

4. (6points) What is the output of the following C++ program ?

```
#include <iostream>
using namespace std;

class B {
public:
    B() { z=-2; }
    B(int z_val) : z(z_val) {}
    virtual int get_val() { return (z-1); };
    int gv2() { return (z-2); }
private :
    int z;
};

class D1 : public B {
public:
    D1() { x=0; }
    D1(int x_val) : x(x_val) {}
    int get_val() { return x; };
private:
    int x;
};

class D2 : public B {
public:
    D2() { y=0; }
    D2(int y_val) : y(y_val) {}
    virtual int gv2() { return y*y; };
private:
    int y;
};

int main()
{
    B Zero(0);
    D1 Two(2);
    D2 Four(4);

    B* B_Array[3];
    B_Array[0] = &Zero;
    B_Array[1] = &Two;
    B_Array[2] = &Four;

    cout << "0 : " << B_Array[0]->get_val() << endl;
    cout << "1 : " << B_Array[0]->gv2() << endl;
    cout << "2 : " << B_Array[1]->get_val() << endl;
    cout << "3 : " << B_Array[2]->gv2() << endl;

    return 0;
}
```

Output :

5. (2points) What is software crisis? Explain in detail.

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