

A-09 終極密碼

```
#include <stdio.h>
#include <time.h>
#include <stdlib.h>
void game(int,int,int);
int main(void)
{
    int answer;
    int left=1,right=1000;
    scanf("%d",&answer);
    while(1)
    {
        int guess;
        printf("%d ~ %d\n",left,right);
        scanf("%d",&guess);
        if(guess > right || guess < left) exit(1);
        if(guess == answer) break;
        else {
            if(guess > answer) right = guess;
            else left = guess;
        }
    }
    printf("BINGO!\n");
    system("pause");
}
```

A-10 搜尋陣列

```
#include <stdio.h>
#include <stdlib.h>
#include <time.h>
#define SIZE 20
int search(int [ ],int,int,int);
int main(void)
{
    int i,a[SIZE],from=0,key;
    srand(time(NULL));
    for(i=0;i<SIZE;i++)
        scanf("%d",&a[i]);
    scanf("%d",&key);
    while(from < SIZE) {
        int ans;
        ans = search(a,from,SIZE,key);
        if(ans == -1) {
            if(!from)
                printf("-1\n");
            break;
        } else {
            printf("%d\n",ans);
            from = ans + 1;
        }
    }
    system("pause");
}

int search(int a[ ],int from,int size,int key)
{
    int i;
    for(i=from;i<size;i++)
        if(a[i] == key)
            return i;
    return -1;
}
```

A-11 字元的取代

```
#include <stdio.h>
#include<stdlib.h>
void sub(char*,char,char);
int main(void)
{
    char a,b,s[ ] = "This is fun!";
    scanf("%c %c",&a,&b);
    sub(s,a,b);
    puts(s);
    system("pause");
    return 0;
}
void sub(char *s,char a,char b)
{
    while(*s != '\0') {
        if(*s == a)          /* 找到欲取代的字元 */
            *s = b;         /* 改變字元 */
        s++;
    }
}
```

A-12 維迦的家

```
#include<iostream>
#include<vector>
#include<algorithm>
using namespace std;
vector<int> num;

int main(){
    int n,r,s;

    cin>>r;
    num.clear();
    for(int i=0;i<r;i++){
        cin>>s;
        num.push_back(s);
    }
    sort(num.begin(),num.end());
    int mid=num[r/2];
    int sum=0;
    for(int i=0;i<r;i++){
        sum+=abs(num[i]-mid);
    }
    cout<<sum<<endl;

    system("PAUSE");
    return 0;
}
```

A-13 2 the 9s

```
#include<iostream>
#include<string>
using namespace std;
int main()
{
    string s;

    cin>>s;
    int v=0,degree=1;
    for(int k=0;k<s.size();k++)
        v+=s[k]-'0';
    while(v%9==0 && v!=9)
    {
        int sum=0;
        for(;v/=10)
            sum+=v%10;
        v=sum;degree++;
    }
    if(v%9)
        cout<<0<<endl;
    else
        cout<<degree<<endl;

    system("PAUSE");
    return 0;
}
```

A-14 A Mid-Summer Night' s Dream

```
#include <stdio.h>
#include <stdlib.h>
#define MAX_SIZE 1000000

int X[MAX_SIZE];

int comp(const void *a,const void *b)
{
    return(*(int *)a)-(*(int *)b);
}

void find_mid(int *X,int n)
{
    int min,max,nx,np,i;
    qsort(X,n,sizeof(int),comp);
    if(n%2==1)
    {
        min = X[n/2];
        for(nx=0,i=0;i<n;i++)
        {
            if(X[i]==min)
                nx++;
        }
        np = 1;
    }
    else
    {
        min = X[n/2-1],max = X[n/2];
        for(nx=0,i=0;i<n;i++)
        {
            if(min<=X[i]&&X[i]<=max)
                nx++;
        }
        np = max - min + 1;
    }
    printf("%d %d %d\n",min,nx,np);
}
```

```
}

int main()
{
    int n,i;

    scanf("%d",&n);
    for(i=0;i<n;i++)
        scanf("%d",&X[i]);
    find_mid(X,n);

    system("PAUSE");
    return 0;
}
```

B-22 河內塔遊戲

```
#include <stdio.h>
#include <stdlib.h>
void cmove(int,char,char,char);
int main(void)
{
    int n;
    scanf("%d",&n);
    cmove(n,'a','b','c');
    system("pause");
}
void cmove(int n,char a,char b,char c)
{
    static int times=0;
    if(n==1) {
        times++;
        printf("%d times: Move %d from tower %c to %c\n",times,1,a,c);
    } else {
        cmove(n-1,a,c,b);
        times++;
        printf("%d times: Move %d from tower %c to %c\n",times,n,a,c);
        cmove(n-1,b,a,c);
    }
}
```

B-23 大數運算

```
#include <stdio.h>
#include<stdlib.h>
int main(void)
{
    short a[200];
    int m=0,k,i,value,carry=0;
    scanf("%d",&value);
    for(i=0;i<200;i++)
        a[i]=0;
    a[m] =1;
    for(k=2;k<=value;k++) {
        for(i=0;i<=m;i++) {
            a[i] = a[i] * k;
            a[i] = a[i] + carry;
            if( (carry = a[i]/10) !=0 && i ==m)
                m++;
            a[i] = a[i] % 10;
        }
    }
    for(i=m;i>=0;i--)
        printf("%d",a[i]);
    printf("\n");
    system("pause");
}
```

B-24 Simply Emirp

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

int main(void){
    int start, end, count, temp, n;
    scanf("%d %d",&start,&end);

    for(int i = start;i <= end;i++){

        count = 0;
        for(int j = 2 ;j < i;j++)                //判定w是0否±_為cX質e數A
            if(i % j == 0)
                count += 1;
        if(count != 0) continue;                //若Y不cG為cX質e數A則h繼續o找±a下U一@個O數A

        temp = i;
        for(n=0;temp;temp/=10) n = n*10 + (temp%10); //反I轉a
        if(i == n) continue;                    //判定w反I轉a後a與P原i數A是0否±_相U等gCD
        for(int j = 2 ;j < n;j++)                //判定w反I轉a後a是0否±_為cX質e數A
            if(n % j == 0)
                count += 1;
        if(count != 0) continue;                //若Y不cG為cX質e數A則h繼續o找±a下U一@個O數A

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

    system("PAUSE");
    return 0;
}
```