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**//8.1**

**#include <stdio.h>**

**#include <stdlib.h>**

**int gys(int x, int y) //求最大公约数的函数**

**{**

**int t, a;**

**for( a = 1; a < x + 1 && a < y + 1; a++ )**

**{**

**if( x%a == 0 && y%a == 0 )**

**t = a;**

**}**

**return t;**

**}**

**int max(int x, int y) //求两个最大的数的函数**

**{**

**int z;**

**if(x > y)**

**z = x;**

**else z = y;**

**return z;**

**}**

**int gbs(int x, int y) //求最小公倍数的函数**

**{**

**int a = max(x, y);**

**while(a%x != 0 || a%y != 0)**

**++a;**

**return a;**

**}**

**int main()**

**{**

**int m, n;**

**scanf("%d%d", &m, &n);**

**printf("%d %d", gys(m, n), gbs(m, n));**

**return 0;**

**}**

**//8.3**

**#include<stdio.h>**

**#include<math.h>**

**int de(int num);**

**int main()**

**{**

**int num;**

**printf("输入一个小于200的整数(输入非数字的字符结束判断)：");**

**while( scanf("%d", &num) )**

**{**

**if( de(num) )**

**printf("%d不是素数\n",num);**

**else**

**printf("%d是素数\n",num);**

**}**

**return 0;**

**}**

**int de(int num)**

**{**

**int k, m;**

**k = sqrt(num);**

**if( num >3 )**

**{**

**for( m = 2; k >= m; ++m ) //从2依次和n相除，若能整除，说明不是素数**

**{**

**if( num % m == 0 )**

**{**

**return 1;**

**break;**

**}**

**if( k <= m ) //相除到没有m可以使n整除时，即可知n为素数**

**return 0;**

**}**

**}**

**else if(num == 2 || num == 3)**

**return 0;**

**else**

**return 1;**

**}**

**//8.4**

**#include <stdio.h>**

**void tran(int a[][3]);**

**int main()**

**{**

**int i, j, a[3][3] = { {1, 2, 3}, {4, 5, 6}, {7, 8, 9} };**

**tran(a);**

**return 0;**

**}**

**void tran(int a[ ][3])**

**{**

**int i, j = 0, temp;**

**for(i = 0; i < 3; i++)**

**for(j = i; j < 3; j++)**

**{**

**temp = a[i][j];**

**a[i][j] = a[j][i];**

**a[j][i] = temp;**

**}**

**for(i = 0; i < 3; i++)**

**{**

**for(j = 0; j < 3; j++)**

**printf("%d ", a[i][j]);**

**printf("\n");**

**}**

**}**

**//8.5 输入的一个字符串按反序排放，主函数输入和输出**

**#include <stdio.h>**

**#define LONE 100**

**void tran(char array[], int i);**

**int main()**

**{**

**int i = 0;**

**char c, a[LONE];**

**printf("输入字符数量小于%d（用回车结束键入）：", LONE);**

**while(( c = getchar() ) != '\n')**

**{**

**a[i] = c;**

**i++;**

**}**

**tran(a, i);**

**printf("%s", a);**

**return 0;**

**}**

**void tran(char array[], int m)**

**{**

**int temp, i, t;**

**if( m%2 != 0)**

**{**

**t = (m + 1)/2 - 1;**

**for(i = 0; i < t, m > t; i++, m--)**

**{**

**temp = array[i];**

**array[i] = array[m - 1];**

**array[m - 1] = temp;**

**}**

**}**

**else**

**{**

**t = m/2 - 1;**

**for(i = 0; i <= t; i++, m--)**

**{**

**temp = array[i];**

**array[i] = array[m-1];**

**array[m - 1] = temp;**

**}**

**}**

**}**

**//8.6**

**#include <stdio.h>**

**#include <string.h>**

**char\* con(char a[], char b[], int lo);**

**int main()**

**{**

**int i, lon;**

**char a[100], b[100];**

**gets(a);**

**gets(b);**

**lon = strlen(a);**

**printf("%s", con(a, b, lon));**

**return 0;**

**}**

**char\* con(char a[], char b[], int lo)**

**{**

**int i = 0;**

**char c[300];**

**while(b[i] != '\0')**

**a[lo + i] = b[i], i++;**

**a[lo + i] = '\0';**

**return a;**

**}**

**//8.7 找一个字符串的元音字母，复制到另一个字符串，并输出**

**#include <stdio.h>**

**#define LONG 101**

**void seek(char const a[], int i);**

**int main()**

**{**

**char le[LONG], c;**

**int i;**

**printf("输入一个字符数量小于%d的字符串：", LONG - 1);**

**while(( c = getchar() ) != '\n' && i < LONG + 1)**

**{**

**i++;**

**}**

**seek(le, i);**

**return 0;**

**}**

**void seek(char const a[], int m)**

**{**

**char array[LONG];**

**int i, j = 0;**

**for(i = 0; i <= m; i++)**

**if(a[i] == 'a' || a[i] == 'e' || a[i] == 'i' || a[i] == 'o' || a[i] == 'u')**

**{**

**array[j] = a[i];**

**j++;**

**}**

**printf("%s", array);**

**}**

**//8.8**

**#include <stdio.h>**

**int main()**

**{**

**int i;**

**char a[5];**

**printf("输入四个数字：");**

**fgets(a, 5, stdin);**

**for ( i = 0; i < 4; ++i)**

**{**

**if (i) putchar(' ');**

**printf("%d", a[i] - '0');**

**}**

**return 0;**

**}**

**//8.10**

**#include <stdio.h>**

**void locate(char a[]);**

**int main()**

**{**

**char a[100];**

**gets(a);**

**locate(a);**

**return 0;**

**}**

**void locate(char a[])**

**{**

**int i, t = 0, num = 0, loc, longest\_word\_num, location; //location表示最长单词开始位置, num储存单词字符数**

**char c;**

**for(i = 0; (c = a[i]) != '\0'; i++)**

**{**

**++loc;**

**if(c != ' ')**

**{**

**++t;**

**num = t;**

**if(num > longest\_word\_num)**

**{**

**longest\_word\_num = num;**

**location = loc;**

**}**

**}**

**else t = 0;**

**}**

**t = location;**

**location -= longest\_word\_num;**

**for(i = location; i <= t; i++)**

**printf("%c", a[i]);**

**}**

**//8.14输入10个学生5门课成绩，**

**#include <stdio.h>**

**void avarage\_student( int a[][5] );**

**void avarage\_class( int a[][5] );**

**void highest\_point( int a[][5] );**

**void gap( int a[][5] );**

**int main()**

**{**

**int c, i, j, degrees[10][5];**

**printf("输入成绩（一个学生的所有成绩一起输入，输入成绩的顺序一样）:\n");**

**for( i = 0; i < 10; i++ )**

**for( j = 0; j < 5; j++ )**

**scanf( "%d", &degrees[i][j] );**

**avarage\_student( degrees );**

**avarage\_class( degrees );**

**highest\_point( degrees );**

**gap( degrees );**

**return 0;**

**}**

**void avarage\_student( int a[][5] )**

**{**

**int i, j;**

**float avarage = 0;**

**for( i = 0; i < 10; i++ )**

**{**

**for( j = 0; j < 5; j++ )**

**avarage += a[i][j];**

**avarage = avarage/5;**

**printf( "学生%d的平均成绩是%3.2f\n", i + 1, avarage );**

**}**

**}**

**void avarage\_class( int a[][5] )**

**{**

**int i, j;**

**float avarage = 0;**

**for( j = 0; j < 5; j++ )**

**{**

**for( i = 0; i < 10; i++ )**

**avarage += a[i][j];**

**avarage = avarage/10;**

**printf( "课程%d的平均分是%3.2f\n", j + 1, avarage );**

**}**

**}**

**void highest\_point( int a[][5] )**

**{**

**int i, j, point = 0, student, cla;**

**for( i = 0; i < 10; i++ )**

**{**

**for( j = 0; j < 5; j++ )**

**if( point <= a[i][j])**

**{**

**point = a[i][j];**

**student = i + 1;**

**cla = j + 1;**

**}**

**}**

**printf( "最高分是学生%d的课程%d成绩\n", student, cla );**

**}**

**void gap( int a[][5] ) //平均分方差**

**{**

**int i, j, m = 0, n = 0;//m为xi平方的总和，n为xi的总和**

**float g;**

**//计算m n**

**for( i = 0; i < 10; i++ )**

**for( j = 0; j < 5; j++ )**

**{**

**m += a[i][j] \* a[i][j];**

**n += a[i][j];**

**}**

**//计算方差**

**g = m/50 - ( n/50 ) \* ( n/50 );**

**printf( "所有课程平均分方差为%3.2f", g );**

**}**