

NAME: DEEPAK SHITOLE
MIS NO: 642303019

SUBJECT: PPL
ASSIGNMENT NO:-05

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PROGRAM:

```
#include <iostream>
#include <string>

using namespace std;

class Animal {
public:
    Animal(string animalName) {
        name = animalName;
        cout << "An animal is born!" << endl;
    }

    ~Animal() {
        cout << "An animal has passed away." << endl;
    }

    void MakeSound() {
        cout << "This animal makes a sound." << endl;
    }

    void Introduce() {
        cout << "My name is " << name << "." << endl;
    }

private:
    string name;
};

class Dog : public Animal {
public:
```

```
Dog(string  dogName,  string  dogBreed)  :  Animal(dogName),
breed(dogBreed) {
    cout << "A dog is born!" << endl;
}

~Dog() {
    cout << "A dog has passed away." << endl;
}

void MakeSound() {
    cout << "Woof! Woof!" << endl;
}

void DisplayBreed() {
    cout << "I am a " << breed << " dog." << endl;
}

private:
    string breed;
};

class Cat : public Animal {
public:
    Cat(string  catName,  bool  catIsFurry)  :  Animal(catName),
isFurry(catIsFurry) {
        cout << "A cat is born!" << endl;
    }

    ~Cat() {
        cout << "A cat has passed away." << endl;
    }

    void MakeSound() {
        cout << "Meow! Meow!" << endl;
    }
}
```

```
}
```

```
void IsFurry() {  
    if (isFurry) {  
        cout << "I am a furry cat." << endl;  
    } else {  
        cout << "I am a hairless cat." << endl;  
    }  
}
```

```
private:  
    bool isFurry;  
};
```

```
class Elephant : public Animal {  
public:  
    Elephant(string      elephantName,      int      elephantAge)      :  
    Animal(elephantName), age(elephantAge) {  
        cout << "An elephant is born!" << endl;  
    }  
  
    ~Elephant() {  
        cout << "An elephant has passed away." << endl;  
    }  
  
    void MakeSound() {  
        cout << "Trumpet! Trumpet!" << endl;  
    }  
  
    void ShowAge() {  
        cout << "I am " << age << " years old." << endl;  
    }  
}
```

```
private:
```

```
int age;
};

class Fish : public Animal {
public:
    Fish(string  fishName,  string  fishColor)  :   Animal(fishName),
    color(fishColor) {
        cout << "A fish is born!" << endl;
    }

    ~Fish() {
        cout << "A fish has passed away." << endl;
    }

    void MakeSound() {
        cout << "Blub! Blub!" << endl;
    }

    void DisplayColor() {
        cout << "I am a " << color << " fish." << endl;
    }

private:
    string color;
};

int main() {
    Dog myDog("Buddy", "Golden Retriever");
    Cat myCat("Whiskers", true);
    Elephant myElephant("Dumbo", 10);
    Fish myFish("Nemo", "orange");

    myDog.Introduce();
    myDog.DisplayBreed();
    myDog.MakeSound();
}
```

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```
myCat.Introduce();  
myCat.IsFurry();  
myCat.MakeSound();
```

```
myElephant.Introduce();  
myElephant.ShowAge();  
myElephant.MakeSound();
```

```
myFish.Introduce();  
myFish.DisplayColor();  
myFish.MakeSound();
```

```
return 0;  
}
```

OUTPUT:

```
Processing triggers for man-db (2.10.1) ...  
local@local-VirtualBox:~/Downloads$ g++ animal.cpp  
local@local-VirtualBox:~/Downloads$ ./a.out  
An animal is born!  
A dog is born!  
An animal is born!  
A cat is born!  
An animal is born!  
An elephant is born!  
An animal is born!  
A fish is born!  
My name is Buddy.  
I am a Golden Retriever dog.  
Woof! Woof!  
My name is Whiskers.  
I am a furry cat.  
Meow! Meow!  
My name is Dumbo.  
I am 10 years old.  
Trumpet! Trumpet!  
My name is Nemo.  
I am a orange fish.  
Blub! Blub!  
A fish has passed away.  
An animal has passed away.  
An elephant has passed away.  
An animal has passed away.  
A cat has passed away.  
An animal has passed away.  
A dog has passed away.  
An animal has passed away.  
local@local-VirtualBox:~/Downloads$
```