// CPP code to suggest strong password

#include <bits/stdc++.h>

using namespace std;

// adding more characters to suggest strong password

string add\_more\_char(string str, int need)

{

int pos = 0;

// all 26 letters

string low\_case = "abcdefghijklmnopqrstuvwxyz";

for (int i = 0; i < need; i++) {

pos = rand() % str.length();

str.insert(pos, 1, low\_case[rand() % 26]);

}

return str;

}

// make powerful string

string suggester(int l, int u, int d, int s, string str)

{

// all digits

string num = "0123456789";

// all lower case, uppercase and special characters

string low\_case = "abcdefghijklmnopqrstuvwxyz";

string up\_case = "ABCDEFGHIJKLMNOPQRSTUVWXYZ";

string spl\_char = "@#$\_()!";

// position at which place a character

int pos = 0;

// if there is no lowercase char in input string, add it

if (l == 0) {

// generate random integer under string length

pos = rand() % str.length();

// generate random integer under 26 for indexing of a to z

str.insert(pos, 1, low\_case[rand() % 26]);

}

// if there is no upper case char in input string, add it

if (u == 0) {

pos = rand() % str.length();

str.insert(pos, 1, up\_case[rand() % 26]);

}

// if there is no digit in input string, add it

if (d == 0) {

pos = rand() % str.length();

str.insert(pos, 1, num[rand() % 10]);

}

// if there is no special character in input string, add it

if (s == 0) {

pos = rand() % str.length();

str.insert(pos, 1, spl\_char[rand() % 7]);

}

return str;

}

/\* make\_password function :This function is used to check

strongness and if input string is not strong, it will suggest\*/

void generate\_password(int n, string p)

{

// flag for lower case, upper case, special

// characters and need of more characters

int l = 0, u = 0, d = 0, s = 0, need = 0;

// password suggestions.

string suggest;

for (int i = 0; i < n; i++) {

// password suggestions.

if (p[i] >= 97 && p[i] <= 122)

l = 1;

else if (p[i] >= 65 && p[i] <= 90)

u = 1;

else if (p[i] >= 48 && p[i] <= 57)

d = 1;

else

s = 1;

}

// Check if input string is strong that

// means all flag are active.

if ((l + u + d + s) == 4) {

cout << "Your Password is Strong" << endl;

return;

}

else

cout << "Suggested password " << endl;

/\*suggest 10 strong strings \*/

for (int i = 0; i < 10; i++) {

suggest = suggester(l, u, d, s, p);

need = 8 - suggest.length();

if (need > 0)

suggest = add\_more\_char(suggest, need);

cout << suggest << endl;

}

}

// Driver code

int main()

{

string input\_string = "geek@2018";

srand(time(NULL));

// srand function set Seed for rand().

generate\_password(input\_string.length(), input\_string);

return 0;

}