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The Juicerz

Cyclomatic Complexity

Metric Data:

I used the tools CodeMetrics, an extension for Visual Studio Code, and Radon, a Python tool, to gather the below data from our javascript files and Lambda functions.

The prefix “React” refers to React Native functions, “Lambda” refers to functions written in AWS Lambda, and “BackendServer” refers to functions used for logging charge data from NeoCharge devices.

Method	CCN
React.screens.SignUpScreen.SignUp()	19
React.screens.SignInScreen.SignIn()	17
React.screens.VerificationScreen.verifySignUp()	12
React.screens.VerificationScreen.resendVerificationCode()	7
React.screens.SchedulingHomeScreen.render()	28
React.screens.VerificationScreen.render()	17
React.screens.SignUpScreen.render()	15
React.screens.HomeScreen.render()	15
React.screens.SignInScreen.render()	14
React.screens.AuthLoadingScreen.render()	6
Lambda.postToDB.handler()	2
Lambda.addUser.lambda_handler()	1
BackendServer.executeQuery()	7
BackendServer.on_connect()	2
BackendServer.on_log()	1
BackendServer.on_message()	1

Analysis:

Cyclomatic complexity is a metric we should improve upon in our future sprints. Although the Lambda and BackendServer functions have low CCN values, many of the React functions are too complex. This is a concern to us because excessively complex functions are difficult to test and maintain, and we will find maintainability increasingly difficult as our code base grows larger with each sprint iteration. Lucky for us, we are recognizing this need for improvement early on, so there is not a large amount of functions that require refactoring.

Upon review, we have recognized ways in which we can reduce complexity in our functions with high CCNs. The complexity of the React authentication functions can easily be decreased by moving the error handling into helper functions. Also, repeated elements in our render functions can be moved into sub-components. Decomposing components into appropriate sub-components will decrease nesting within our views and allow them to be readable and maintainable.

CC score	Rank	Risk
1 - 5	A	low - simple block
6 - 10	B	low - well structured and stable block
11 - 20	C	moderate - slightly complex block
21 - 30	D	more than moderate - more complex block
31 - 40	E	high - complex block, alarming
41+	F	very high - error-prone, unstable block

Figure 1 - This was a rating guide provided by Radon.