**Lab 04**

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| --- | --- |
| Name: |  |
| Student ID: |  |
| Total Score: |  |

**Note:**

Most of the explanations in this lab is optional. However, giving reasonable explanations to your answer or programs will earn you partial credits when your answer is incorrect.

1. **Multiple Choice (10 points, 5 points each question)**

|  |  |  |  |
| --- | --- | --- | --- |
| # | Answer | Explanation (Optional) | Score |
| 1 | C |  |  |
| 2 | A |  |  |

1. **Programming Exercise (30 points)**

|  |  |  |
| --- | --- | --- |
| # | Explanation (Mandatory for #1) | Score |
| 1 | What percentage of legendary Pokémon have an Attack value greater than 150?  What percentage of non-legendary Pokémon have an Attack value greater than 150?  Provide a brief description of your findings.  Identify the Pokémon that appears as an outlier in the lower right corner. |  |
| 2 |  |  |
| 3 |  |  |

1. **Data Analysis and Visualization for Climate Change (60 points)**

|  |  |  |
| --- | --- | --- |
| # | Explanation (Optional for questions 1, 2, and 5) | Score |
| 1 |  |  |
| 2 |  |  |
| 3 |  |  |
| 4 | How many steps does it take for the probability of being in the final state (i=9) to be at least 1%? |  |
| 5 | Try initialing x0 with random numbers and keep , will the probability distribution be different? Give an explanation. |  |
| 6 |  |  |
| 7 | Which state has the highest probability in step 8?  What do you observe from the two figures? Does the result meet your expectation?  # paste Lab04\_D7.png here |  |