

```
#include<iostream.h>
#include<process.h>
#include<stdlib.h>
#include<dos.h>
```

```
struct multi
{
    long int r1,r2,total;
}s;
```

```
long r1,r2;
```

```
void easy(multi &s)
{
    s.r1=random(20)+1;
    s.r2=random(10)+1;
}
```

```
void medium(multi &s)
{
    s.r1=random(90)+11;
    s.r2=random(90)+11;
}
```

```
void hard(multi &s)
{
    s.r1=random(900)+101;
    s.r2=random(900)+101;
}
```

```
void calc(multi &c)
{
    c.total=c.r1*c.r2;
}
```

```
int main()
{
    system("cls");
    randomize();
    int guess,points=0;
    char ch;
    cout<<"MULTIPLICATION GAME"
    <<"\n***** MENU *****"
    <<"\n1. Kids level"
    <<"\n2. Legends level"
    <<"\n3. Ultra-Legends level"
    <<"\n\nEnter your choice:>";
    cin>>ch;
    system("cls");
    for(int i=0;i<5;i++)
    {
```

```
switch(ch)
{
    case '1': easy(s);
                break;
    case '2': medium(s);
                break;
    case '3': hard(s);
                break;
    default: cout<<"You are fool"
    <<"\nDon't give wrong choices";
                system("pause");
                exit(0);
}
calc(s);
cout<<s.r1<<" * "<<s.r2<<" = ";
cin>>guess;
if(guess==s.total)
{
    points++;
    cout<<"Correct\n";
}
else cout<<"Wrong\nCorrect is:"
    <<s.total<<endl;
    delay(1000);
}
cout<<"You have scored "<<points*10
    <<" points out of 50"<<endl;
system("pause");
return 0;
}
```

```
54 * 14 = 756
Correct
85 * 23 = 1955
Correct
41 * 48 = 1992
Wrong
Correct is:1968
95 * 67 = 5755
Wrong
Correct is:6365
75 * 49 = 3655
Wrong
Correct is:3675
You have scored 20 points out of 50
Press any key to continue.
```

//call by pointer swapping

```
#include<iostream.h>
```

```
#include<process.h>
```

```
void SwapByValue(int a, int b)
```

```
{
    int t=a;
    a=b;
    b=t;
    cout<<"Inside SwapByValue function: \n";
    cout<<"a="<<a<<"\tb="<<b<<endl;
}
```

```
void SwapByRef(int &a, int &b)
```

```
{
    int t=a;
    a=b;
    b=t;
    cout<<"Inside SwapByRef function: \n";
    cout<<"a="<<a<<"\tb="<<b<<endl;
}
```

```
void SwapByPointer(int *a, int *b)
```

```
{
    int t=*a;
    *a=*b;
    *b=t;
    cout<<"Inside SwapByPointer function: \n";
    cout<<"a="<<*a<<"\tb="<<*b<<endl;
}
```

```
int main()
```

```
{
    int a,b;
    system("cls");
    cout<<"Enter integer value of a:>";
    cin>>a;
    cout<<"Enter integer value of b:>";
    cin>>b;
    cout<<"Current value of a: "<<a<<endl;
    cout<<"Current value of b: "<<b<<endl;
    cout<<endl;
    SwapByValue(a,b);
    cout<<"Current value of a: "<<a<<endl;
    cout<<"Current value of b: "<<b<<endl;
    cout<<endl;
    SwapByRef(a,b);
    cout<<"Current value of a: "<<a<<endl;
    cout<<"Current value of b: "<<b<<endl;
    cout<<endl;
    SwapByPointer(&a,&b);
    cout<<"Current value of a: "<<a<<endl;
    cout<<"Current value of b: "<<b<<endl;
    cout<<endl;
    system("pause");
    return 0;
}
```

```
Enter integer value of a:>12
Enter integer value of b:>23
Current value of a: 12
Current value of b: 23
```

```
Inside SwapByValue function:
a=23    b=12
Current value of a: 12
Current value of b: 23
```

```
Inside SwapByRef function:
a=23    b=12
Current value of a: 23
Current value of b: 12
```

```
Inside SwapByPointer function:
a=12    b=23
Current value of a: 12
Current value of b: 23
```

Press any key to continue.