Mini Program 6 Instructions (NodeJS)

Wednesday, August 28, 2019 11:14 AM

Due Date: See My Grades for the due date
Estimated Time to Complete: < 3 hours

Objectives:

- Function creation
- Variable declaration
- Variable data value assignment
- Variable Arithmetic Operation
- Variable Type Conversion Operation
- String Concatenation
- Variable Scope
- Constants
- Selection Control Structures
- Repetition Structure - Loop

Instructions:
At first it may look overwhelming, but if you do things in order as I have presented them, you will be just fine. I don't expect a fully perfect A+ result on the first try. Get as much done as you can. But I want you to take your time in each section. This program *builds on* **Mini Program 5**. You will add the repetition structure (loop) component in the form of IF/Then statements

Start on this program AS SOON AS IT IS available! Waiting until Sunday will be disastrous!

Take breaks between sections!

△ -- Divide and Conquer!!
Don't try to understand everything at once. You will get confused!! Ask as many questions as you can in the Yammer forum.

PRINT this instruction sheet and work it LINE BY LINE!
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Mark the checkboxes as you complete each section one at a time.

I included an example for you review in the assignment description as you go along. NOT EVERYTHING is on the example so don't try to copy it word for word!

Write by hand a program declaring, processing and assigning data values to variables.

You should build the program within the basic module template you created as a result of Mini Program 1. It is the same module template as described in the slide set Anatomy of a Console App. You should include the compiler directive `'use strict'`. Use comments to describe each section in the program and should include your name and assignment information (an example is below). Comments are snippets of text that are ignored by the language compiler and will be discussed in detail later in the course. To add a comment, simply use a single quote ' followed by the text. Example:

```
//Δ - Submission Information
//   [Fill in assignment information below this line]
//  Name: _____
//  Assignment/Purpose: _New Program Structure_
//  Due Date: _____
// Version: ___1_____
```

Name the module in the following manner:
m<LastName><Firstname>MP6
Example: for Julia Anderson, her module will look like **mAndersonJuliaMP6**

☐ **1. Class-Level Scope Variable Declaration section:**

a. Add the items below the comment line:
[Type Class/Module-Level variable DIM/Const statements below this line]

b. One (1) constant declaration is required with the following naming convention: <prefix><Your Initials> <variable Name>. The following table indicates the type and name. REMEMBER! Variable/Constant Declarations cannot have Spaces! Use *camel-case*.

i.

Type	Name
Number	Current Year

c. Example: **Current Year - 2020**

i.

Type	Name	Initials
Number	Current Year	JA

ii.
```
const numJACurrentYear = 2020;
```

☐ **2. Procedure-Level Scope Variable Declaration section:**

a. Add the items below the comment line:
[Type Procedure-Level variable DIM statements below this line]

b. Several variable declarations are required with the following naming convention: <prefix><Your Initials> <variable Name>. The following table indicates the type and name. REMEMBER! Variable Declarations cannot have Spaces! Use *camel-case*.

c. Make sure the variable declarations are separated by their function in terms of Input, Processing, and Output.

i.

Order	Type	Name	Function
1	String	First Name	Input
2	String	Last Name	Input
3	String	Middle Name	Input
4	Boolean	Gender	Input
*5	Number	Age	Process
*6	String	Age	Process
*7	String	Full Name	Process
*8	String	Output	Output
*9	String	strGender	Process
*10	Number	Days Old	Process
*11	String	Days Old	Process
*12	Number	Year Count	Process

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d. Example: **Student Name - Julia Anderson**

i.

Type	Name	Initials
String	Last Name	JA

ii.
```
DIM strJALastName ;
```

☐ 3. **Input Variable Data Value Assignment section:**
   a. **Add the items below the comment line** *[Type input variable assignment statements below this line]*
   b. **Start with the Variables 1 - 4** (*only* the items without the *asterisks!). Assign data values based on the result of the variable declaration section above.
   c. Make sure the variable assignments are separated by their function in terms of Input, Processing, and Output
   d. The data values will be based on your personal information.
   e. **Example**: *Based on the example declaration in the last section*: `var strJALastName;`
      i. `strJALastName = "Anderson";`
      ii. finish the rest

4. The variable declarations are **placed in the function procedure** of the module (between function header and function footer)

☐ 5. **Arithmetic Operation and Processing section:**
   a. **Put this line under the commented section**
   [Type variable operations and processing statements below this line]
   b. **Calculate your age and assign it to Variable *5 (Age)** . Do a basic calculation of your age. A basic calculation is <current year> - <year you were born>
   c. **Example**: If Julia Anderson was born in 2000. Make use of the Module-Level constant mlngJACurrentYear
   d. `numJAAge = numJACurrentYear - 2000;`

☐ 6. **Variable Type Conversion Operation and Processing section:**
   a. **Put this line under the lngJAAge assignment statement above**
   b. **Convert lngJAAge from a Long Integer to a String and assign it to variable *6 (Age)** . Do a basic calculation of your age. A basic calculation is <current year> - <year you were born>
   c. **Example**: use the **.toString()** conversion method in **lngJAAge**.
   d. `strJAAge = lngJAAge.toString()`

☐ 7. **String Concatenation Operation and Processing section:**
   a. **Put this line under the strJAAge assignment statement above**
   b. **Concatenate variables 1-3 with spaces between them and assign the result to *7 (Full Name)** .
   c. **Example**:
   d. `strJAFullName = strJAFirstName & " " &`... finish the rest

☐ 8. **Selection Control Structures and Processing section:**
   a. **Put this line under the `strJAFullName` assignment statement above**
   b. **Write an IF/Then statement to test if blnGender is True or False. If True then set variable *9 to "Female" otherwise "Male"**. Consult your notes from the *Slide Set: Selection Control Structures Level I* series.
   c. **Example**:
   d. `strJAGender =` finish the rest

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☐ 9. **Repetition Structure (Loop) and Processing section:**
   a. **Put this line under the `strJAGender` assignment statement above**
   b. **Write an Repetition Structure (Loop) statement block to** *add up* **your** *approximate age* **in days. Place the result in variable *10. You will need to convert variable *10 to a string and place that result in variable *11**. HINT: To solve the loop structure, you already have everything you need from program 5. Your starting value will be the year you were born (class level constant) to the ending value which is the current year. Consult your notes from the *Slide Set: Repetition Structures - Loops* series.

      i. **example**: If **Julia** was born in **2000**, the range would be **numJAYearCount = 2000 To 2017**. With each iteration of the **add 365** days to **numJADaysOld**. Don't worry about a partial year. Remember the goal

is to build a loop structure. There are better ways to calculate the number of days old you are. Those of you need a challenge and want to be accurate, you may try to make it exact by implementing a selection control structure. But you **MUST** use **this loop** to *sum the days*!

```
c. numJADaysOld = numJADaysOld + 365;
d. strJADaysOld = Fill-in
```

☐ **10. Output Variable Assignment section:**

a. **Put this line under the commented statement:**
[Type variable output statements below this line]

b. **Concatenate variables *7 (Full Name), *9, and *11 (Days Old) to make the output phrase "___ is ___ and ___ days old!" and assign the result to *8 (Output)** . Fill in the blanks with variables *7, *9 and *11. Remember to use spaces!

c. **Example**: If Julia Anderson Middle Name is Claire and she is 17.

d. `strJAOutput = strJAFullName + " is " + fill-in variable *9 + " and is " + fill-in *11 + " days old!"`

Scan the handwritten copy to a **PDF** or **Word** file and upload to the BB assignment. **DO NOT TAKE A PICTURE.** Use a document scanning program like Tiny Scanner (iPhone) or use the scanner/copiers on campus.

Submission Checklist:

☐ *Scan* the **handwritten copy** to an **PDF or Word** file
☐ *Upload* the **PDF or Word** file to BB

NOTE:
TURN IN *SOMETHING USEFUL* by the due date! You will NOT get credit for later revisions on late work. What I mean by useful is at the very least the structure of the module

There will be a **grading rubric** applied so that you can see how your grade will be influenced by various assessment factors and ultimately understand your mistakes--after which you may revise and resubmit for a better grade. The rubric is indicated by a box at the top of the blackboard assignment.

Rubric Example Icon

Subsequent attempts to LATE submissions will be *ignored*.