5) Concurrent Applications

1) Explain the difference between Threads and Queues briefly.
2) Grand Central Dispatch (GCD)
   1) What is the aim of GCD?
   2) What mechanisms and APIs are provided to the developer through GCD?
   3) Provide a code-snippet that schedules a random piece of code asynchronously on a background priority queue using the GCD-API.
3) Operation and OperationQueue
   1) Name features (3) of the Operation and OperationQueue API that are not available within GCD before QoS-classes were introduced.
   2) Provide a code-snippet that schedules a random piece of code asynchronously on a background priority queue using the OperationQueue-API.
4) On what Queue are UI related tasks performed? What happens, if UI related tasks are performed on a different queue?
5) Open the ‘Concurrent Applications’ Xcode project of the provided exercise material and run the project. Click the ‘Perform long running task’ button. Describe what the user experiences!
   1) Solve the issue by dispatching the ‘self.label.text = longRunningTask()’ assignment to a Utility QoS global background queue. Describe the resulting behavior.
   2) How can the experienced behavior from task 5.1) be fixed? Test your solution in the example project.
   3) Implement the dispatch of task 5.1) with the help of an concurrent Operation subclass.