Research Plan for Mobile DNA Read Aligner (Starting Date: 3/3/13)

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| **Planned Completion Date** | **Part To Have Done** |
| 3/8/13 | Computing Burrows-Wheeler Transform |
| 3/13/13 | Getting original string from Burrows-Wheeler Transform |
| 3/21/13 | Exact Match in Burrows-Wheeler Transform |
| 3/25/13 | Come up with a way to print the alignment results to the console |
| 4/3/13 | Approximate Match in Burrows-Wheeler Transform |
| 4/12/13 | Computing Levenshtein edit distance for any two given strings |
| 4/20/13 | Computing Levenshtein edit distance for a given read and a specific range in the reference sequence |
| 4/25/13 | Backtrack Levenshtein edit distance to get two (possibly) gapped strings |
| 4/28/13 | Basic menus for interface created |
| 5/5/13 | The main menu, the file picker menu, and the parameter menu all function properly |
| 5/8/13 | Mock-Up of analysis view completed |
| 5/21/13 | Create algorithm to analyze the alignment results to find mutations |
| 5/30/13 | Analysis view displays the alignment results |
| 6/3/13 | Analysis view displays mutations and has them clearly identified (ex. color-code the mutations) |
| 6/8/13 | Analysis view displays coverage graph |
| 6/23/13 | Allow for searching for positions and strings in analysis view |
| 6/30/13 | Add support for reading in files through Dropbox |
| 7/7/13 | Add support for exporting the alignment results and the mutations through Dropbox and email |
| 7/17/13 | Optimize BWT creation code |
| 7/27/13 | Optimize exact match code |
| 8/4/13 | Optimize approximate match code |
| 8/15/13 | Optimize Levenshtein edit distance code |
| 8/23/13 | Allow for reading in of files with extension .fa (for reads and reference genome) and .fq (for reads) |
| 9/2/13 | Go through code fixing memory issues (memory not freed by garbage collection) |
| 9/29/13 | Test on different generation iPads and compare performances (finding people to lend iPads may be difficult) |
| 10/5/13 | Create Application icon and come up with application name |
| 10/25/13 | Final code testing for first official release |
| 11/5/13 | Submit Application to the Apple App Store |