CSE 241 - 501 Final Examination

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I hereby pledge that I will strictly adhere to academic integrity codes and the work done on this examination is solely my own and I will not receive / give any help from/to anybody or source during this examination.

- What is the slicing Problem in C++? Does Java have a slicing Problem?
- What are the different beetween move constructor and copy constructor?

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a) Slicing problem is when you want to assign to Derived to Base (ex: Base* = &Derived). Some properties which derived has but Base don't have. You cannot reach these properties from base class pointer because Base pointer don't know about they are existing. This return you as losing some data).

Ex:

```
class A {
public:
    A(int x) { this->x = x }
    virtual ~A() {};
private:
    int x;
};
```

```
class B : public A {
public:
    B(int y) : A(0) { this->y = y }
    ~B() {}
private:
    int y;
};
```

```
int main() {
    A *a;
    B b;
    a = &b;
```

a->x; ✓

a->y; ✗

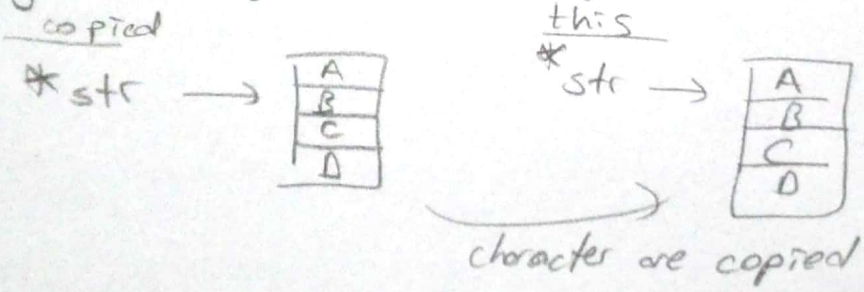
b) Move Constructor is provide us not creating tmp obj to assign another object. it give us faster program and less memory space.

Copy constructor is taking a object and copying their properties one by one to itself

Let say;

We have *str is pointing to obj.

and we using this copy constructor we need to copy all character in it one by one



But move constructor: