

## Home Work 16 : Pointer Related Complete Home Work

Dry run these codes and see what will be the output. If you find some errors clearly mention those errors.

1)

```
void f1(int *, int);
void f2(int *, int);
int main()
{
    int a;
    int b;
    a=3;
    b=5;
    f1(&a,b);
    f2(&a,b);
    cout<< a<<" "<<b<<" ";
    cout<< a<<" "<<b;
    getchar();
}
void f1( int* p , int q)
{
    int tmp;
    tmp =*p;
    *p = q;
    q= tmp;
}
void f2( int* p , int q)
{
    int tmp;
    tmp =*p;
    *p = q;
    q= tmp;
}
```

2)

```
int fun2(char *a,char *b)
{
    for(; *a==*b;a++,b++)
        if(*a=='\0')
            return 0;
    return *a-*b;
}
```

```

int main(){
    char a[10]="date", b[10]="data";
    cout<<fun2(a,b)<<endl;
}

```

3)

```

void main()
{
    void *vp;
    char ch = 'g', *cp = "goofy";
    int j = 20;
    vp = &ch;
    cout<<*(char *)vp;
    vp = &j;
    cout<<*(int *)vp;
    vp = cp;
    cout<<(char *)vp + 3<<endl;
}

```

4)

```

void main()
{
    int const *p=5;
    cout<<++(*p);
}

```

5)

```

void main ()
{
    static char *s[ ] = {"black", "white", "yellow", "violet"};
    char **ptr[ ] = {s+3, s+2, s+1, s}, ***p;
    p = ptr;
    **++p;
    cout<<*--*++p + 3<<endl;
}

```

6)

```

char *ptr;
char myString[] = "programing I";
ptr = myString;
ptr += 5;
cout<<ptr;

```

7)

```
int arr[10] = {0, 1, 2, 3, 4, 5, 6, 7, 8, 9};
int *ptr = arr + 2;
cout<<ptr[ 7 ];
```

8)

```
char *buffer = " Hello World";
char *ptr = buffer;
ptr += 5;
cout<<ptr<<endl;
cout<<buffer;
```

9)

```
int x=20;
```

```
int &y =x;
int *p = &x;
x=x+20;
```

```
y=y+50;
cout<< *p << " "<< y;
```

10)

```
void magic(int *sp, int *ep){
    while (sp >= ep){
        cout << *sp << " ";
        sp--;
    }
    sp += 4;
    cout << endl;
    while (sp >= ep){
        cout << *sp << " ";
        sp--;
    }
    cout << endl;
}

int main(){
    int array[] = { 5, 4, 3, 2, 1, 2, 3, , 4, 5 };
    magic(array + 8, array);
    return 0;
}
```

11)

```

void my_fun(int *p, int *s) {
    s = p;
    *s = 23;
    int x = 5;
    s = &x;
    return;
}
int main() {
    int x = 3;
    int *p = &x;
    int *s;
    s = &x;
    my_fun(p, s);
    cout << "x = " << x << " *p=" << *p << " *s=" << *s;
    return 0;
}

```

12)

```

void Encrypt(char *T)
{
    for (int i = 0; *T != '\0'; i += 1)
    {
        if (*T == 'W' || *T == 'H' || *T == 'D')
            *T = '#';
        else if (*T >= 'a' && *T <= 'z')
            *T -= 32;
        else if (i % 2 == 0)
            *T = *T - 1;
        else
            *T = *&;
        T = T + 1;
    }
}
int main()
{
    char text[] = "Hello WorlD";
    Encrypt(text);
    cout << text << endl;
    return 0;
}

```

13)

```

int num = 0;

```

```

int* func(int num)
{
    num += 5;
    return &::num * num + 5;
}
int main()
{
    int num = 10;
    int * q = func(num);
    cout << *q;
    return 0;
}

```

14)

```

void fun(int *p, int *s) {
    s = p;
    *s = 10;
    int x = 5;
    s = &x;
    return;
}

int main() {
    int x = 5;
    int *p = &x;
    int *s;
    s = &x;
    fun(p, s);

    cout << "x = " << x << " *p=" << *p << " *s=" << *s;
    return 0;
}

```

15)

```

void f(int *p, int *q, int* k)
{
    p = q;
    f = p;
    q = f;
    *p = 2, *q=*f+3,*f=*f+1;
}

```

```

int i = 0, j = 1, f=6;
int main()
{
    f(&i, &j, &f);
    cout<<i<< f <<j;
    return 0;
}

```

16)

```

void My_Func ( int *q, int row, int col )
{
    int i, j ;
    for ( i = 0 ; i < row ; i++ )
    {
        for ( j = 0 ; j < i ; j++ )

            * ( q + i * col + j ) = * ( q + i * col + j ) *3.2 ;

    }
}
main()
{
    int a[5][5] = { 1, 2, 3, 4, 5, 6,7,8,9, 0,1, 6,3,3,4,1,9,8,6,1};
    My_Func ( a, 5, 5 );
}

```

17)

What is wrong with this program?

```

#include <iostream.h>
int main()
{
    int *p1 = new int ;
                *p1 = 100;
    if( p1!=NULL )
    {
        int *p2 = p1 ;
        delete p2 ;
    }

    cout << *p1 << endl ;

    return 0;
}

```

18)

```
int main ( )
{
char *s[4] = {"black", "white", "yellow", "violet"};

    cout<<*(s+1)+2)<<endl;
    cout<<*(s+2)+3);
return 0;
}
```

19)

```
int check1(char *x, char *y)
{
    return strcmp(x,y);
}

int check2(char *x, char *y)
{
    return strncmp(x,y,3);
}

int main()
{
    char e1[] = "Alpha";
    char e2[] = "Bravo";
    char e3[] = "Alpak";

    cout<<check1(e1, e2)<<endl;
    cout<<check1(e1, e1)<<endl;
    cout<<check2(e1, e3)<<endl;

    return 0;
}
```

20)

```
void print(const char* p){
    for(int i = 0; i < strlen(p);){
        cout<<p<<endl;
        p++;
    }
}

int main(){
```

```

char p[] ={'1','2','3','\0'};
print(p);
return 0;
}

```

21)

```

void print(const char* p){
    for(int i = 0; i < strlen(p); i++){
        cout<<p<<endl;
        p++;
    }
}
int main(){
    char p[] ={'a','b','c','\0'};
    print(p);
    return 0;
}

```

22)

```

int g_One=1;
void func(int* pInt){
    pInt=&g_One;
}
void func2(int*& rpInt){
    rpInt=&g_One;
}
int main(){
    int nvar=2;
    int* pvar=&nvar;
    func(pvar);
    cout<<*pvar<<endl;
    func2(pvar);
    cout<<*pvar<<endl;
    return 0;
}

```

23)

```

int main(){
    int array[] = {1,2,3,4,5};
    int*p = array;
    cout<<(p+(10-5)/2 == array+1); // not sure if it is possible
    return 0;
}

```



24)

```
int main(){
    int x = 10; // ok
    int *q = &x; // going good
    int const*const my_strange_const_friend=q; // this is cruel
    cout<<my_strange_const_friend <<endl; // speechless here
    cout<<*my_strange_const_friend <<endl;
    cout<<&my_strange_const_friend <<"\t"<<&q; // speechless here, again!
    return 0;
}
```

25)

```
int main(){
    int data = 10;
    int const * what;
    what = &data; // oh dear
    cout<<what<<"\t"
           <<*what<<"\\"
           <<&what; // interesting ;)
    return 0;
}
```