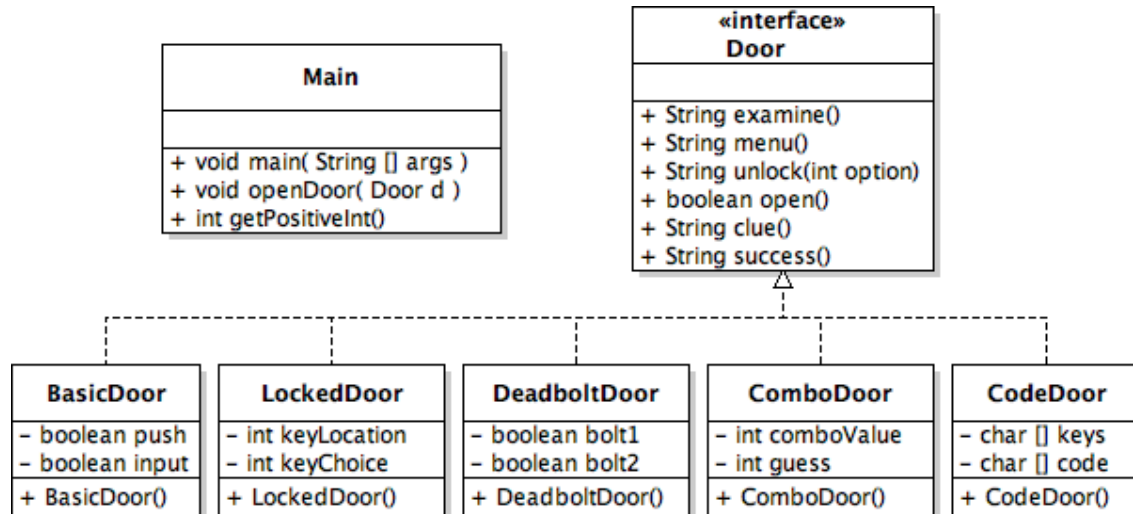


CECS 277 – Lab 8

Escape Room

Write a program that simulates an escape room by having the user open a series of three doors randomly chosen from several different types of doors. Use the following class structure for your program (you must create Main, Door, and BasicDoor, plus any two other types of doors for full credit. You can then add 1 or 2 additional doors for 2 points of extra credit each (must be fully working and correct, no partial extra credit):



Methods (the interface forces all implementing classes to override its methods):

1. `examine()` – returns a string description of the door.
2. `menu()` – returns a list of options the user can do to unlock the door.
3. `clue()` – returns a clue to help the user unlock the door.
4. `success()` – returns the success message for the door.
5. `unlock(int choice)` – passes in the user's menu selection, checks that it is in the bounds of the menu choices, and then performs the action associated with that choice in the attempt to open the door. Returns text related to user action.
6. `open()` – tests to see if the door has been unlocked, returns true if it is.
7. `openDoor(Door d)` – passes in the door the user will try to unlock. It should call `examine`, then `menu`, get the user's input, and pass the input to the `unlock` method. Then try to open the door, if it was successful, call `success`, otherwise, call `clue` and then repeat from the menu until the user successfully opens the door.

Examples of Examine, Menu & Clues –

BasicDoor	LockedDoor	DeadboltDoor	ComboDoor	CodeDoor
A door that can be pushed or pulled.	A door that can be opened with a key. Look around to see if you can find it.	A door with two deadbolts. Both need to be unlocked for the door to open, but you can't tell if they are locked or unlocked	A door with a combination lock. You can spin the dial to a number 1-10.	A door with a coded keypad with three characters. Each key toggles a value with X or O.
1. Push 2. Pull	1. Look Under Mat 2. Look Under Flower Pot 3. Look Under Fake Rock	1. Toggle Bolt 1 2. Toggle Bolt 2	Enter # 1-10:	1. Press Key 1 2. Press Key 2 3. Press Key 3
Try the other door	Look somewhere else.	One is in the correct position.	Too High or Too Low	Number of correct items

Example Output:

```
Welcome to the Escape Room.
You must unlock 3 doors to escape...

You encounter a basic door.
You can either push it or pull it to open.
1. Push
2. Pull
1
You push the door
Congratulations, you opened a door.

You encounter a door with a combination lock.
You can spin the dial to a number 1-10.
Enter a number (1-10): 5
You turn the dial...
You feel resistance as you turn the dial, it must be lower.
Enter a number (1-10): 2
You turn the dial...
You feel resistance as you turn the dial, it must be lower.
Enter a number (1-10): 1
You turn the dial...
You found the right value and opened the door.

You encounter a double deadbolt door, both deadbolts must
be unlocked to open the door, but you can't tell if they're
locked or unlocked.
1. Toggle Bolt 1
2. Toggle Bolt 2
1
You toggle the first bolt.
You jiggle the door. It's locked.
1. Toggle Bolt 1
2. Toggle Bolt 2
1
You toggle the first bolt.
You jiggle the door. It feels like of the bolts is unlocked.
1. Toggle Bolt 1
2. Toggle Bolt 2
2
You toggle the second bolt.
You unlocked both deadbolts and opened the door
Congratulations! You escaped...this time.
```