

Homework #9

Objective: Write a program that simulates the MegaMillions and PowerBall Lottery using **arrays**.

Description:

In MegaMillions, players may pick six numbers from two separate pools of numbers – five different numbers from 1 to 70 (white ball) and one number from 1 to 25 (mega ball). In PowerBall, players pick five different numbers from 1 to 69 (white ball) and one number from 1 to 26 (power ball). In each MegaMillions or PowerBall drawing, five random and non-repetitive numbers will be drawn from white balls, and one random number from the mega/power balls. You win the jackpot by matching all six winning numbers in a drawing.

- 1) (2 pts) Display your standard output information using a function named `ShowProgramHeader()` as on the previous assignments.
- 2) (1 pt) Ask the user to select which lottery to play: MegaMillions or PowerBall
- 3) (2 pts) Get input from user in an array: five numbers for white ball and one additional number for mega or power ball
- 4) (12 pts) Write functions to:
 - a) (2 pts) Generate an array and initialize it with numbers 1 to 70 (MegaMillions) or 1 to 69 (PowerBall),
 - b) (6 pts) Shuffle the elements in the array and take the first five elements (so you get five random and non-repetitive numbers). To shuffle the elements, just swap each element with a random element in the array (eg. Swap `Arr[0]` with `Arr[random]`). It may be helpful if you print the elements of the array after shuffling to make sure the elements are shuffled correctly.
 - c) (1 pt) Get a random number from 1 to 25 (mega ball) or 1 to 26 (power ball), and
 - d) (3 pts) On screen, show output from steps b and c. as the result of a drawing, and compare with the user input in step 3 to show whether the user wins the jackpot.

Deliverables:

- Program: turn in your code (.cpp file)
- (3 pts) Output: test your program using **five** groups of input and show the output.