TD N°04 JAVASCRIPT

Exercice n°1 :

```
1. Number.prototype.formatMoney = function (c, d, t) {
2. var n = this,
3. c = isNaN(c = Math.abs(c)) ? 2 : c,
4. d = d === undefined ? "." : d,
5. t = t === undefined ? "," : t,
6. s = n < 0 ? "-" : "",
7. i = parseInt(n = Math.abs(+n || 0).toFixed(c)) + "",
8. j = (j = i.length) > 3 ? j % 3 : 0;
9. return s + (j ? i.substr(0, j) + t : "") +
   i.substr(j).replace(/(\d{3})(?=\d)/g, "$1" + t) + (c ? d + Math.abs(n -
   i).toFixed(c).slice(2) : "");
10. }; // Source: http://stackoverflow.com/questions/149055/how-can-i-format-
   numbers-as-money-in-javascript
11.
12. function ElementReader() {
13. this.InputCheckbox = function (idInput) {
14. var input = document.getElementById(idInput);
15. if (input === null) {
16. return undefined;
17. }
18. return input.checked;
19. };
20. this.InputInt = function (idInput) {
21. var input = document.getElementById(idInput);
22. if (input === null) {
23. return undefined;
24. }
25. return parseInt(input.value);
26. };
27. this.Select = function (idSelect) {
28. var select = document.getElementById(idSelect);
29. if (select === null) {
30. return undefined;
31. }
32. var idx = select.selectedIndex;
33. return select.options[idx].value;
34. };
35. }
36.
37. function ElementWriter() {
```

```
38. this.Tag = function (idTag, value) {
39. var tag = document.getElementById(idTag);
40. if (tag !== null) {
41. tag.innerHTML = value;
42. }
43. };
44. this.TagCurrency = function (idTag, value) {
45. this.Tag(idTag, value.formatMoney(2, ',', ' ') + '$');
46. };
47. }
48.
49. function salaryCalculator() {
50. var incomeTaxRate = 0.18;
51. var employmentInsuranceRate = 0.07;
52. var canadaPensionPlanRate = 0.05;
53. var additionBonusValue = 100;
54. var additionAllowanceValue = 150;
55. this.grossSalary;
56. this.additionBonus;
57. this.additionAllowance;
58. this.gender;
59. this.dependents;
60. this.getAdditions = function () {
61. var additions = 0;
62. if (this.additionBonus === true) {
63. additions += additionBonusValue;
64. }
65. if (this.additionAllowance === true) {
66. additions += additionAllowanceValue;
67. }
68. return additions;
69. };
70. this.getCanadaPensionPlan = function () {
71. return this.grossSalary * canadaPensionPlanRate;
72. };
73. this.getEmploymentInsurance = function () {
74. return this.grossSalary * employmentInsuranceRate;
75. };
76. this.getFinalSalary = function () {
77. return this.grossSalary - this.getCanadaPensionPlan() -
    this.getEmploymentInsurance() - this.getIncomeTax() + this.getAdditions();
78. };
79. this.getIncomeTax = function () {
80. var relevantIncomeTaxRate = incomeTaxRate;
81. if (this.gender === 'F') {
82. relevantIncomeTaxRate -= 0.02;
```

```
83. }
84. if (this.dependents === 3) {
85. relevantIncomeTaxRate -= 0.01;
86. } else if (this.dependents > 3) {
87. relevantIncomeTaxRate -= 0.02;
88. }
89. return this.grossSalary * relevantIncomeTaxRate;
90. };
91. }
92.
93. function computeSalary() {
94. var reader = new ElementReader();
95. var writer = new ElementWriter();
96. var salCalc = new salaryCalculator();
97. salCalc.grossSalary = reader.InputInt('grossSalary');
98. salCalc.additionBonus = reader.InputCheckbox('additionBonus');
99. salCalc.additionAllowance = reader.InputCheckbox('additionAllowance');
100.   salCalc.gender = reader.Select('gender');
101.   salCalc.dependents = reader.InputInt('dependents');
102.   writer.TagCurrency('incomeTaxResult', salCalc.getIncomeTax());
103.   writer.TagCurrency('employmentInsuranceResult',
   salCalc.getEmploymentInsurance());
104.   writer.TagCurrency('canadaPensionPlanResult',
   salCalc.getCanadaPensionPlan());
105.   writer.TagCurrency('additionsResult', salCalc.getAdditions());
106.   writer.TagCurrency('finalSalaryResult', salCalc.getFinalSalary());
107.   }
108.
109.   function resetAll() {
110.   var writer = new ElementWriter();
111.   var results = ['incomeTaxResult', 'employmentInsuranceResult',
   'canadaPensionPlanResult', 'additionsResult', 'finalSalaryResult'];
112.   for (var i = 0; i < results.length; i++) {
113.   writer.Tag(results[i], '');
114.   }
115.   }
```

Exercice n°2 :

```
1. function member(id, name, grade) {
2. this.id = id;
3. this.name = name;
4. this.grade = grade;
5. this.toString = function() {
6. return "ID: "+this.id+", Name: "+this.name+", Grade: "+this.grade;
7. }
8. }
9.
10. function team() {
11. this.members = new Array();
12. this.add = function(member) {
13. var index = this.members.length;
14. this.members[index] = member;
15. return index;
16. }
17. this.toString = function() {
18. return this.members.join("\n");
19. }
20. }
21.
22. var myTeam = new team();
23.
24. myTeam.add(new member(42, "Alice", "ICT C"));
25. myTeam.add(new member(43, "Abdelhamid", "ICT C"));
26. myTeam.add(new member(44, "Baya", "ICT C"));
27. myTeam.add(new member(45, "Firmus", "ICT B"));
28. myTeam.add(new member(46, "Jean", "ICT C"));
29. myTeam.add(new member(47, "Badria", "ICT A"));
30. myTeam.add(new member(48, "Lalla", "ICT C"));
31. myTeam.add(new member(49, "Souleymane", "ICT B"));
32.
33. document.writeln(myTeam);
```

Exercice n°3 :

```
1. function verifyReply() {
2. var proposedValue = valueField.value;
3. var pattern = /^\d+$/;
4. if(pattern.test(proposedValue)) {
5. numberTry++;
6. proposedValue = parseInt(proposedValue);
7. if(proposedValue < valueToFind) {
8. document.getElementById('result').innerHTML = "Le nombre à trouver est plus
   grand";
9. valueField.value = '';
10. valueField.focus();
11. } else if(proposedValue > valueToFind) {
12. document.getElementById('result').innerHTML = "Le nombre à trouver est plus
   petit";
13. valueField.value = '';
14. valueField.focus();
15. } else {
16. document.getElementById('result').innerHTML = "Vous avez trouvé la solution en
   "+numberTry+" coups";
17. }
18. } else {
19. document.getElementById('result').innerHTML = "La valeur proposée doit être un
   nombre!!";
20. }
21. return false;
22. }
23.
24. var maxValue = 1024;
25. var valueToFind = Math.floor((Math.random()*maxValue)+1);
26. var numberTry = 0;
27. var valueField = document.getElementById('valueField');
28.
29. if(valueToFind > maxValue) {
30. valueToFind = maxValue;
31. }
32.
33. document.getElementById('maxValue').innerHTML = maxValue;
34. valueField.value = '';
35. valueField.focus();
```

Exercice n°4 :

```
1. function sumAll() {
2. var index;
3. var sum = 0;
4. for(index = 0; index < arguments.length; ++index) {
5. sum += arguments[index];
6. }
7. return sum;
8. }
9.
10. var a = 12;
11. var b = 34;
12. var c = 56;
13. var d = 78;
14. var e = 90;
15.
16. document.writeln("Variables définies:");
17. document.writeln("--------------------");
18. document.writeln("a = "+a);
19. document.writeln("b = "+b);
20. document.writeln("c = "+c);
21. document.writeln("d = "+d);
22. document.writeln("e = "+e);
23. document.writeln("")
24.
25. document.writeln("Additions:");
26. document.writeln("----------");
27. document.writeln("Somme de a ("+a+"), b ("+b+") et c ("+c+") : sumAll(a, b, c)
    => "+sumAll(a, b, c));
28. document.writeln("Somme de b ("+b+") et d ("+d+") : sumAll(b, d) => "+sumAll(b,
    d));
29. document.writeln("Somme de a ("+a+"), b ("+b+"), c ("+c+"), d ("+d+") et e
    ("+e+") : sumAll(a, b, c, d, e) => "+sumAll(a, b, c, d, e));
30. document.writeln("Somme d'aucun élément : sumAll() => "+sumAll());
```