## **README File**

## ➤ Birthday Paradox Simulation :

This C++ program simulates the Birthday Paradox to find the number of students needed in a class such that the probability of at least two students having the same birthday is greater than a given threshold 'p'.

- Requirements:
- 1). C++ compiler (GCC recommended)
- 2). Standard C++ library
- 3). Any operating system supporting C++
  - How to Run:

•	). <u>Compile the Program</u> : Use a C++ compiler to compile the source code. For example, using ++:
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	g++ birthday_paradox.cpp -o birthday_paradox
2)	). Run the Program : Execute the compiled binary:
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	./birthday_paradox ************************************

- <u>3). Input Probability Threshold</u>: Enter a valid probability threshold when prompted. The threshold must be a decimal value between 0 and 1.
- <u>4). View Output</u>: The program will output the number of students needed for the probability of at least two students having the same birthday to exceed the specified threshold.

Example Usage -
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Enter a valid probability threshold:
0.5
Number of students to have probability greater than 0.5 = 23.

Notes -

- 1). The program uses an iterative approach to find the number of students.
- 2). If the specified probability threshold is not within the valid range (0, 1), the program will display an error message.

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