**Component: Business Services/Task**

**Module Name: Tax**

**Author:** [Anisha Beladia](mailto:beladiaar@vcu.edu)

**Reviewers: Team 15, Bob Dahlberg**

| Inputs | Process | Outputs |
| --- | --- | --- |
| Tax bracket 2020 | 1. select tax year 2. provide gross income 3. utilize tax bracket to find taxes to be paid 4. display the taxes to be paid | taxes to be paid |
| Tax bracket 2021 |  |
| gross income |  |
| tax year |  |

**Inputs:**

* Tax bracket 2020
* Tax bracket 2021
* Gross income
* Tax year

**Process Description**

1. The user will select the tax year (2020,2021) and provide the gross income.
2. The gross income will be determined by each bracket you are a part of
3. The amount will include the max taxable amount per bracket you are fully in and a percentage of the income in the one you spill into

**Outputs**

* taxes to be paid

**APIs/Objects:**

* tax brackets for 2020
* tax brackets for 2021

**Pseudocode:**

IF income < first tax bracket

Taxes to be paid = gross income times the first tax bracket percentage

ELSE IF income < first tax bracket

Taxes to be paid = maximum taxable amount from tax bracket 1 + (gross income - first tax bracket amount) \* second tax bracket percentage

ELSE IF…. THIS CONTINUES UP TO THE LAST TAX BRACKET

**Component: Business Services/Task**

**Module Name: Translate**

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**Reviewers: Team 15, Bob Dahlberg**

| Inputs | Process | Outputs |
| --- | --- | --- |
| String | 1. select language 2. input string 3. parse string 4. add translation for each word after a comma | String of input |
| German Dictionary | String of translated input |
| Spanish Dictionary |  |
| French Dictionary |  |

**Inputs:**

* String
* German Dictionary
* Spanish Dictionary
* French Dictionary

**Process Description:**

1. The user will select the language
2. The user will input a string
3. the string will be translated and the translation will appear after each word preceding a comma

**Outputs:**

* String of input
* String of translated input

**APIs/Objects:**

* French Library
* Spanish Library
* German Library
* English Library

**Pseudocode:**

The string will be parsed and each word will be stored in a matrix column

The word will be translated into the selected language in another column of the same matrix.

The words from each row will be printed with a comma in between.

When selecting the “go back” button the second column will erase to allow for another language translation

**Component: Orchestration Services**

**Module Name: Service Broker**

**Author:** [Mia Park](mailto:parkmj5@vcu.edu)

**Reviewers: Team 15, Bob Dahlberg**

| Inputs | Process | Outputs |
| --- | --- | --- |
| Selected Program Function | 1. Input from the Application Server Node is processed. 2. Service broker determines which module in Business Service the program enters. | String telling the user that the appropriate program function was successfully loaded. |

**Inputs:**

* User-entered Program Function

**Process Description:**

1. The selected program function option is entered in the User Interface and the stored information is sent to the Orchestration Service via the Application Server node.
2. Service Broker processes the transferred information and redirects the program to the appropriate Business Service module.

**Outputs:**

* String telling the user that the appropriate program function was successfully loaded.

**APIs/Objects:**

* N/A

**Pseudocode:**

User enters an option in the User Interface that corresponds to a switch case.

Switch case will call appropriate program functions depending on user input.

IF (input == Translation)

Direct program to Translate module in Business Services.

Print “The translation program was successfully loaded.”

ELSE IF (input == Tax)

Direct program to Tax module in Business Services.

Print “The tax program was successfully loaded.”

ELSE IF (input == Main Page)

Restart program.

ELSE (input == Options)

Display program overview to user.

**Component: Utility Services**

**Module Name: Messages**

**Author:** [Mason Delane](mailto:delanem@vcu.edu)

**Reviewers: Team 15, Bob Dahlberg**

| Inputs | Process | Outputs |
| --- | --- | --- |
| Either the tax amount due or the translated word | 1. Output is displayed to the user | A string with a translated word or tax amount due. This is dependent on what is entered by the user as input. |

**Inputs:**

* Either the tax amount due or the translated word

**Process Description:**

1. Output is directed to the utility module from the orchestration module. This output is then displayed to the user

**Outputs:**

* A string with either a translated word or the tax amount due. This is dependent on what is entered by the user.

**APIs/Objects:**

* French Library
* German Library
* English Library
* Tax brackets for 2020
* Tax brackets for 2021

**Pseudocode:**

The output is passed in based on the inputs and operations within the orchestration module.

This output is converted into a string and printed.

If an error was present an error message is displayed.