**Take Home Program #7 – Due on or before Tuesday 4/23, 2019 –**

**Objectives:** Functions – Call by References

Your name:

|  |
| --- |
| **Important instructions:**   * *All programs must include comments at the top of your program: your name,* the class name (CSIT 575)*, program name and* ***the program description (purpose of the program).*** * *Copy and paste your* ***program code*** *and* ***output*** *in Part B of each program. Note: Use snipping tool to* ***snip the output****.* * *Once it is done, save and submit this word file via Canvas.* |

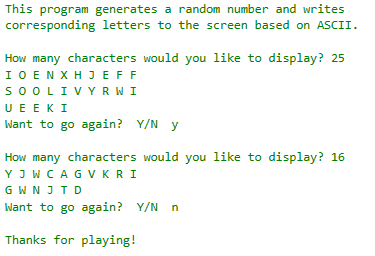
**RandomLetters.cpp**

Write a program to generate a random letter and writes random uppercase letters to the screen based on ASCII chart (A = 65 and Z = 90).

The program must include the following function prototypes:

* **void WriteHeader()** // type 1: Display program introduction
* void **AskNumberToDisplay(int&)** // function pass by references – Ask a user to enter the number of characters being display.
* **void CountingDisplay(int)** // type 2: counting the number of characters being displayed; this functions calls GenerateLetter function.
* **char GenerateLetter()** // type 3: Generates alpha letters using random function.

**Sample run:**



**Part B: Copy and paste your program (source) code and the outputs after this line**

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RandomLetters.cpp

generates a random letter and writes random uppercase letters to the screen based on ASCII chart \*/

#include <iostream>

#include <string>

using namespace std;

void WriteHeader();

void AskNumberToDisplay(int&);

void CountingDisplay(int);

void GenerateLetter();

int main()

{

int number;

string again;

WriteHeader();

AskNumberToDisplay(number);

CountingDisplay(number);

//input

cout << "\nWant to go again? Y\N: ";

cin >> again;

//Loop

while (again == "Y" || again == "y" || again == "Yes" || again == "yes")

{

AskNumberToDisplay(number);

CountingDisplay(number);

cout << "\nTry again? Y/N - ";

cin >> again;

}

//Checks if the user does not want to continue

if (again == "N" || again == "n" || again == "No" || again == "no")

{

cout << "\nThanks for playing!\n";

system("pause");

return 0;

}

}

//Ouput

void WriteHeader()

{

cout << "This program generates a random number and writes\ncorresponding letters to the screen based on ASCII." << endl;

}

//Input

void AskNumberToDisplay(int &Number)

{

cout << "\nHow many characters would you like to display? ";

cin >> Number;

}

//Proccessing and Ouput

void CountingDisplay(int Number)

{

int loop = 0;

for (int i = 0; i <= Number - 1; i++)

{

if (loop == 10)

{

cout << endl;

loop = 0;

}

loop++;

GenerateLetter();

cout << " ";

}

}

//Random Character Generation

void GenerateLetter()

{

char randomletter;

randomletter = "ABCDEFGHIJKLMNOPQRSTUVWXYZ"[rand() % 26];

cout << randomletter;

}

OUPUT 1:

This program generates a random number and writes

corresponding letters to the screen based on ASCII.

How many characters would you like to display? 100

P H Q G H U M E A Y

L N L F D X F I R C

V S C X G G B W K F

N Q D U X W F N F O

Z V S R T K J P R E

P G G X R P N R V Y

S T M W C Y S Y Y C

Q P E V I K E F F M

Z N I M K K A S V W

S R E N Z K Y C X F

Want to go again? YN: Yes

How many characters would you like to display? 99

X T L S G Y P S F A

D P O O E F X Z B C

O E J U V P V A B O

Y G P O E Y L F P B

N P L J V R V I P Y

A M Y E H W Q N Q R

Q P M X U J J L O O

V A O W U X W H M S

N C B X C O K S F Z

K V A T X D K N L

Try again? Y/N - yes

How many characters would you like to display? 67

Y J Y H F I X J S W

N K K U F N U X X Z

R Z B M N M G Q O O

K E T L Y H N K O A

U G Z Q R C D D I U

T E I O J W A Y Y Z

P V S C M P S

Try again? Y/N - no

Thanks for playing!

Press any key to continue . . .

OUPUT 2:

This program generates a random number and writes

corresponding letters to the screen based on ASCII.

How many characters would you like to display? 25

P H Q G H U M E A Y

L N L F D X F I R C

V S C X G

Want to go again? YN: y

How many characters would you like to display? 1

G

Try again? Y/N - Y

How many characters would you like to display? 5

B W K F N

Try again? Y/N - n

Thanks for playing!

Press any key to continue . . .