

ECE160B - Programming Languages for Electrical Engineers
Professor Hong
12/05/18
Quiz #6

Name _____

Score: ____ / 10

Partner Name: _____

Final Score: ____/10

This is a pair quiz. You may work in pairs, but you both must submit your own answers. As an incentive to not leave your partner behind, your final quiz grade will be the average of both grades.

1. Reading Code – Abstract Classes (5)

Read the following code:

```
#include <iostream>

using namespace std;

class SmartPhone{
    int price;
public:
    SmartPhone(int p) {
        price = p;
        cout << "SmartPhone constructor, price: " << price << endl;
    }

    virtual void printCountryOfOrigin() const {
        cout << "Unknown country of origin" << endl;
    }
};

class Samsung : public SmartPhone {
public:
    Samsung() : SmartPhone(800) {
        cout << "Samsung constructor" << endl;
    }

    void printCountryOfOrigin() const {
        cout << "Korea" << endl;
    }
};
```

```

class Apple : public SmartPhone {
public:
    Apple() : SmartPhone(1100) {
        cout << "Apple constructor" << endl;
    }

    void printCountryOfOrigin() const {
        cout << "United States" << endl;
    }
};

class Google : public SmartPhone {
public:
    Google() : SmartPhone(750) {
        cout << "Google constructor" << endl;
    }
};

int main()
{
    Samsung s;
    s.printCountryOfOrigin();
    Apple a;
    a.printCountryOfOrigin();
    Google g;
    g.printCountryOfOrigin();
    return 0;
}

```

Write the output (what is printed to the screen) of the code below:

2. Writing Code – Abstract Classes (5)

- Write an abstract Present class with a purely virtual function called printType.
- Write two derived classes, Clothing and Electronic.
- Define the printType functions for the Clothing and Electronic derived classes that prints the class's name (which is the type of present).
- Write a main function that creates an instance of Samsung and Apple and call this function.

Below is a sample output:

```
Clothing present
```

```
Electronic present
```