using System;

using System.Collections.Generic;

namespace SimpleGrammar

{

class Program

{

static Dictionary<char, string> grammar = new Dictionary<char, string>

{

{'A', "aB"},

{'B', "bC"},

{'C', "cD"},

{'D', "d"}

};

static void Main(string[] args)

{

Console.WriteLine("Grammar Productions:");

foreach (var rule in grammar)

{

Console.WriteLine($"{rule.Key} -> {rule.Value}");

}

Console.WriteLine("\nEnter a non-terminal to see its production (A, B, C, D): ");

char nonTerminal = Console.ReadKey().KeyChar;

Console.WriteLine();

if (grammar.ContainsKey(nonTerminal))

{

string production = grammar[nonTerminal];

Console.WriteLine($"Production for {nonTerminal}: {nonTerminal} -> {production}");

}

else

{

Console.WriteLine("Invalid non-terminal. Please enter one of A, B, C, D.");

}

}

}

}