Pseudo Code Practice Problems:

Listed below is a brief explanation of Pseudo code as well as a list of examples and solutions.

Pseudo code

Pseudo code can be broken down into five components.

• Variables:

• Assignment:

• Input/output:

• Selection:

• Repetition:

A variable has a name, a data type, and a value. There is a location in memory associated with each variable. A variable

can be called anything or be given any name. It is considered good practice to use variable names that are relevant to

the task at hand.

Assignment is the physical act of placing a value into a variable. Assignment can be shown using

set = 5;

set = num + set;

The left side is the variable a value is being stored in and the right side is where the variable is being accessed. When a

variable is assigned a value, the old value is written over with the new value so the old value is gone. x = 5 does not

mean that x is equal to 5; it means set the variable x to have the value 5. Give x the value 5, make x equal to 5.

Input / Output both deal with an outside source (can be a user or another program) receiving or giving information. An

example would be assuming a fast food restaurant is a program. A driver (user) would submit their order for a burger

and fries (input), they would then drive to the side window and pick up their ordered meal (output.)

• Output – Write / display / print

• Input – Read / get / input

Selection construct allows for a choice between performing an action and skipping it. It is our conditional statements.

Selection statements are written as such:

if ( conditional statement)

statement list

else

statement list

Repetition is a construct that allows instructions to be executed multiple times (IE repeated).

In a repetition problem

– Count is initialized

– Tested

– incremented

Repetition problems are shown as:

while ( condition statement)

statement list

Examples

Example 1: Write pseudo code that reads two numbers and multiplies them together and print out their product.

Example 2: Write pseudo code that tells a user that the number they entered is not a 5 or a 6.

Example 3: Write pseudo code that performs the following: Ask a user to enter a number. If the number is between 0

and 10, write the word blue. If the number is between 10 and 20, write the word red. if the number is between

20 and 30, write the word green. If it is any other number, write that it is not a correct color option.

Example 4: Write pseudo code to print all multiples of 5 between 1 and 100 (including both 1 and 100).

Example 5: Write pseudo code that will count all the even numbers up to a user defined stopping point.

Example 6: Write pseudo code that will perform the following.

a) Read in 5 separate numbers.

b) Calculate the average of the five numbers.

c) Find the smallest (minimum) and largest (maximum) of the five entered numbers.

d) Write out the results found from steps b and c with a message describing what they are

Homework 1: Write pseudo code that reads in three numbers and writes them all in sorted order.

Homework 2: Write pseudo code that will calculate a running sum. A user will enter numbers that will be added to the

sum and when a negative number is encountered, stop adding numbers and write out the final result.

Solutions

Example 1: Write pseudo code that reads two numbers and multiplies them together and print out their product.

Pseudo code

Read num1 , num2

Set multi to num1\*num2

Write multi

Ch code

int num1, num2, multi;

cin>>num1>>num2;

multi = num1 \* num2;

cout<<multi<<endl;

Example 2: Write pseudo code that tells a user that the number they entered is not a 5 or a 6.

Example 2 Solution 1:

Pseudo Code:

Read isfive

If(isfive = 5)

Write "your number is 5"

Else if (isfive = 6)

Write "your number is 6"

Else

Write "your number is not 5 or 6"

CH code:

int isfive;

cin>> isfive;

if(isfive == 5)

{ cout<<"your number is 5"; } else if(isfive == 6)

{ cout<<"your number is 6"; } else

{ cout<<"your number is not 5 or 6"; }

Example 2 Solution 2:

Pseudo Code:

Read isfive

If(isfive = 5 or isfive = 6)

Write "your number is a 5 or 6"

Else

Write "your number is not 5 or 6"

CH code:

int isfive;

cin>> isfive;

if(isfive == 5 || isfive == 6)

{ cout<<"your number is 5 or 6"; } else

{ cout<<"your number is not 5 or 6"; }

Example 2 Solution 3:

Pseudo Code:

Read isfive

If(isfive is not 5 and isfive is not 6)

Write "your number is not 5 or 6"

CH code:

int isfive;

cin>> isfive;

if(isfive != 5 && isfive != 6)

{ cout<<"your number is not 5 or 6"; }

Example 3: Write pseudo code that performs the following: Ask a user to enter a number. If the number is between 0