

```
import random
```

```
class Question:
```

```
    def __init__(self, attribute, text):  
        self.text = text  
        self.is_true = attribute
```

```
class Object:
```

```
    def __init__(self, name, attributes, questions):  
        self.name = name  
        self.attributes = attributes  
        self.questions = questions
```

```
def initObjects():
```

```
    objs = {}
```

```
    objs["ball"] = Object("a ball", {"round", "bouncy", "portable"}, [  
        Question(True, "Can you bounce it?"),  
        Question(True, "Is it for kids?"),  
    ])
```

```
    objs["lamp"] = Object("a lamp", {"electric", "has a shade", "portable"}, [  
        Question(True, "Can you turn it on?"),  
        Question(True, "Can it be bright?"),  
        Question(True, "Does it have a shade?"),  
    ])
```

```
    objs["couch"] = Object("a couch", {"soft", "large", "sittable", "comfortable", "has  
cushions"}, [  
        Question(True, "Can you sit on it?"),  
        Question(True, "Is it comfortable?"),  
        Question(True, "Does it have cushions?"),  
    ])
```

```
    objs["bed"] = Object("a bed", {"soft", "large", "comfortable"}, [  
        Question(True, "Is it comfortable?"),  
        Question(True, "Can you sleep on it?"),  
        Question(True, "Can you lay in it?"),  
    ])
```

```
    objs["tv"] = Object("a T.V", {"hard", "large", "watchable", "has a  
screen", "electric"}, [  
        Question(True, "Can you watch something on it?"),  
        Question(True, "Will it entertain you?"),  
    ])
```

```

    objs["book"] = Object("a book", {"hard", "readable", "contains
paper","portable"}, [
    Question(True, "Can you read it?"),
    Question(True, "Will it entertain you?"),
    ])

    objs["laptop"] = Object("a laptop", {"hard", "portable", "has a screen","electric"},
    [
    Question(True, "Can you type on it?"),
    Question(True, "Is it portable?"),
    ])

    objs["chair"] = Object("a Mirror", {"Reflect light", "Contains glass", "has a
reflection"}, [
    Question(True, "Can you see yourself in it?"),
    Question(True, "Can you use to do makeup?"),
    ])

    objs["table"] = Object("a table", {"hard", "flat", "has legs","stationary","usable"},
    [
    Question(True, "Can you put things on it?"),
    Question(True, "Is it hard?"),
    Question(True, "Does it have legs?"),
    ])

    objs["plate"] = Object("a plate", {"round", "flat", "edible","dishware"}, [
    Question(True, "Can you eat off of it?"),
    Question(True, "Is it flat?"),
    ])

    objs["chair"] = Object("a chair", {"sittable", "portable", "has a
backrest","comfortable"}, [
    Question(True, "Can you sit on it?"),
    Question(True, "Is it comfortable?"),
    Question(True, "Does it have a backrest?"),
    ])

    objs["vacuum"] = Object("a vacuum", {"electric", "has a cord", "has
suction","stationary"}, [
    Question(True, "Can it clean floors?"),
    Question(True, "Does it have a cord?"),
    ])

    objs["sink"] = Object("a sink", {"porcelain", "has a faucet",
"usable","stationary"}, [
    Question(True, "Can you wash your hands in it")
    ])

```

```
return objs
```

```
def makeAttributeDict(objs):  
    d = {}  
    for o in objs.values():  
        for attr in o.attributes:  
            if attr not in d:  
                d[attr] = [o.name]  
            else:  
                d[attr].append(o.name)  
  
    return d
```

```
def play_game(objects):  
    print("Thank you for playing Object Detective!")  
    while True:  
        obj = random.choice(list(objects.values()))  
        attrs = obj.attributes  
        while len(attrs) > 0:  
            attr = random.choice(list(attrs))  
            answer = input("Does the object have the attribute '{}'? (y/n) ".format(attr))  
            if answer.lower() == "y" and attr in obj.attributes:  
                attrs.remove(attr)  
            elif answer.lower() == "n" and attr not in obj.attributes:  
                attrs.remove(attr)  
            else:  
                print("That answer is incorrect. Please try again.")  
        print("I think your object is " + obj.name + "!")  
        play_again = input("Do you want to play again? (y/n) ")  
        if play_again.lower() == "n":  
            return
```

```
if __name__ == "__main__":  
    objects = initObjects()  
    print("Welcome to object detective? Tell the Object Detective what you're  
thinking of!")  
    while True:  
        start_game = input("Welcome to Object Detective. Are you ready to be  
interrogated? (y/n) ")  
        if start_game.lower() == "y":  
            play_game(objects)  
        else:  
            break
```

