
11. compile 'com.squareup.retrofit2:converter-gson:2.3.0'

3. Add **JsonConverter.java** in the directory where MainActivity.java is located in android directory.

4. Modify your MainActivity.java located in the android directory as below.

4.1. Declare the below variables.

```
private static final String CHANNEL = "easebuzz";
MethodChannel.Result channel_result;
private boolean start_payment = true;
```

4.2. Write bellow code and Set the MethodChannel handler in onCreate() of MainActivity.java as below.

```
start_payment = true;
new MethodChannel(getFlutterView(), CHANNEL).setMethodCallHandler(
           new MethodChannel.MethodCallHandler() {
             @Override
             public void onMethodCall(MethodCall call, MethodChannel.Result result) {
               channel_result = result;
               if(call.method.equals("payWithEasebuzz"))
                {
                    if(start_payment)
                    {
                        start_payment=false;
                       startPayment(call.arguments);
                    }
                 }
               }
 });
```

4.2. Define startPayment() method which is called in above onCreate method()

```
    private void startPayment(Object arguments) {
        try {
           Gson gson = new Gson();
          JSONObject parameters = new JSONObject(gson.toJson(arguments));
          Intent intentProceed = new Intent(getBaseContext(), PWECouponsActivity.class);
          float amount = Float.parseFloat(parameters.getString("amount"));
          intentProceed.putExtra("txnid",parameters.getString("txnid"));
          intentProceed.putExtra("amount",amount);
          intentProceed.putExtra("productinfo",parameters.getString("productinfo"));
          intentProceed.putExtra("firstname",parameters.getString("firstname"));
          intentProceed.putExtra("email",parameters.getString("email"));
          intentProceed.putExtra("phone",parameters.getString("phone"));
```

```
            intentProceed.putExtra("key",parameters.getString("key"));
            intentProceed.putExtra("udf1",parameters.getString("udf1"));
            intentProceed.putExtra("udf2",parameters.getString("udf2"));
            intentProceed.putExtra("udf3",parameters.getString("udf3"));
            intentProceed.putExtra("udf4",parameters.getString("udf4"));
            intentProceed.putExtra("udf5",parameters.getString("udf5"));
            intentProceed.putExtra("address1",parameters.getString("address1"));
            intentProceed.putExtra("address2",parameters.getString("address2"));
            intentProceed.putExtra("city",parameters.getString("city"));
            intentProceed.putExtra("state",parameters.getString("state"));
            intentProceed.putExtra("country",parameters.getString("country"));
            intentProceed.putExtra("zipcode",parameters.getString("zipcode"));
            intentProceed.putExtra("hash",parameters.getString("hash"));
            intentProceed.putExtra("pay_mode",parameters.getString("pay_mode"));
            intentProceed.putExtra("unique_id",parameters.getString("unique_id"));
            startActivityForResult(intentProceed, StaticDataModel.PWE_REQUEST_CODE);
          }catch (Exception e) {
             start_payment = true;
             Map<String, Object> error_map = new HashMap<>();
             Map<String, Object> error_desc_map = new HashMap<>();
             String error_desc = "exception occured:"+e.getMessage();
             error_desc_map.put("error","Exception");
             error_desc_map.put("error_msg",error_desc);
             error_map.put("result",StaticDataModel.TXN_FAILED_CODE);
             error_map.put("payment_response",error_desc_map);
             channel_result.success(error_map);
          }
}
```

4.3. Write below code to catch payment result and forward to the flutter.

```
          @Override
          protected void onActivityResult(int requestCode, int resultCode, Intent data)
          {
             if(requestCode==StaticDataModel.PWE_REQUEST_CODE)
                 {
                     start_payment=true;
                     JSONObject response = new JSONObject();
                     Map<String, Object> error_map = new HashMap<>();
                     if(data != null ) {
                       String result = data.getStringExtra("result");
                       String payment_response = data.getStringExtra("payment_response");

                       try {
                         JSONObject obj = new JSONObject(payment_response);
                         response.put("result", result);
                         response.put("payment_response", obj);
                         channel_result.success(JsonConverter.convertToMap(response));
                         channel_result.success(response);
                       }catch (Exception e){

                        Map<String, Object> error_desc_map = new HashMap<>();
                        error_desc_map.put("error",result);
                        error_desc_map.put("error_msg",payment_response);
                        error_map.put("result",result);
                        error_map.put("payment_response",error_desc_map);
                        channel_result.success(error_map);
                       }

                     }else{
                       Map<String, Object> error_desc_map = new HashMap<>();
                       String error_desc = "Empty payment response";
                       error_desc_map.put("error","Empty error");
                       error_desc_map.put("error_msg",error_desc);
                       error_map.put("result","payment_failed");
```

```
                    error_map.put("payment_response",error_desc_map);
                    channel_result.success(error_map);
                }
            }else
              {
                 super.onActivityResult(requestCode, resultCode, data);
               }

        }
```

5. And your Android Setup is done.

- **iOS Setup :**

The PaywithEaseBuzz iOS SDK is compatible with apps supporting iOS 9 and above
And requires Xcode 9 to build from source.

a. Copy easebuzz.framework of your application in embedded binaries.
b. Press + and add framework using 'Add other' button.
c. Browse framework: file from your folder and select 'copy items if needed'.
d. Set Always embed swift standard libraries to YES from project build settings

```
ALWAYS_EMBED_SWIFT_STANDARD_LIBRARIES = YES
```

e. To simply disable ATS, you can follow this steps by open Info.plist, and add the following lines:

```
<key>NSAppTransportSecurity</key>
<dict> <key>NSAllowsArbitraryLoads</key>
       <true/>

</dict>
```

➢ **Initiate Payment Request**

1. Import Easebuzz module in your AppDelegate/ ViewController
2. Set Delegate to your AppDelegate/ ViewController as PayWithEasebuzzCallback and Confirm the delegate.
3. On click Pay button from your app, you need to call initiatePaymentAction method.

Refer below code for calling payment gateway.

SWIFT - copy below code and paste in AppDelegate.swift file
Please do not change Flutter method channel name and flutter method call name.

```
import UIKit
import Flutter
import Easebuzz
```

```
@UIApplicationMain
@objc class AppDelegate: FlutterAppDelegate,PayWithEasebuzzCallback {
    var payResult:FlutterResult!
    override func application(
        _ application: UIApplication,
        didFinishLaunchingWithOptions launchOptions:
[UIApplicationLaunchOptionsKey: Any]?
        ) -> Bool {
        self.initializeFlutterChannelMethod()
        return super.application(application,
didFinishLaunchingWithOptions: launchOptions)
    }
    // Initialise flutter channel
    func initializeFlutterChannelMethod()  {
        GeneratedPluginRegistrant.register(with: self)
        guard let controller = window?.rootViewController as?
FlutterViewController else {
            fatalError("rootViewController is not type
FlutterViewController")
        }

        let methodChannel = FlutterMethodChannel(name: "easebuzz",
                                                 binaryMessenger:
controller)
        methodChannel.setMethodCallHandler({
            [weak self] (call: FlutterMethodCall, result: @escaping
FlutterResult) -> Void in
            guard call.method == "payWithEasebuzz" else {
                result(FlutterMethodNotImplemented)
                return
            }
            self?.payResult = result;
            self?.initiatePaymentAction(call: call);
        })
    }

    // Initiate payment action and call payment gateway
    func initiatePaymentAction(call:FlutterMethodCall) {
        if let orderDetails = call.arguments as? [String:String]{
            let payment = Payment.init(customerData: orderDetails)
            let paymentValid = payment.isValid().validity
            if !paymentValid {
                print("Invalid records")
            } else{
                PayWithEasebuzz.setUp(pebCallback: self )
                PayWithEasebuzz.invokePaymentOptionsView(paymentObj:
payment, isFrom: self)
            }
        }else{
            // handle error
            let dict =  self.setErrorResponseDictError("Empty error",
errorMessage: "Invalid validation", result: "Invalid request")
            self.payResult(dict)
        }
    }

    // payment call callback and handle response
    func PEBCallback(data: [String : AnyObject]) {
        if data.count > 0 {
            self.payResult(data)
        }else{
            let dict =  self.setErrorResponseDictError("Empty error",
errorMessage: "Empty payment response", result: "payment_failed")
            self.payResult(dict)
        }
    }
```

```
    // Create error response dictionary that the time of something went
wrong
    func setErrorResponseDictError(_ error: String?, errorMessage: String?,
result: String?) -> [AnyHashable : Any]? {
        var dict: [AnyHashable : Any] = [:]
        var dictChild: [AnyHashable : Any] = [:]
        dictChild["error"] = "\(error ?? "")"
        dictChild["error_msg"] = "\(errorMessage ?? "")"
        dict["result"] = "\(result ?? "")"
        dict["payment_response"] = dictChild
        return dict
    }

}
```

Objective C - copy below code and paste in AppDelegate.m file

```
#include "AppDelegate.h"
#include "GeneratedPluginRegistrant.h"
#import <Flutter/Flutter.h>

@implementation AppDelegate
- (BOOL)application:(UIApplication *)application
didFinishLaunchingWithOptions:(NSDictionary *)launchOptions {
    [self initialisePaywithEasebuzz];
    return [super application:application
didFinishLaunchingWithOptions:launchOptions];
}
// Initiate method
-(void)initialisePaywithEasebuzz{
    [GeneratedPluginRegistrant registerWithRegistry:self];
    FlutterViewController* controller =
    (FlutterViewController*)self.window.rootViewController;
    FlutterMethodChannel* methodChannel = [FlutterMethodChannel

methodChannelWithName:@"easebuzz"
                                          binaryMessenger:controller];
    __weak typeof(self) weakSelf = self;
    [methodChannel setMethodCallHandler:^(FlutterMethodCall* call,
                                          FlutterResult result) {
        NSLog(@"call kit = %@",call.method);
        self.payResult = result;
        if ([@"payWithEasebuzz" isEqualToString:call.method]) {
            [weakSelf initiatePaymentAction:call];
        } else {
            result(FlutterMethodNotImplemented);
        }
    }];
}

// Initialize payment gateway
-(void)initiatePaymentAction:(FlutterMethodCall*)call {
    NSDictionary *orderDetails1 = [NSDictionary
dictionaryWithDictionary:call.arguments];
    NSLog(@"%@",orderDetails1);
    self.payment = [[Payment alloc]initWithCustomerData:orderDetails1];
    BOOL paymentValid = _payment.isValid;
    if (!paymentValid) {
        NSDictionary *dict = [self setErrorResponseDictError:@"Empty error"
errorMessage:@"Invalid validation" result:@"Invalid request"];
        if (dict != nil) {
            self.payResult(dict);
```

```
        }
    } else {
        [PayWithEasebuzz setUpWithPebCallback:self];
        [PayWithEasebuzz invokePaymentOptionsViewWithPaymentObj:_payment
isFrom:self];
    }
}

// Call back delegate from the paywitheasebuzz gateway
- (void)PEBCallbackWithData:(NSDictionary<NSString *,id> * _Nonnull)data {
    @try {
        if (data != nil) {
            self.payResult(data);
        }else{
            NSDictionary *dict = [self setErrorResponseDictError:@"Empty
error" errorMessage:@"Empty payment response" result:@"payment_failed"];
            if (dict != nil) {
                self.payResult(dict);
            }
        }
    }
    @catch (NSException *exception) {
        NSString *str = [NSString stringWithFormat:@"exception
occured:%@",exception.reason];
        NSDictionary *dict = [self setErrorResponseDictError:@"Exception"
errorMessage:str result:@"payment_failed"];
        if (dict != nil) {
            self.payResult(dict);
        }
    }
    @finally {
    }
}

// Create error response dictionary that the time of something went  wrong
-(NSDictionary *)setErrorResponseDictError:(NSString *)error
errorMessage:(NSString*)errorMessage result:(NSString*)result{
    NSMutableDictionary *dict = [[NSMutableDictionary alloc]init];
    NSMutableDictionary *dictChild = [[NSMutableDictionary alloc]init];
    dictChild[@"error"] = [NSString stringWithFormat:@"%@",error];
    dictChild[@"error_msg"] = [NSString
stringWithFormat:@"%@",errorMessage];
    dict[@"result"] = [NSString stringWithFormat:@"%@",result];
    dict[@"payment_response"] = dictChild;
    return dict;
}
@end
```

Remove unused architectures -

1. Easebuzz is custom universal framework and for in on production, we need to remove unused architectures. Because Apple doesn't allow the application with unused architectures to the App Store.
2. Select the Project, Choose Target → Project Name → Select Build Phases → Press "+" → New Run Script Phase → Name the Script as "Run Script".
3. Always this script should be placed below "Embed Frameworks".

4. Always build the project for both simulator and generic device build before start the archives.
5. Run the below script to remove the unused simulator architectures at the time of pushing the App to App Store.

```
APP_PATH="${TARGET_BUILD_DIR}/${WRAPPER_NAME}"

# This script loops through the frameworks embedded in the application and
# removes unused architectures.
find "$APP_PATH" -name 'Easebuzz.framework' -type d | while read -r
    FRAMEWORK
do
FRAMEWORK_EXECUTABLE_NAME=$(defaults read "$FRAMEWORK/Info.plist"
    CFBundleExecutable)
FRAMEWORK_EXECUTABLE_PATH="$FRAMEWORK/$FRAMEWORK_EXECUTABLE_NAME"
echo "Executable is $FRAMEWORK_EXECUTABLE_PATH"

EXTRACTED_ARCHS=()

for ARCH in $ARCHS
do
echo "Extracting $ARCH from $FRAMEWORK_EXECUTABLE_NAME"
lipo -extract "$ARCH" "$FRAMEWORK_EXECUTABLE_PATH" -o
    "$FRAMEWORK_EXECUTABLE_PATH-$ARCH"
EXTRACTED_ARCHS+=("$FRAMEWORK_EXECUTABLE_PATH-$ARCH")
done

echo "Merging extracted architectures: ${ARCHS}"
lipo -o "$FRAMEWORK_EXECUTABLE_PATH-merged" -create "${EXTRACTED_ARCHS[@]}"
rm "${EXTRACTED_ARCHS[@]}"

echo "Replacing original executable with thinned version"
rm "$FRAMEWORK_EXECUTABLE_PATH"
mv "$FRAMEWORK_EXECUTABLE_PATH-merged" "$FRAMEWORK_EXECUTABLE_PATH"

done
```