

Class Activity 1.1

Answer the following questions for the problems listed below. No code is needed. Type your answers in the text box:

1. What are the inputs?
 - What format are they in? (e.g., integer, floating-point, character, or string)
 - Any valid or invalid values? (e.g. positive, negative, valid range, certain values)
 - How do you get them? (e.g., prompt user or read from file)
2. How do you get from inputs to the outputs you want (process)
 - What are the calculation steps?
 - To follow these steps, what else do you need?
 - Other variables, constants, conversion? (besides input and output variables)
 - Libraries (e.g., for calculations).
3. What are the outputs?
 - What format are they in?
 - How do you output them? (e.g., on screen or to a file)

Question 1 - Teenager's work

A teenager gets retained by a neighborhood association to distribute fliers, collect dues, and do miscellaneous chores. Just to make sure they are around when needed, they get 40 dollars a month (they don't have to work for that). Plus, they get \$11.25 per hour for any time they actually work in a month. Given how long they work in a month, calculate how much they earn.

Solution - teenager work

A. Problem Solving with Pseudocode (teenager work)

What are the inputs? H hours worked in a month

What format are they in? (e.g., integer, floating-point, character, or string) real number, you can work decimal parts of an hour

Any valid or invalid values? (e.g. positive, negative, valid range, certain values) positive, some upper limit less than 200 hours maybe (5 weeks, 40 hours per week)

How do you get them? (e.g., prompt user or read from file) prompt user

How do you get from inputs to the outputs you want (process)?

What are the calculation steps?

Salary = $40 + 11.25 * H$

To follow these steps, what else do you need?

Other variables, constants, conversion? (besides input and output variables)

40 hours base pay constant, 11.25/hour pay rate constant

Libraries (e.g., for calculations). NONE

What are the outputs? Salary earned

What format are they in? real number to two decimal points.

How do you output them? (e.g., on screen or to a file) screen

Determine the following in your program:

- 1) what are the inputs of the above programming problem?
- 2) what are processes/operations involved in your program?
- 3) what is the output(s) of the above programming problem?
- 4) present a design/model of this above programming problem
- 5) Give a test plan of your program in the table format below:

Test Case Reason	Sample Data	Expected output
When hoursWorked is 0%	hoursWorked=0	earnings= \$40
Worked max hours (200000 hours)	hoursWorked=20	earnings= \$265
Worked negative hours (-2 hours)	hoursWorked=-2	Earnings= \$17.5
More tests...		

Code implementation.

```
public class Main {  
    public static void main(String[] args) {  
        double base_salary = 40;  
        double hourly_rate = 11.25;  
        double hours = -2;  
  
        double gross_salary;  
  
        // calculating the gross salary  
  
        gross_salary = base_salary + (hourly_rate * hours);  
  
        System.out.println("Your Gross Salary Is: $" + gross_salary);  
    }  
}
```