1. ALL VOWELS

```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Threading.Tasks;
namespace AllVowels
{
   class Program
   {
      static void Main(string[] args)
      {
         string input = Console.ReadLine();
         int result = userprogramcode.vowels(input);
         if (result == 1)
         {
            Console.WriteLine("Valid");
         }
         else
         {
            Console.WriteLine("Invalid");
         }

      }
   }
}
namespace AllVowels
{
   class userprogramcode
   {
      public static int vowels(string s)
      {
         string a = "aeiou";
         char[] c = s.ToCharArray();
         StringBuilder sb = new StringBuilder();
         foreach (char item in c)
         {
            if (item == 'a' || item == 'e' || item == 'i' || item == 'o' || item == 'u')
               sb.Append(item);
         }
         string b = sb.ToString();
         if (a == b)
            return 1;
         else
            return -1;
      }
   }
}
```

---

2. REVERSE STRING

```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
namespace ConsoleApplication9
{
   public class UserProgramCode
   {
      public static string reverseSubstring(string str, int start, int len)
      {
         StringBuilder sb = new StringBuilder();
         char[] ch = str.ToCharArray();
         Array.Reverse(ch);
         foreach (char item in ch)
         {
            sb.Append(item);
         }
         string s1 = sb.ToString();
         string s2 = s1.Substring(start, len);
         return s2;
      }
   }
}

namespace ConsoleApplication9
{
   class Program
   {
      static void Main(string[] args)
      {
         string str = Console.ReadLine();
         int start = int.Parse(Console.ReadLine());
         int len = int.Parse(Console.ReadLine());
         string str2 = UserProgramCode.reverseSubstring(str, start, len);
         Console.WriteLine(str2);
      }
   }
}
```

---

3. CALCULATE VAT

```
using System;
```

```
using System.Collections.Generic;
using System.Text;
namespace testteckTest
{
   class vat
   {
      public static double vatt(char ch, double cost)
      {
         double tax = 0; if (cost < 0) tax = -1;
         else if (ch != 'M' && ch != 'V' && ch != 'C' && ch != 'E') tax = -1;
         else if (ch == 'M')
            tax = 0.09 * cost;
         else if (ch == 'V')
            tax = 0.05 * cost;
         else if (ch == 'C')
            tax = 0.12 * cost;
         else if (ch == 'E')
            tax = 0.0625 * cost;
         return tax;
      }
   }
}
namespace testteckTest
{
   class Program
   {
      static void Main(string[] args)
      {

         char x = Convert.ToChar(Console.ReadLine());
         int c = Convert.ToInt32(Console.ReadLine());
         double i = vat.vatt(x, c);
         if (i == -1)
            Console.WriteLine("invalid input");
         else
            Console.WriteLine(i);
      }
   }
}
```

---

4. COUNT VOWELS

```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
```

```
using System.Threading.Tasks;
namespace tripprob4
{
   class Program
   {
      static void Main(string[] args)
      {
         do
         {
            UserProgramCode p = new UserProgramCode();
            Console.WriteLine(" Enter string to count Vowels");
            string st = Console.ReadLine();
            int ans = p.countVowels(st);
            Console.WriteLine(ans);
            Console.ReadKey();
         } while (true);
      }
   }
}
class UserProgramCode
{
   public int countVowels(string st)
   {
      st.ToLower();
      int count = 0;

      char[] arr = st.ToCharArray();
      foreach (var c in arr)
      {
         if (c == 'a' || c == 'e' || c == 'i' || c == 'o' || c == 'u')
         {
            count++;
         }
      }

      return count;
   }
}
```

---

5. GCD ARRAY

```
using System;
using System.Collections.Generic;
using System.Text;
using System.Linq;
namespace testteckTest
{
```

```
    class gcd_arr
    {
        public static int gcd(int[] a)
        {
            for (int i = 0; i < a.Length; i++)
            {
                if (a[i] < 0)
                    return -1;
            }

            int flag = 0;
            List<int> l = new List<int>();
            Array.Sort(a);
            for (int i = 0; i < l.Count; i++)
            {
                if (l[i] < 0)
                {
                    return -1;
                }
            }

            int b = a[0];
            for (int i = 1; i <= b; i++)
            {
                flag = 0;
                for (int j = 0; j < a.Length; j++)
                {
                    if (a[j] % i != 0)
                    {
                        flag = 1;
                    }
                }
                if (flag == 1)
                {
                }
                else
                {
                    l.Add(i);
                }
            }

            return l[l.Count - 1];
        }

    }
}
namespace testteckTest
{

    class Program
    {
        static void Main(string[] args)
        {
            int size = int.Parse(Console.ReadLine());
```

```
        int[] arr = new int[size];

        for (int i = 0; i < size; i++)
        {
            arr[i] = int.Parse(Console.ReadLine());
        }
        int res = gcd_arr.gcd(arr);
        Console.WriteLine(res);
    }
  }
}
```

---

6. TRAVEL AGENCY

```
using System;
namespace code1
{
  class Program
  {

    static void Main(String[] args)
    {
      int n, amount;
      n = int.Parse(Console.ReadLine());
      String[] input1 = new String[n];

      for (int i = 0; i < n; i++)
      {
        input1[i] = Console.ReadLine();
      }
      amount = UserMainCode.getTariffAmount(input1);
      if (amount != -1 && amount != -2)
        Console.WriteLine("The car has taken " + n + " trips and has collected total amount of " + amount + "rupe
es");

    }
  }
}

public class UserMainCode
{
  public static int getTariffAmount(string[] input1)
  {
    int length = input1.Length;
    double amount = 0;
    for (int i = 0; i < length; i++)
    {
```

```
if (input1[i][2] == 'N')
{
   if (input1[i][0] == 'A')
   {
      if (input1[i][1] == 'B')
         amount += 10;
      else if (input1[i][1] == 'C')
         amount += 30;
      else if (input1[i][1] == 'D')
         amount += 70;
      else
      {
         Console.WriteLine("Invalid Location");
         return -1;
      }
   }
   else if (input1[i][0] == 'B')
   {
      if (input1[i][1] == 'A')
         amount += 10;
      else if (input1[i][1] == 'C')
         amount += 20;
      else if (input1[i][1] == 'D')
         amount += 60;
      else
      {
         Console.WriteLine("Invalid Location");
         return -1;
      }
   }
   else if (input1[i][0] == 'C')
   {
      if (input1[i][1] == 'A')
         amount += 30;
      else if (input1[i][1] == 'B')
         amount += 20;
      else if (input1[i][1] == 'D')
         amount += 40;
      else
      {
         Console.WriteLine("Invalid Location");
         return -1;
      }
   }
   else if (input1[i][0] == 'D')
   {
      if (input1[i][1] == 'A')
         amount += 70;
      else if (input1[i][1] == 'B')
         amount += 60;
      else if (input1[i][1] == 'C')
         amount += 40;
      else
      {
```

```
            Console.WriteLine("Invalid Location");
            return -1;
        }
    }
    else
    {
        Console.WriteLine("Invalid Location");
        return -1;
    }
}
else if (input1[i][2] == 'U')
{
    if (input1[i][0] == 'A')
    {
        if (input1[i][1] == 'B')
            amount += 10 * 1.2;
        else if (input1[i][1] == 'C')
            amount += 30 * 1.2;
        else if (input1[i][1] == 'D')
            amount += 70 * 1.2;
        else
        {
            Console.WriteLine("Invalid Location");
            return -1;
        }
    }
    else if (input1[i][0] == 'B')
    {
        if (input1[i][1] == 'A')
            amount += 10 * 1.2;
        else if (input1[i][1] == 'C')
            amount += 20 * 1.2;
        else if (input1[i][1] == 'D')
            amount += 60 * 1.2;
        else
        {
            Console.WriteLine("Invalid Location");
            return -1;
        }
    }
    else if (input1[i][0] == 'C')
    {
        if (input1[i][1] == 'A')
            amount += 30 * 1.2;
        else if (input1[i][1] == 'B')
            amount += 20 * 1.2;
        else if (input1[i][1] == 'D')
            amount += 40 * 1.2;
        else
        {
            Console.WriteLine("Invalid Location");
            return -1;
        }
    }
```

```
            else if (input1[i][0] == 'D')
            {
               if (input1[i][1] == 'A')
                  amount += 70 * 1.2;
               else if (input1[i][1] == 'B')
                  amount += 60 * 1.2;
               else if (input1[i][1] == 'C')
                  amount += 40 * 1.2;
               else
               {
                  Console.WriteLine("Invalid Location"); return -1;
               }
            }
            else
            {
               Console.WriteLine("Invalid Location"); return -1;
            }
         }
         else
         {
            Console.WriteLine("Invalid Time of Travel"); return -2;
         }
      }
      return (int)amount;
   }
}
```