

IPO Chart

Component: Business Services/Task

Module Name: Tax

Author: Anisha Beladia

Reviewers: Team 15, Bob Dahlberg

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

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:

- UI
- Application Server Node
- Orchestration Services
 - Service Broker
- Business Services
 - Tax
- Utility Services
 - Messages

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

IPO Chart

Component: Business Services/Task

Module Name: Translate

Author: Anisha Beladia

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:

- UI
- Application Server Node
- Orchestration Services
 - Service Broker
- Business Services
 - Translate
- Utility Services
 - Messages

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

IPO Chart

Component: Orchestration Services

Module Name: Service Broker

Author: Mia Park

Reviewers: Team 15, Bob Dahlberg

Inputs	Process	Outputs
Selected Program Function	<ol style="list-style-type: none">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:

- UI
- Application Server Node
- Orchestration Services
 - Service Broker
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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)

IPO Chart

Restart program.
ELSE (input == Options)
Display program overview to user.

Component: Utility Services

Module Name: Messages

Author: Mason Delane

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:

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.