**REPORT FOR THE FINAL PRACTICE**

**Medium level**

For the medium level we had to implement four new endpoints: “/geneSeq”, “/geneInfo”, “/geneCalc” and “/geneList”. For this part we had to copy a document in which we created the class “Seq” because we needed it to perform certain calculations in the “/geneCalc” endpoint. To proceed, the endpoints said are going to be tested.

/geneSeq

Browser’s url: <http://127.0.0.1:8000/geneSeq?gene=FRAT2>

html code of the returned web page:

<html><title>FRAT2 sequence</title>

<body style = "background-color: springgreen;"><h1>FRAT2</h1>

<p>The sequence of the requested gene is:</p><h2>AGGCGCGTGGCTCGAGTGCCTGGCGGGCTCCGGCTTCCGCGTCCGCCCCTGCTCCGGCTTCGCCCGCAGCTCCGCGCCCGCGGGCAACCAAGCCCCCAGCGAAGCCCGCACAGCTCCGGGTGCCAGGACGGGGGGCCATGCCGTGCCGGAGGGAGGAGGAAGAGGAAGCCGGCGAGGAGGCGGAGGGGGAGGAAGAGGAGGACGACAGCTTCCTCCTGCTGCAGCAGTCGGTGACGCTGGGCAGCTCGGGCGAGGTGGACCGGCTGGTGGCCCAGATCGGCGAGACGCTGCAGCTGGACGCGGCGCAGGACAGCCCGGCCTCGCCGTGCGCGCCCCCGGGGGTGCCGCTGCGGGCCCCGGGGCCCCTGGCTGCGGCGGTGCCGGCGGACAAGGCCCGGCCCCCGGCGGTGCCGCTGCTGCTGCCGCCCGCTTCGGCTGAGACGGTGGGCCCGGCGCCCTCTGGGGCCCTGCGCTGCGCCCTAGGGGACCGCGGCCGCGTGCGCGGACGCGCTGCGCCCTACTGCGTGGCGGAGGTCGCCGCAGGCCCCAGCGCGCTGCCGGGGCCGTGCCGGCGAGGATGGCTCAGGGACGCGGTCACCTCCCGCCGCTTGCAGCAGCGCCGATGGACCCAAGCCGGGGCACGCGCCGGCGACGACGACCCGCATCGGCTCCTCCAGCAGCTCGTGCTCTCGGGAAACCTCATCAAGGAAGCCGTGCGGAGACTCCAACGAGCCGTCGCCGCGGTTGCAGCCACGGGCCCCGCAAGCGCCCCTGGGCCCGGGGGAGGCCGCAGCGGACCTGACCGCATTGCCCTGCAGCCCTCAGGCTCCTTGCTCTGACGCAGGCCTCCTGGAGGAGGAAGTGGAGGCCGCTGCGTAGACCCAACAGCGTCCAGTTCCTACTAACTCTGAGCTGAAGCCGACGTCGCCAGCCTGGGAGCGACCACTTTGGCTGCGGGGAGGCGCGTGGGGAGAGATCTCAACCAGAGAAGTTACCAGCCGCGGCGAGGCCGTCGGAGAAAACTTAAGCGTGGAGAAATGTATGCGCCAGGGTGCTTCCGTGGGGCATGAGAATTTCCCGGGCCATCCAAGCCCAAGGACCTGGGATAAACTGGGAGAACTATGGCAGCTACTTGCATCGACTTGTACCTCACTTAGCCCTTGGGGGCGTCGTGAGCTTGGATTGTTTAAGGAGGGCTCAGGGGTAGGAATCGCGATGGCTTTATAACAATACTTGAAAACTAACGACACGCATACATTTTCTTATTTTCTGGTGGAGGAGCTTAGTAAGTGGTGCTACAATTGCTGTGCAAAGAAATTCCAGAGGGGAGAAGAATGTAAAAGTTTGGTGGTGGGTGGCTTGGCATTGCCCCTTTTTCCCACCGATTCGGTGGCTGGTGAAGGTGGGAGATGTGAACTCCAATTAAGGGACTGGAGAGAGGTGAAGAATTTTGCAGGTGGGAGATTTGGATTTGAATGTGGACTTGTAAATGACTTGACCTTGCCATCTGTGTTCAAGGTCACGGTTTGCTGTGGGGTTCCTGGGAGAGCTTACTCACCCCGGAGTCTTTTCTTTCTCTTGCTCCAAGAAGAGCCCTGTTGGTGCTTTACCACCGCTTGGAGTCTCCCGAGGACACAAACAGGCAGAGAGGGACGTGTAGGGAGAGTTCTTTCCTGTTTTCTGTGCTTTCCTTTTTACAGGACTCCCGGAAGGCCACTCATGGCCATGCCAGGAGCTTTCTCAGAAACAGTCATAAACGATCTCTTGAGTCTCTTTCTTGTCCTCCCAGCTGAGCTTTCTTATTCCACCCTTTCTGGTGTCTATAGGAATGCATGAGAGACCCTGGACGTTTTTCTGCTCTCTTCTGGCCCTCCATGGAGTCATGGGCCTCGGCCTCGGCGGCTCCTCACCCTCACAATTTATTTCCTCCTCCCGTGCCAGCCCTTCTTTTGTGTCTGAAACCGGTTTTAAAATGTGACTCTCCCAGAGAAGAAGCCGCTGGCTGTATGAAACTTGACGGCGCTTTTGTAAGGTGCCACCCCCAAACTTTAAGGTAGCTAAACCAATTTTTAAAAGATTCAATGGCTTGTTCATCCTCCAGATGTAGCTATTGATGTACACTTCGCAACGGAGTGTCTGAAATTGTGGTGGTCCTGATTTATAGGATTTCATAATTAAAATGTCTGCTGAATAAATTTGGCTTTTGTTTTGGA</h2>

<a href = "http://127.0.0.1:8000/">Click here to return to the main page</a>

</body></html>

/geneInfo

Browser’s url: <http://127.0.0.1:8000/geneInfo?gene=FAM188A>

html code from the returned web page:

<html><title>FAM188A info</title>

<body style = "background-color: springgreen;"><h1>FAM188A</h1>

<p>The starting point of the requested gene is:</p><h2>15778170</h2>

<p>The ending point of the requested gene is:</p><h2>15860507</h2>

<p>The length of the gene requested is:</p><h2>82337</h2>

<p>The id of the gene requested is:</p><h2>ENSG00000148481</h2>

<p>The chromosome in which the gene requested is located is:</p><h2>GRCh38</h2>

<a href = "http://127.0.0.1:8000/">Click here to return to the main page</a>

</body></html>

/geneCalc

Browser’s url: <http://127.0.0.1:8000/geneCal?gene=OSCAR>

html code from the returned page:

<html><title>OSCAR calculations</title>

<body style = "background-color: springgreen;"><h1>OSCAR</h1>

<p>The sequence of the length gene is:</p><h2>8025</h2>

<p>The percentage for each base is:</p>

<li>A: 24.8%</li><li>C: 25.7%</li>

<li>G: 27.4%</li><li>T: 22.1%<br>

<a href = "http://127.0.0.1:8000/">Click here to return to the main page</a></body></html>

/geneList

Browser’s url: <http://127.0.0.1:8000/geneList?chromo=3&start=0&end=500000>

html code from the returned page:

<html><body style="background-color: springgreen;"><title>Genes</title><ul>

<h1>Genes from position 0 to 500000</h1><li>LINC01986 <h3>Start: </h3>23757 <h3>End: </h3>24501<br><br><li>AC066595.1 <h3>Start: </h3>53348 <h3>End: </h3>54346<br><br><li>CHL1-AS2 <h3>Start: </h3>195758 <h3>End: </h3>197341<br><br><li>CHL1 <h3>Start: </h3>196763 <h3>End: </h3>409417<br><br><li>RNU6-1194P <h3>Start: </h3>282689 <h3>End: </h3>282792<br><br><li>RPS8P6 <h3>Start: </h3>308714 <h3>End: </h3>309322<br><br><li>CHL1-AS1 <h3>Start: </h3>363370 <h3>End: </h3>385795<br><br></u><a href = "http://127.0.0.1:8000/">Click here to return to the main page</a></body></html>