Tutorial 6

All the questions refer to the object literal below:

# Hands On 1: Basics of Objects

|  |
| --- |
| let student = {  firstName:'John',  lastName:'Smith',  'age': 19,  contact:{  email:'johnsmith@fakeschool.com',  phoneNumber:{  'country code':'+65',  'number': '9919912'  }  },  address: {  'streetName':'Yishun Ring Road',  'building': 'Blk 171 #11-221'  },  classes:[  "Computing 101", "Computing 102", "Computing 103"  ],  grades:[  {  'subject name':'Computing 1',  'Grade': 85  },  {  'subject name':'Computing 2',  'grade': 31  },  {  'subject name':'Computing 3',  'grade': 75  }  ] } |

## Guidelines

* Use the dot notation when possible

**Q1: Write the code that will display the first name and last name of the student in one line inside the console:**

|  |
| --- |
| console.log(student.firstName + " " + student.lastName); |

**Q2: Display the age of the student in the console:**

|  |
| --- |
| console.log(student.age); |

**Q3: Display the student's country code and phone number in the same line using the console:**

|  |
| --- |
| console.log(student.contact.phoneNumber["country code"] + student.contact.phoneNumber.number); |

**Q4: Change the age of the student to 21:**

|  |
| --- |
| student.age = 21; |

**Q5: Add a new property to the student object. The property name is "*gender*" and the value is "*male*"**

|  |
| --- |
| student.gender = "male"; |

**Q6:** **The student is taking one more class, "Computing 104". Add that to the *classes* array inside the student's object (hint: consult previous lesson on sequences for how to add to the back of an array)**

|  |
| --- |
| student.address.classes.push("Computing 104"); |

**Q7: Evaluate the last line of the code below:**

|  |
| --- |
| let s = student; s.contact.email "johnsmith@fakehotmail.com" console.log(student.contact.email); |

|  |
| --- |
| let s = student;  s.contact.email = "[johnsmith@fakehotmail.com](mailto:johnsmith@fakehotmail.com)";  console.log(s.contact.email); |

**Q8: Complete the code below so that it will yield the following output:**

|  |
| --- |
| for (let x in student.address) {  console.log(x," : ", student.address[x]) } |

*Expected Output:*

|  |
| --- |
| streetName : Yishun Ring Road building: Blk 171 #11-221 |

**Q9: Add a method the *student* object definition (that is, directly within let student = { … } that when called will return the following output:**

*Expected Output:*

|  |
| --- |
| John Smith (johnsmith@fakehotmail.com) |

*Write the code for the method below:*

|  |
| --- |
| shortName: function() {  return this.firstName + " " + this.lastName + " " + "(" + this.contact.email + ")";  } |

**Q10: Consider the following object below, which pairs a student id with each student:**

|  |
| --- |
| let studentDatabase = {  "A123456":"John Doe",  "B421123":"Jane Smith",  "C1231234":"James Bond" } |

Complete the program below so that when a user can enter the ID of a student. Display the name of the student if the ID exists as a property key in the *studentDatabase* object; otherwise, display "the student is not found".

|  |
| --- |
| const prompt = require('prompt-sync'); // delete this line if programming in repl.it  let studentDatabase = {  "A123456":"John Doe",  "B421123":"Jane Smith",  "C1231234":"James Bond" }  let studentId = prompt("Please enter the student ID: ");  if (Object.keys(studentDatabase).includes(studentId) == true  ) {  console.log("Student found! Their name is: “, studentDatabase[studentId]); } else {  console.log("The student is not found!"); } |

## Hands On 2:

Consider the following problem:

Ask the user for a string, and then display the count of each alphabet and space in the string, assuming that the user won't key in any punctuation marks or other symbols. The idea is if the user enters the string "apple pie", we will get the following output:

|  |
| --- |
| a: 1 p: 3 l: 1 e: 2  : 1 i: 1 |

The order of how the alphabet appears is not important.

We will explore how to use an object to solve this problem. Assume we start off the following code:

|  |
| --- |
| let message = prompt("Please enter something: "); |

**Q1: Write the code below to create an empty object stored in the variable *alphaCount:***

|  |
| --- |
| alphaCount = {}; |

**Q2: Complete the code below, such that if the character stored in the variable *alpha* is not found as a property inside *alphaCount*, it will be stored in the *alphaCount* object as a property with value of 1:**

|  |
| --- |
| for (let alpha of message) {  if (Object.values(alphaCount).includes(alpha) == false && typeof(alphaCount[alpha]) == ‘undefined')  {   alphaCount[alpha] = 1; } |

**Q3: Add an *else* to the *if* part from question 2, such that if *alpha* exists as a key in *alphaCount*, its value is increased by 1:**

|  |
| --- |
| for (let alpha of message) {  if (....) {  // this part completed in question 2  } else {  alphaCount[alpha] = alphaCount[alpha] + 1;  } } |

**Q4: Print out on one line for each alphabet in the *message* string, the number of times it is found.**

|  |
| --- |
| console.log(Object.entries(alphaCount)); |