امین ثابت اقدم

401655019

1.

```c
#include <stdio.h>
int avalt(int);
int main()
{
    int num,r;
    printf("please enter your number\n:");
    scanf("%d",&num);
    r=avalt(num);
    if(r == 1)
        printf("this number is prime");
    else
        printf("this number is not prime");
    return 0;
}
int avalt(int v)
{
    int i=v-1,b;
    for(i;i>1;i--)
    {
        b=v%i;
        if(b == 0)
            return 0;
    }
    return 1;
}
```

out(13,31,14):

```
please enter your number
:13
this number is prime⏎


---

please enter your number
:31
this number is prime⏎


---

please enter your number
:14
```

```
this number is not prime⏎
```

2.

```c
#include <stdio.h>
#include <stdlib.h>
void reg(int* st,int stnum);
void out(int *n,int stnum);
void mor(int *st, int stnum);

int main()
{
    int stnum;
    printf("please enter the number of students\n:");
    scanf("%d",&stnum);
    int *st = malloc(stnum * sizeof(int));
    reg(st,stnum);
    mor(st,stnum);
    out(st,stnum);
    free(st);
}
void reg(int* st,int stnum)
{
    int i;
    for(i=0;i<stnum;i++)
    {
        printf("please enter the student number %d code\n:",i+1);
        scanf("%d",&st[i]);
    }
}
void mor(int *st, int stnum)
{
    int temp, i, j, k;
    for (j = 0; j < stnum; ++j)
    {
        for (k = j + 1; k < stnum; ++k)
        {
            if (st[j] < st[k])
            {
                temp = st[j];
                st[j] = st[k];
                st[k] = temp;
            }
        }
    }
}
void out(int *n,int stnum)
{
    for(int i=0;i<stnum;i++)
```

```
            printf("\n%d\n",n[i]);
    }
```

out(4,1234,4321,12345,54321):

```
please enter the number of students
:4
please enter the student number 1 code
:1234
please enter the student number 2 code
:4321
please enter the student number 3 code
:54321
please enter the student number 4 code
:654321

654321

54321

4321

1234
```

3.

```
#include <stdio.h>
void bubble(int arr[], int n)
{
    int i, j;
    for (i = 0; i < n-1; i++) {
        for (j = 0; j < n-i-1; j++) {
            if (arr[j] > arr[j+1]) {
                int temp = arr[j];
                arr[j] = arr[j+1];
                arr[j+1] = temp;
            }
        }
    }
}
void pra(int arr[], int size)
{
    int i;
    for (i=0; i < size; i++)
        printf("%d ", arr[i]);
    printf("\n");
}
void read(int arr[],int size)
```

```c
{
    for (int i = 0; i < size; i++)
        scanf("%d", &arr[i]);
}
void merge(int arr1[], int n1, int arr2[], int n2, int ma[])
{
    int i = 0, j = 0, k = 0;
    while (i < n1 && j < n2)
    {
        if (arr1[i] < arr2[j])
            ma[k++] = arr1[i++];
        else
            ma[k++] = arr2[j++];
    }

    while (i < n1)
        ma[k++] = arr1[i++];
    while (j < n2)
        ma[k++] = arr2[j++];
}

int main()
{
    int arr1[5], arr2[5],mergea[10];
    int n1 = sizeof(arr1)/sizeof(arr1[0]);
    int n2 = sizeof(arr2)/sizeof(arr2[0]);
    printf("Enter 5 elements for the first array: ");
    read(arr1,n1);
    printf("Enter 5 elements for the second array: ");
    read(arr2,n2);
    bubble(arr1, n1);
    bubble(arr2, n2);
    printf("sorted first array\n:");
    pra(arr1, n1);
    printf("\nSorted second array\n:");
    pra(arr2, n2);
    merge(arr1, n1, arr2, n2, mergea);
    printf("\nMerged array\n:");
    pra(mergea, n1+n2);

    return 0;
}
```

out:

```
Enter 5 elements for the first array: 12345
54321
11111
123457
687634
Enter 5 elements for the second array: 1297362
1287368
```

```
28282171
1283820
29862135
sorted first array
:11111 12345 54321 123457 687634

Sorted second array
:1283820 1287368 1297362 28282171 29862135
Merged array
:11111 12345 54321 123457 687634 1283820 1287368 1297362 28282171 29862135
```

4.

```c
#include <stdio.h>
void del();
int size;
int main()
{
    int i;
    printf("please enter the ammount of chars you want\n:");
    scanf("%d",&size);
    char a[size];
    for(i=0;i<size;i++)
        scanf(" %c",&a[i]);
    del(a);
    printf (" \n duplicateds are deleted: ");
    for ( i = 0; i < size; i++)
    {
        printf ("\n %c \n", a[i]);
    }
    return 0;
}
void del(char *arr)
{
    int i,j,k;
    for ( i = 0; i < size; i ++)
    {
        for ( j = i + 1; j < size; j++)
        {
            if ( arr[i] == arr[j])
            {
                for ( k = j; k < size - 1; k++)
                {
                    arr[k] = arr [k + 1];
                }
                size--;
                j--;
            }
        }
    }
}
```

/

out:(6,aabb00):

```
please enter the ammount of chars you want
:6
aabb00

 duplicateds are deleted:
 a

 b

 0
```

5.

```c
#include <stdio.h>
unsigned long long int plus();
unsigned long long int stn();
void read();
int main()
{
    char str1[21],str2[21];
    unsigned long long int num1=0,num2=0,sum=0;
    printf("please enter your first number [20]\n:");
    read(str1);
    printf("please enter your second number [20]\n:");
    read(str2);
    num1=stn(str1);
    num2=stn(str2);
    sum = plus(num1,num2);
    printf("\n%llu",sum);
    return 0;
}
void read(char* *str)
{
    gets(str);
}
unsigned long long int stn(char *str)
{
    unsigned long long int num = 0;
    for (int i = 0; str[i] != '\0'; i++)
    {
        num = num * 10 + (str[i] - '0');
    }
    return num;
}
unsigned long long int plus(unsigned long long int num1,unsigned long long
```

```
int num2)
{
    unsigned long long int sum;
    sum = num1+num2;
    return sum;
}
```

out(12345678901234567890,09876543210987654321)

```
please enter your first number [20]
:12345678901234567890
please enter your second number [20]
:09876543210987654321

3775478038512670595↵
```

6.

```
#include <stdio.h>
int main()
{
    int i,len;
    printf("how many numers you got\n:");
    scanf("%d",&len);
    int n[len];
    for(i=0;i<len;i++)
    {
        printf("enter numer %d\n:",i+1);
        scanf("%d",&n[i]);
    }
    set(n,len);
    for(i=0;i<len;i++)
    {
        printf("%d\n",n[i]);
    }
}
void set(int *n, int len)
{
     int temp, i, j, k;
    for (j = 0; j < len; ++j)
    {
       for (k = j + 1; k < len; ++k)
       {
          if (n[j] > n[k])
          {
              temp = n[j];
              n[j] = n[k];
              n[k] = temp;
```

```
            }
         }
      }
   }
```

out(3,1234,4321,12345):

```
how many numers you got
:3
enter numer 1
:1234
enter numer 2
:4321
enter numer 3
:12345
1234
4321
12345
```

7.

```c
#include <stdio.h>
#include <string.h>
int main()
{
    char str[100];
    int count[256] = {0};
    printf("Enter a string ending with '.': ");
    scanf("%[^.]", str);
    int len = strlen(str);
    for (int i = 0; i < len; i++)
        count[str[i]]++;
    for (int i = 0; i < 256; i++)
    {
        if (count[i] > 0)
        {
            printf("%c occurs %d times\n", i, count[i]);
        }
    }
    return 0;
}
```

out(hello my little world, my little rose.):

```
Enter a string ending with '.': hello my little world, my little rose.
  occurs 6 times
```

```
, occurs 1 times
d occurs 1 times
e occurs 4 times
h occurs 1 times
i occurs 2 times
l occurs 7 times
m occurs 2 times
o occurs 3 times
r occurs 2 times
s occurs 1 times
t occurs 4 times
w occurs 1 times
y occurs 2 times
```

8.

```c
#include <stdio.h>
#include <stdlib.h>
#include <string.h>
void revstr(char* str,int len);
int main()
{
    int len = 1;
    char *sent = malloc(len * sizeof(char));
    printf("enter the word you want\n:");
    char c;
    int i = 0;
    while ((c = getchar()) != '\n' && c != EOF)
    {
        if (i == len - 1)
        {
            len *= 2;
            sent = realloc(sent, len * sizeof(char));
        }
        sent[i++] = c;
    }
    sent[i] = '\0';
    len = strlen(sent);
    char *sentold = malloc(len * sizeof(char));
    strncpy(sentold, sent, len);
    revstr(sent,len);
    if(strcmp(sent,sentold)==0)
        printf("\nYES, you can say word %s backwards!\n",sentold);
    else
        printf("\nNO, you can not say word %s backwards :(\n",sentold);
    puts(sent);
    free(sent);
    free(sentold);
    return 0;
}
void revstr(char* str,int len)
```

/

```
{
    int i,temp;
    for (i = 0; i < len/2; i++)
    {
        temp = str[i];
        str[i] = str[len - i - 1];
        str[len - i - 1] = temp;
    }
}
```

out(lol,bob,mario)

```
enter the word you want
:lol

YES, you can say word lol backwards!
lol


---


enter the word you want
:bob

YES, you can say word bob backwards!
bob


---


enter the word you want
:mario

NO, you can not say word mario backwards :(
oiram
```

9.

```
#include <stdio.h>
#include <string.h>
int main()
{
    char str1[100], str2[100];
    printf("Enter the first string: ");
    scanf("%s", str1);
    printf("Enter the second string: ");
    getchar();
    fgets(str2, 100, stdin);
```

```
    str2[strcspn(str2, "\n")] = 0;
    char *ptr = strstr(str2, str1);
    if (ptr != NULL)
        printf("The first string was found in the second string at position
%ld\n", ptr - str2);
    else
        printf("The first string was not found in the second string\n");
    return 0;
}
```

out(jamal,hi my name is jamal)

```
Enter the first string: jamal
Enter the second string: hi my name is jamal
The first string was found in the second string at position 14
```

10.

```
#include <stdio.h>
#include <string.h>
int main() {
    char str[100];
    printf("Enter a string: ");
    fgets(str, 100, stdin);
    str[strcspn(str, "\n")] = 0;
    char *word = strtok(str, " ");
    while (word != NULL)
    {
        if (strlen(word) == 4)
            printf("love ");
        else
            printf("%s ", word);
        word = strtok(NULL, " ");
    }
    return 0;
}
```

out(I hate you you made my life a nightmare):

```
Enter a string: I hate you you made my life a nightmare
I love you you love my love a nightmare ↵
```

11.

```c
#include <stdio.h>
void pr(int num[], int len)
{
    for(int i=0;i<=len;i++)
        printf("\n%d\n",num[i]);
}
int test(int num[],int len)
{
    int i,j;
    int const staticdev=num[(len+1)/2+i];
    for(i=0;i<=(len+1)/2;i++)
    {
        if(num[(len+1)/2+i]!=0)
        {
            for(j=0;j<=len;j++)
                num[j]=num[j]/staticdev;
                return 1;
        }
        else
        {
            i*=-1;
            if(num[(len+1)/2+i]!=0)
            {
                for(j=0;j<=len;j++)
                    num[j]=num[j]/staticdev;
                    return 1;
            }
            i*=-1;
        }
    }
    return 0;
}
int main()
{
    int len,i,j;
    printf("how many numbers do you have?\n:");
    scanf("%d",&len);
    len=len-1;
    int num[len];
    for(i=0;i<=len;i++)
    {
        printf("please enter number %d:\n",i+1);
        scanf(" %d",&num[i]);
    }
    j = test(num,len);
    if(j==1)
        pr(num,len);
    else
        printf("\ntheres no number, larger than 0");
}
```

out(5,4,4,2,4,4):

/

```
how many numbers do you have?
:5
please enter number 1:
4
please enter number 2:
4
please enter number 3:
2
please enter number 4:
4
please enter number 5:
4


2


2


1


2


2
am1nsab83@surfarch ~/D/p/HW (main)>
```

out(3,0,0,0):

```
how many numbers do you have?
:3
please enter number 1:
0
please enter number 2:
0
please enter number 3:
0

theres no number, larger than 0⏎
```

12.

```
#include <stdio.h>
#include <string.h>
char a[26]=
{'a','b','c','d','e','f','g','h','i','j','k','l','m','n','o','p','q','r','s
','t','u','v','w','x','y','z'};
char A[26]=
{'A','B','C','D','E','F','G','H','I','J','K','L','M','N','O','P','Q','R','S
','T','U','V','W','X','Y','Z'};
```

```
char vowel[10]={'A','E','I','O','U','a','e','i','o','u'};
int checka(char str[],int len)
{
    int count=0;
    for(int i=0;i<len;i++)
    {
        for(int j=0;j<=26;j++)
        {
            if(str[i]==a[j])
                count++;
            else
                continue;
        }
    }
    return count;
}
int checkA(char str[],int len)
{
    int count=0;
    for(int i=0;i<len;i++)
    {
        for(int j=0;j<=26;j++)
        {
            if(str[i]==A[j])
                count++;
            else
                continue;
        }
    }
    return count;
}
int checknum(char str[],int len)
{
    int count=0;
    for (int i = 0; i < len; i++)
    {
        if (str[i] >= '0' && str[i] <= '9')
            count++;
    }
    return count;
}
int checkvow(char str[],int len)
{
   int count=0;
    for(int i=0;i<len;i++)
    {
        for(int j=0;j<=10;j++)
        {
            if(str[i]==vowel[j])
                count++;
            else
                continue;
        }
    }
```

```
        return count;
    }
    int main()
    {
        char str[100];
        printf("please enter your string\n:");
        fgets(str,100,stdin);
        int len = strlen(str);
        int a=checka(str,len);
        int A=checkA(str,len);
        int num=checknum(str,len);
        int vow=checkvow(str,len);
        printf("the number of small chars:%d\nthe number of big chars:%d\nthe
    number of numbers:%d\nand at last the number of vowels:%d",a,A,num,vow);
        return 0;
    }
```

out(Hi My username is Am1nsab83):

```
please enter your string
:Hi My username is Am1nsab83
the number of small chars:17
the number of big chars:3
the number of numbers:3
and at last the number of vowels:8↵
```

13.

```
#include <stdio.h>
#include <string.h>

int main(void) {
    char str[100];
    int sum = 0;
    printf("Enter a string: ");
    fgets(str, 100, stdin);
    for (int i = 0; i < strlen(str); i++) {
        if (str[i] >= '0' && str[i] <= '9') {
            sum += str[i] - '0';
        }
    }
    printf("Sum of digits: %d\n", sum);
    return 0;
}
```

out(hi I have 3 apple and I want 5 more):

```
Enter a string: hi I have 3 apple and I want 5 more
Sum of digits: 8
```

در صورت وجود مشکل یا سوال به این آی دی در تلگرام پیام بدین

لینک به سایت

گیتهاب