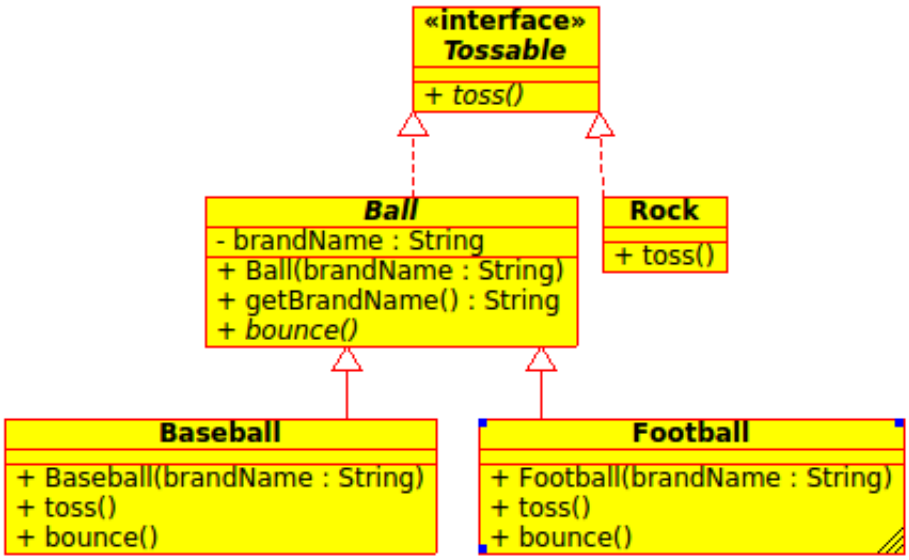
Interfaces and Abstract Classes



1. Fill in each cell of the table with one of three values:

   - **Y** An object of this type could be assigned to a variable of this type.
   - **N** An object of this type could *not* be assigned to a variable of this type.
   - **–** It is not possible to instantiate an object of this type.

		Variable Type				
		Tossable	Ball	Rock	Baseball	Football
Object Type	Tossable	–	–	–	–	–
	Ball	–	–	–	–	–
	Rock	Y	N	Y	N	N
	Baseball	Y	Y	N	Y	N
	Football	Y	Y	N	N	Y

2. Write the source code for the UML diagram.

   - In *Rock.java*, the `toss` method should print `"Tossing a Rock!"`.
   - In *Baseball.java*, the `toss` method should print `"Tossing a Baseball!"`, and the `bounce` method should print `"Bouncing a Baseball!"`.
   - In *Football.java*, the `toss` method should print `"Tossing a Football!"`, and the `bounce` method should print `"Bouncing a Football!"`.

3. Indicate whether each code snippet will:

- **N** – not compile;
- **X** – compile but generate an exception at run-time; or
- **R** – compile and run without generating an exception.

	Code Snippet	**Result**
a)	`Ball ball = new Football("Spalding");`	R
b)	`Ball ball = new Football("Spalding");` `Baseball baseball = (Baseball) ball;`	X
c)	`Object obj = new Baseball("Spalding");`	R
d)	`Object obj = new Baseball("Spalding");` `Tossable tossable = obj;`	N
e)	`Tossable tossable = new Baseball("Spalding");` `Object obj = tossable;`	R
f)	`Tossable tossable = new Baseball("Spalding");` `tossable.getBrandName();`	N