

```
package birds;
public abstract class Bird {public abstract void chirp();}
```

```
package birds;
public class Goose extends Bird {
    @Override
    public void chirp() {System.out.println("Honk");}
}
```

```
package birds;
public class Mallard extends Bird {
    @Override
    public void chirp() {System.out.println("Quack");}
}
```

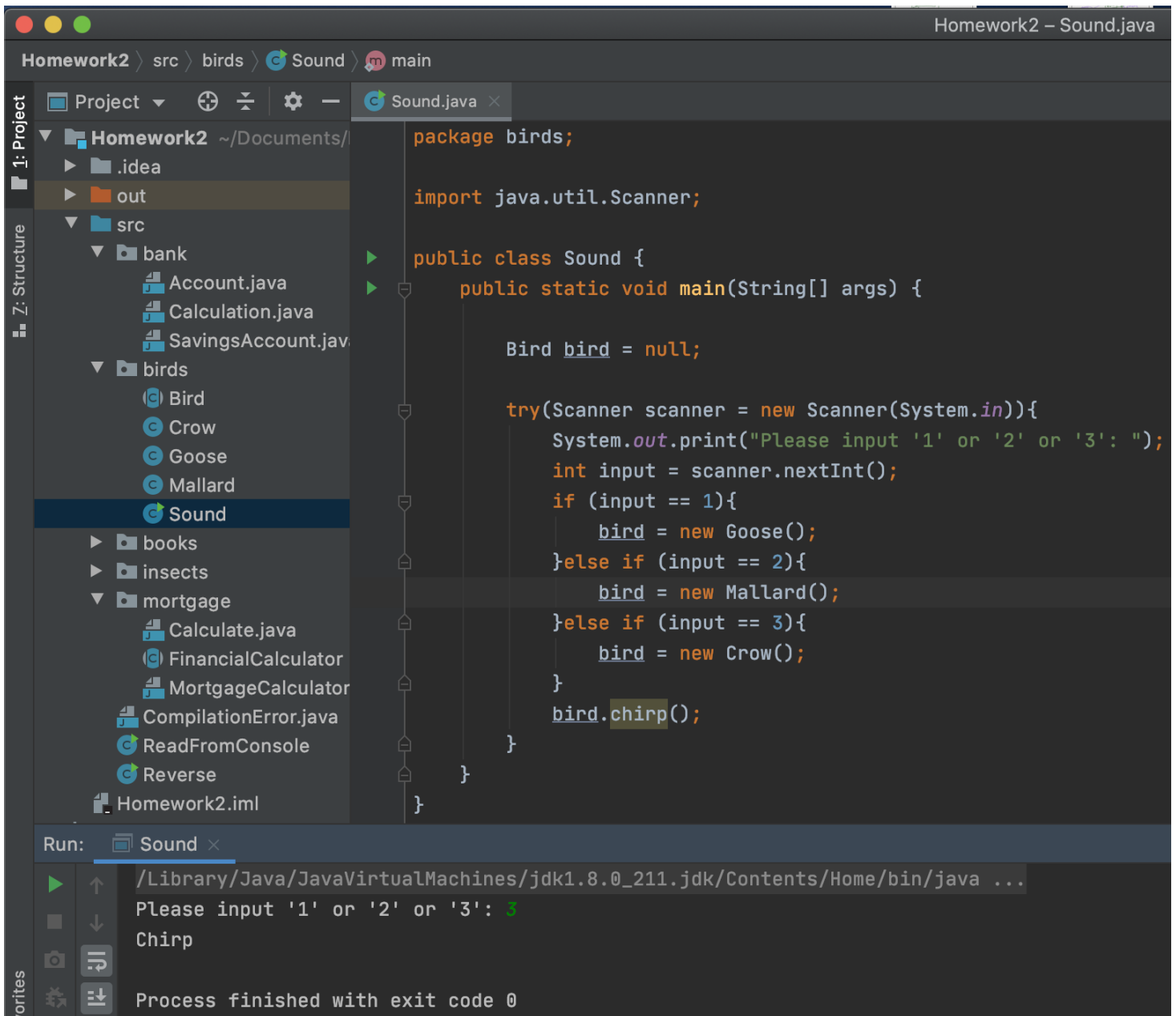
```
package birds;
public class Crow extends Bird {
    @Override
    public void chirp() {System.out.println("Chirp");}
}
```

```
package birds;
import java.util.Scanner;
public class Sound {
    public static void main(String[] args) {
        Bird bird = null;
        try(Scanner scanner = new Scanner(System.in)){
            System.out.print("Please input '1' or '2' or '3': ");
            int input = scanner.nextInt();
            if (input == 1){
                bird = new Goose();
            }else if (input == 2){
                bird = new Mallard();
            }else if (input == 3){
                bird = new Crow();
            }
            bird.chirp();
        }
    }
}
```

```
Run: Sound x
/Library/Java/JavaVirtualMachines/jdk1.8.0_211.jdk/Contents/Home/bin/java ...
Please input '1' or '2' or '3': 1
Honk
Process finished with exit code 0
```

```
Run: Sound x
/Library/Java/JavaVirtualMachines/jdk1.8.0_211.jdk/Contents/Home/bin/java ...
Please input '1' or '2' or '3': 2
Quack
Process finished with exit code 0
```

The output is "Chirp".



The screenshot shows an IDE window titled "Homework2 - Sound.java". The breadcrumb navigation at the top indicates the file path: `Homework2 > src > birds > Sound > main`. The left sidebar displays the project structure, with the `Sound` class under the `birds` package selected. The main editor area shows the following Java code:

```
package birds;

import java.util.Scanner;

public class Sound {
    public static void main(String[] args) {

        Bird bird = null;

        try(Scanner scanner = new Scanner(System.in)){
            System.out.print("Please input '1' or '2' or '3': ");
            int input = scanner.nextInt();
            if (input == 1){
                bird = new Goose();
            }else if (input == 2){
                bird = new Mallard();
            }else if (input == 3){
                bird = new Crow();
            }
            bird.chirp();
        }
    }
}
```

Below the editor, the "Run" tab is active, showing the command used to execute the program: `/Library/Java/JavaVirtualMachines/jdk1.8.0_211.jdk/Contents/Home/bin/java ...`. The output of the program is displayed as follows:

```
Please input '1' or '2' or '3': 3
Chirp
Process finished with exit code 0
```

Chapter 6, #10b.

I have to implement the abstract method by overriding it in my child class which is abstract and has no implementation in the Bird class.

```
package birds;
public class Crow extends Bird {
    @Override
    public void chirp() {
        System.out.println("Chirp");
    }
}
```

