

## Practice Quiz 5

1. Utilize the program to the right to answer the following questions.

1.1 In one line of code, declare a **Student** object named **jif** with the last name "Young" and a graduation year of 2017.

1.2 In one line of code, modify the object you just declared such that its **gradYear** is 2018.

```
1 class Student {
2     gradYear: number;
3     lastName: string;
4     constructor(a: number, b: string) {
5         this.gradYear = a;
6         this.name = b;
7     }
8 }
```

2. Write a function called **getBooks** that takes in a **Library** object and returns a number. If the **Library** is open, it should return the number of books it contains. Otherwise, it should print "closed" and return -1.

```
1 class Library {
2     books: string[];
3     isOpen: boolean;
4 }
```

3. As you answer the following questions, trace through the program on the right using the WaterAnimal class and related functions defined to the left.

```

1 class WaterAnimal {
2   mass: number;
3   species: string;
4   constructor(a: number, c: string) {
5     this.mass = a;
6     this.species = c;
7   }
8 }
9 export let biggestOne = (arr: WaterAnimal[]):
  number => {
10  let x = 0;
11  for (let i = 0; i < arr.length; i++) {
12    if (arr[i].mass > x) {
13      x = arr[i].mass;
14    }
15  }
16  return x;
17 };
18 export let danger = (a: WaterAnimal): void => {
19   if (a.species === "great_white") {
20     print("danger");
21   }
22 };

```

```

1 let phyllis: WaterAnimal = new WaterAnimal(1200, "
  manatee");
2 let kelly: WaterAnimal = new WaterAnimal(5000, "
  great_white");
3 let y = biggestOne([phyllis, kelly]);

```

3.1 What does y store when the program completes?

3.2 Using one of the WaterAnimal objects declared in the program above as an argument, provide a call to danger that will cause "danger" to be printed.

3.3 What is phyllis's type?

4. Consider the Exam class to the left as you answer the following questions in order.

```

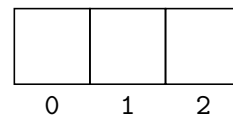
1 class Exam {
2   beenGraded: boolean;
3   scores: number[];
4   constructor(a: boolean, b: number[]) {
5     this.beenGraded = a;
6     this.scores = b;
7   }
8 }
9 export let abc = (exam: Exam): number => {
10  let x = 0;
11  for (let i = 0; i < exam.scores.length; i++) {
12    x += exam.scores[i];
13  }
14  return x / exam.scores.length;
15 };
16 export let curve = (exam: Exam, amnt: number): void
  => {
17   if (!exam.beenGraded) {
18     for (let i = 0; i < exam.scores.length; i++)
19       {
20         exam.scores[i] += amnt;
21       }
22   }
23 };
24 let main = async () => {
25   let exam1 = new Exam(true, [60, 70, 80]);
26   let exam2 = new Exam(false, [85, 95, 70]);
27 };

```

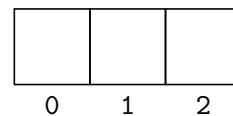
4.1 What is returned by abc(exam1)?

4.2 What is returned by abc(exam2)?

4.3 What values will exam2.scores store after the function call curve(exam2, 5) executes?



4.4 What values will exam1.scores store after the function call curve(exam1, 10) executes?



## Practice Quiz 5

1. Utilize the program to the right to answer the following questions.

1.1 In one line of code, declare a `Student` object named `jif` with the last name "Young" and a graduation year of 2017. `let jif = new Student(2017, "Young");`

1.2 In one line of code, modify the object you just declared such that its `gradYear` is 2018. `jif.gradYear = 2018;`

```
1 class Student {
2   gradYear: number;
3   lastName: string;
4   constructor(a: number, b: string) {
5     this.gradYear = a;
6     this.name = b;
7   }
8 }
```

2. Write a function called `getBooks` that takes in a `Library` object and returns a number. If the `Library` is open, it should return the number of books it contains. Otherwise, it should print "closed" and return -1.

```
1 class Library {
2   books: string[];
3   isOpen: boolean;
4 }
```

```
1 let getBooks = (lib: Library): number => {
2   if (lib.isOpen) {
3     return lib.books.length;
4   } else {
5     print("closed");
6     return -1;
7   }
8 };
```

3. As you answer the following questions, trace through the program on the right using the WaterAnimal class and related functions defined to the left.

```

1 class WaterAnimal {
2   mass: number;
3   species: string;
4   constructor(a: number, c: string) {
5     this.mass = a;
6     this.species = c;
7   }
8 }
9 export let biggestOne = (arr: WaterAnimal[]):
  number => {
10  let x = 0;
11  for (let i = 0; i < arr.length; i++) {
12    if (arr[i].mass > x) {
13      x = arr[i].mass;
14    }
15  }
16  return x;
17 };
18 export let danger = (a: WaterAnimal): void => {
19   if (a.species === "great_white") {
20     print("danger");
21   }
22 };

```

```

1 let phyllis: WaterAnimal = new WaterAnimal(1200, "
  manatee");
2 let kelly: WaterAnimal = new WaterAnimal(5000, "
  great_white");
3 let y = biggestOne([phyllis, kelly]);

```

3.1 What does y store when the program completes? **5000**

3.2 Using one of the WaterAnimal objects declared in the program above as an argument, provide a call to danger that will cause "danger" to be printed.  
danger(kelly)

3.3 What is phyllis's type?

WaterAnimal

4. Consider the Exam class to the left as you answer the following questions in order.

```

1 class Exam {
2   beenGraded: boolean;
3   scores: number[];
4   constructor(a: boolean, b: number[]) {
5     this.beenGraded = a;
6     this.scores = b;
7   }
8 }
9 export let abc = (exam: Exam): number => {
10  let x = 0;
11  for (let i = 0; i < exam.scores.length; i++) {
12    x += exam.scores[i];
13  }
14  return x / exam.scores.length;
15 };
16 export let curve = (exam: Exam, amnt: number): void
  => {
17   if (!exam.beenGraded) {
18     for (let i = 0; i < exam.scores.length; i++)
19       {
20         exam.scores[i] += amnt;
21       }
22   }
23 };
24 let main = async () => {
25   let exam1 = new Exam(true, [60, 70, 80]);
26   let exam2 = new Exam(false, [85, 95, 70]);
27 };

```

4.1 What is returned by abc(exam1)? **70**

4.2 What is returned by abc(exam2)?  
**83.33**

4.3 What values will exam2.scores store after the function call curve(exam2, 5) executes?

90	100	75
0	1	2

4.4 What values will exam1.scores store after the function call curve(exam1, 10) executes?

60	70	80
0	1	2