Problem Solving Steps

Program Assignment #3

**Problem #1**

* Write a Python Program to draw a three-stage rocket. (25 points)

1. **State the required output:**

* The rocket “drawing”.

1. **State the necessary input items:**

* No input required.

1. **State the formulas necessary:**
2. No formulas required
3. **List the steps in order:**

* Print the output to the screen.

**Problem #2**

* Write a program where it asks to enter the number of people, then based on this number iterate that amount of time where each time get single person’s information like First Name, Last Name, Age, Occupation and Address. Make sure you validate all users’ input. Included but not limited to like age cannot be a non-numeric value should be between 0-150, name can only be non-numeric. You need to think how you can validate the occupation and address field. Finally show (print) user details one by one. For your input validation, make sure you can’t proceed next step/value without inserting valid input on current phase. (35 points)

1. **State the required output:**

* Printing the user details.

1. **State the necessary input items:**
2. The user will be prompted for the person’s/persons’ name, age, etc
3. **State the formulas necessary:**

* No formulas
* Loops to go through the strings entered and verify information entered by the user

1. **List the steps in order:**

* Ask the user how many people to enter details for.
* Begin a while loop, to loop through the questions about the person(s) being entered
* Prompt the user with the questions and verify that the data entered matches the expected type (String for name, int/number for zip code ect.)
* Store answers in arrays
* Once input is gathered, loop through the arrays and sent the responses to a print function.

**Problem #3**

* Implement a stoi (string to integer) function similar to the one from C++’s String Stream header library. (30 points)

1. **State the required output:**

* The correct integer value extracted from string
* If no numbers entered, return a 0

1. **State the necessary input items:**

* Due to no defined expected input type, I am gathering from user input entered in the console

1. **State the formulas necessary:**

* No formulas, however, using the built in functions to check for numbers entered in the string, stripping white spaces and ignoring characters after the end of the numeric values from the string.

1. **List the steps in order:**

* Capture user input in a variable as a string
* Strip the white space.
* Check for “-“ signs
* Check the string until you reach the last number entered.
* Convert the string into its integer value to verify if it exceeds ± 231, or to convert to the negative value if a “-“ sign is read
* Print the result