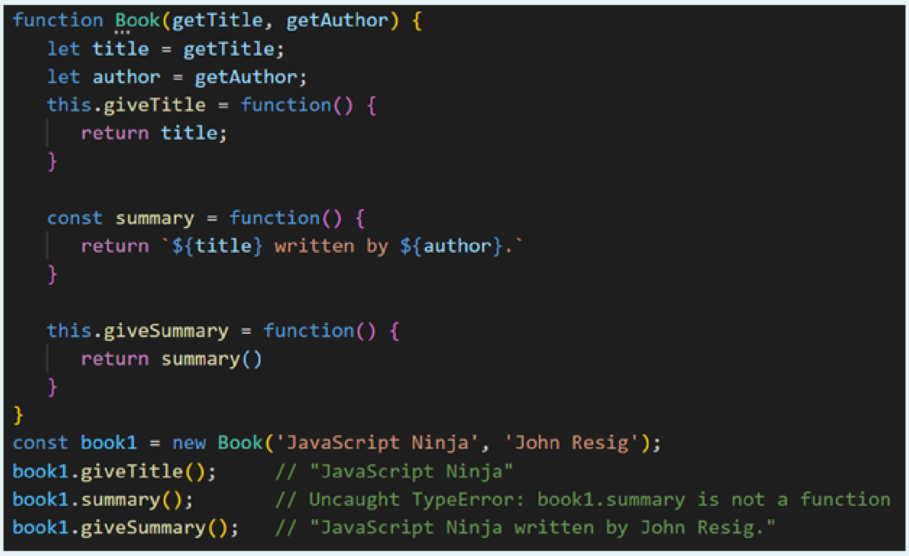
Started on	Tuesday, 5 September 2023, 6:52 PM
State	Finished
Completed on	Tuesday, 5 September 2023, 7:15 PM
Time taken	22 mins 35 secs
Marks	9.67/15.00
Grade	**6.44** out of 10.00 (**64.44**%)

QUESTION 1

Correct

Mark 1.00 out of 1.00

What principle does the given code correspond to?



```
function Book(getTitle, getAuthor) {
   let title = getTitle;
   let author = getAuthor;
   this.giveTitle = function() {
      return title;
   }

   const summary = function() {
      return `${title} written by ${author}.`
   }

   this.giveSummary = function() {
      return summary()
   }
}
const book1 = new Book('JavaScript Ninja', 'John Resig');
book1.giveTitle();      // "JavaScript Ninja"
book1.summary();        // Uncaught TypeError: book1.summary is not a function
book1.giveSummary();    // "JavaScript Ninja written by John Resig."
```

Select one:

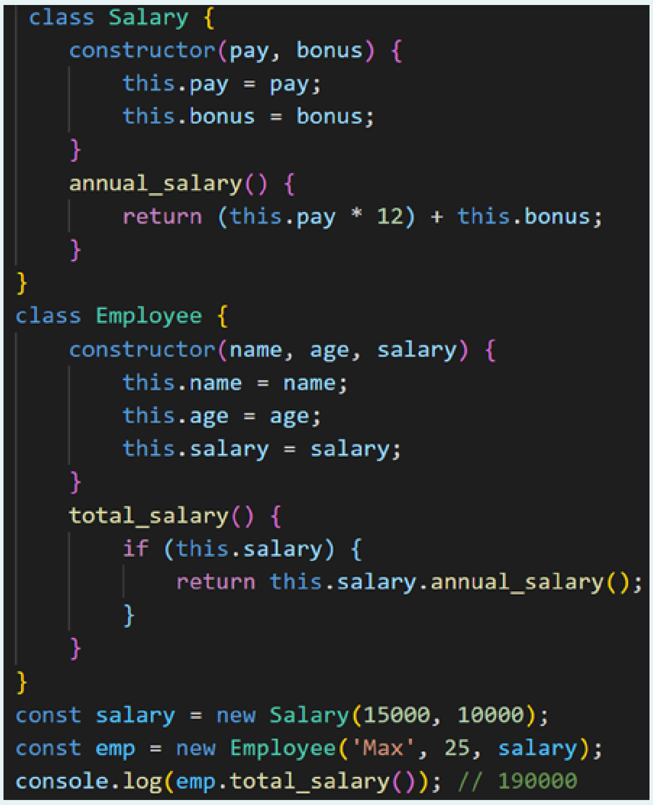
- a. composition
- [✓ b. abstraction] ✓
- c. polymorphism
- d. none of the listed

QUESTION 2

Incorrect

Mark 0.00 out of 1.00

What is the type of relationship between the objects in these classes?



```
 class Salary {
    constructor(pay, bonus) {
        this.pay = pay;
        this.bonus = bonus;
    }
    annual_salary() {
        return (this.pay * 12) + this.bonus;
    }
}
class Employee {
    constructor(name, age, salary) {
        this.name = name;
        this.age = age;
        this.salary = salary;
    }
    total_salary() {
        if (this.salary) {
            return this.salary.annual_salary();
        }
    }
}
const salary = new Salary(15000, 10000);
const emp = new Employee('Max', 25, salary);
console.log(emp.total_salary()); // 190000
```

Select one:

a. composition

b. aggregation

c. none of the listed

[✓ d.] association ✖

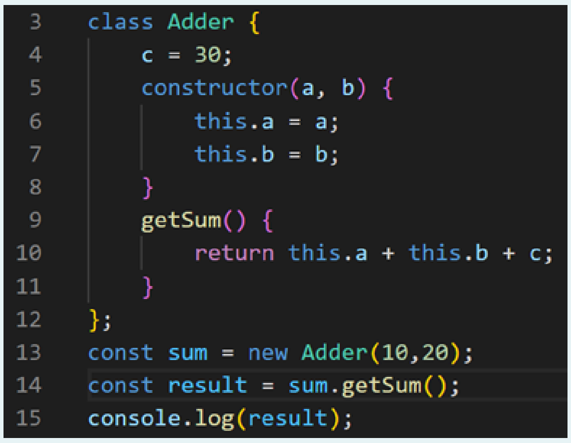
e. inheritance

QUESTION 3

Incorrect

Mark 0.00 out of 1.00

What is the result of executing the following program?



```
class Adder {
    c = 30;
    constructor(a, b) {
        this.a = a;
        this.b = b;
    }
    getSum() {
        return this.a + this.b + c;
    }
};
const sum = new Adder(10,20);
const result = sum.getSum();
console.log(result);
```

Select one:

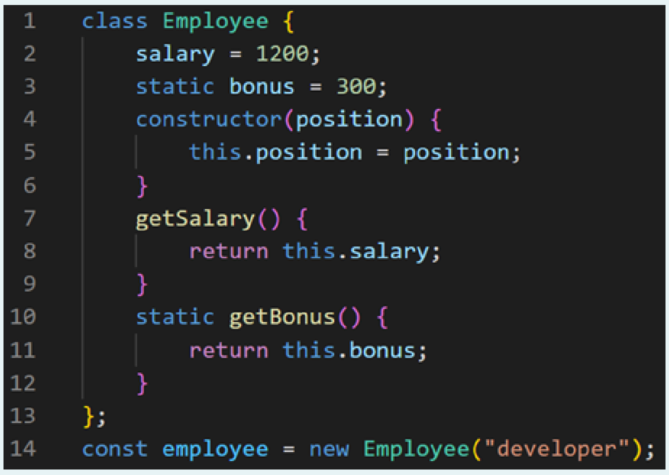
- ○ a. null
- ○ b. 30
- ○ c. undefined
- ● d. 60 ✖
- ○ e. ReferenceError

QUESTION 4

Correct

Mark 1.00 out of 1.00

Which of the following examples of working with fields and methods of this class are incorrect?



```
class Employee {
    salary = 1200;
    static bonus = 300;
    constructor(position) {
        this.position = position;
    }
    getSalary() {
        return this.salary;
    }
    static getBonus() {
        return this.bonus;
    }
};
const employee = new Employee("developer");
```

Select one or more:

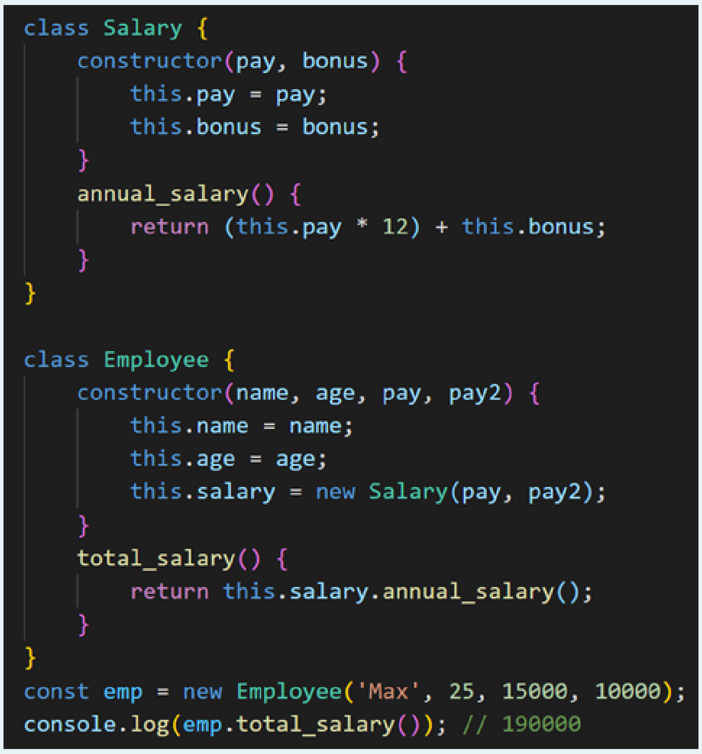
- [✓ a.] Employee.salary ✓
- b. employee.salary
- c. employee.position
- d. employee.getSalary()
- [✓ e.] employee.bonus ✓
- f. Employee.bonus
- [✓ g.] employee.getBonus() ✓
- [✓ h.] Employee. position ✓

QUESTION **5**

Incorrect

Mark 0.00 out of 1.00

What is the type of relationship between the objects in these classes?



```
class Salary {
    constructor(pay, bonus) {
        this.pay = pay;
        this.bonus = bonus;
    }
    annual_salary() {
        return (this.pay * 12) + this.bonus;
    }
}

class Employee {
    constructor(name, age, pay, pay2) {
        this.name = name;
        this.age = age;
        this.salary = new Salary(pay, pay2);
    }
    total_salary() {
        return this.salary.annual_salary();
    }
}
const emp = new Employee('Max', 25, 15000, 10000);
console.log(emp.total_salary()); // 190000
```

Select one:

- a. composition
- b. none of the listed
- c. inheritance
- [✓ d. aggregation] ✗
- e. association

QUESTION **6**

Correct

Mark 1.00 out of 1.00

Which of the following methods calls a function with a given context this and an array of arguments?

Select one:

- a. bind()
- b. call()
- c. setContext()
- [✓ d. apply()] ✓
- e. create()

QUESTION 7

Correct

Mark 1.00 out of 1.00

Which of the following methods creates a new function that at the time of the call has a specific assigned value of this, as well as a given sequence of arguments?

Select one or more:

- ☐ a. apply()
- ☐ b. call()
- ☑ c. bind() ✓
- ☐ d. setContext()
- ☐ e. create()

QUESTION 8

Correct

Mark 1.00 out of 1.00

Which keyword(s) is (are) required for ES6 Class definition?

Select one or more:

- ☑ a. class ✓
- ☐ b. static
- ☐ c. base
- ☐ d. super
- ☐ e. private
- ☐ f. set
- ☐ g. constructor

QUESTION 9

Correct

Mark 1.00 out of 1.00

Which of the above concepts are best practices in software development?

Select one or more:

- ☐ a. none of the listed
- ☑ b. High Cohesion ✓
- ☐ c. High Coupling
- ☐ d. Low Cohesion
- ☑ e. Low Coupling ✓

QUESTION 10

Partially correct

Mark 0.67 out of 1.00

Which of the following statements about polymorphism are correct?

Select one or more:

- [✓ a.] polymorphism is achieved through abstraction ✗
- [✓ b.] polymorphism often uses inheritance ✓
- [✓ c.] it provides an ability to call the same method on different JavaScript objects ✓
- d. polymorphism does not promote code reuse
- e. all of the listed

QUESTION 11

Correct

Mark 1.00 out of 1.00

How can you natively implement private data in JavaScript? (please, consider the latest proposals in this direction)

Select one:

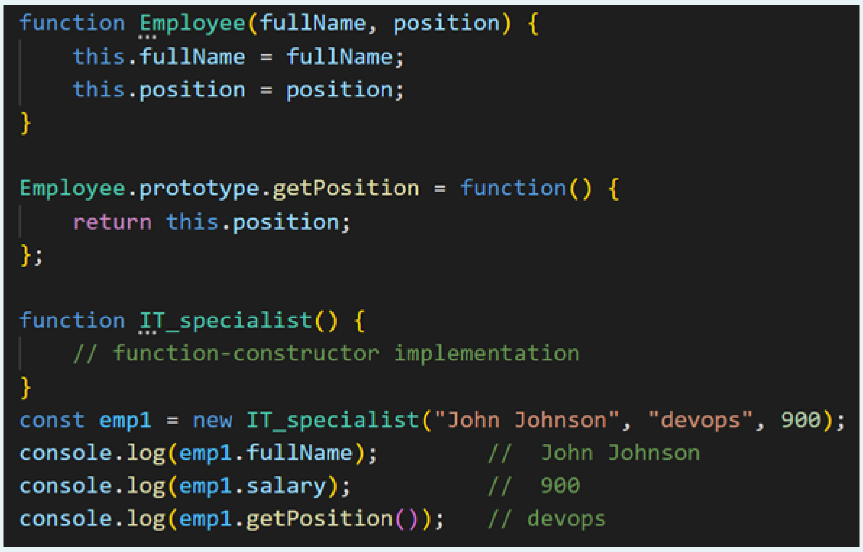
- a. using _
- b. using private keyword
- c. using closures
- d. there is no such possibility yet
- [✓ e.] using # ✓

QUESTION 12

Correct

Mark 1.00 out of 1.00

For the given source code, you need to implement the IT_specialist constructor function, which takes 3 parameters: fullName, position, salary and prototypically inherits from Employee. Indicate which of the prototypal inheritance implementations is correct.



```
function Employee(fullName, position) {
    this.fullName = fullName;
    this.position = position;
}

Employee.prototype.getPosition = function() {
    return this.position;
};

function IT_specialist() {
    // function-constructor implementation
}
const emp1 = new IT_specialist("John Johnson", "devops", 900);
console.log(emp1.fullName);         //  John Johnson
console.log(emp1.salary);           //  900
console.log(emp1.getPosition());    // devops
```

Select one:

a. none of the listed

[✓ b.] ✓

```
function IT_specialist(fullName, position, salary) {
  Employee.call(this, fullName, position);
  this.salary = salary;
}
IT_specialist.prototype = Object.create(Employee.prototype);
```

c.

```
function IT_specialist(fullName, position, salary) {
this.fullName = fullName;
this.position = position;
  this.salary = salary;
}
IT_specialist.prototype =  Employee;
```

d.

```
function IT_specialist(fullName, position, salary) {
  Employee.call(this, fullName, position);
  this.salary = salary;
}
IT_specialist.prototype = Object.create(Employee);
```

e.

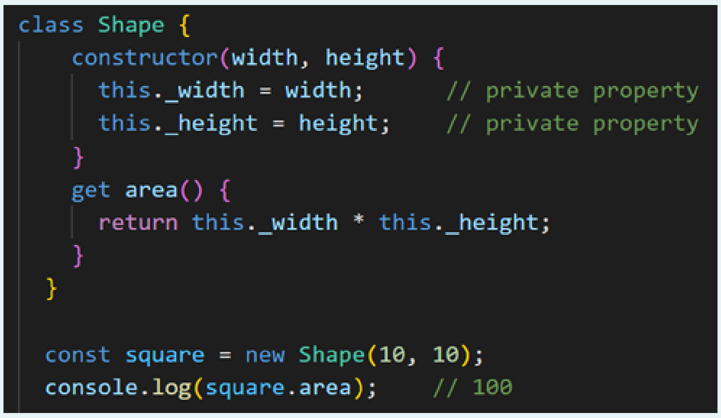
```
function IT_specialist(fullName, position, salary) {
  Employee.call(this, fullName, position);
  this.salary = salary;
}
IT_specialist.prototype =  Employee.prototype;
```

QUESTION **13**

Incorrect

Mark 0.00 out of 1.00

The given Shape class has two private properties, _width and _height. Can we access them, modify them outside the Shape class?



```
class Shape {
    constructor(width, height) {
      this._width = width;      // private property
      this._height = height;    // private property
    }
    get area() {
      return this._width * this._height;
    }
  }

  const square = new Shape(10, 10);
  console.log(square.area);    // 100
```

Select one:

[✓ a. no] ✖

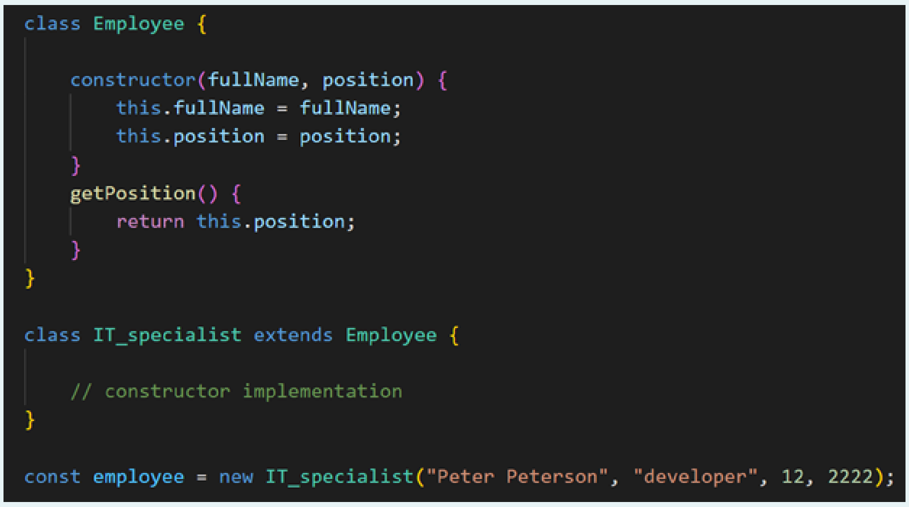
b. yes

QUESTION **14**

Correct

Mark 1.00 out of 1.00

Which of the following implementations of the IT_specialist child class constructor is correct? The constructor accepts 4 parameters: fullName, position, experience, salary.



```
class Employee {

    constructor(fullName, position) {
        this.fullName = fullName;
        this.position = position;
    }
    getPosition() {
        return this.position;
    }
}

class IT_specialist extends Employee {

    // constructor implementation
}

const employee = new IT_specialist("Peter Peterson", "developer", 12, 2222);
```

Select one:

[✓ a.] constructor(fullName, position, experience, salary) { ✓

    super(fullName, position);

    this.experience = experience;

    this.salary = salary;

  }

b. none of the listed

c. constructor(fullName, position, experience, salary) {

     this.experience = experience;

     this.salary = salary;

     super(fullName, position);

  }

d. constructor(fullName, position, experience, salary) {

    this.fullName = fullName;

    this.position = position;

    this.experience = experience;

    this.salary = salary;

  }

e. constructor(fullName, position, experience, salary) {

    super(fullName, position, experience, salary);

    this.experience = experience;

    this.salary = salary;

  }

QUESTION 15

Incorrect

Mark 0.00 out of 1.00

Indicate which of the following is not natively supported in JavaScript?

Select one or more:

- ☐ a. modularity
- ☐ b. interfaces
- ☐ c. generics
- ☐ d. polymorphism
- ☑ e. overriding ✗
- ☑ f. overloading ✓

◄ Practical tasks. OOD / OOP

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