Lab #10: Basic Input & Output

Pocket Money

(Partner Lab)

Goal

To learn how to read in different types of input and format output.

Instructions

Type the pseudocode, draw a flowchart (using Excel), and then write the code for the problem that follows. **USE the template provided on the next page – Do not change the names of the variables described.** You can use additional variables for processing. Be sure to declare any necessary constants.

Problem Statement

This program will keep track of how much pocket money the user has. Every week the user is given $20.00 of pocket money (this value will not change). This program will obtain from the user the user's full name, amount left from the previous week and the amount spent in the current week. Then it will calculate how much money is left. Finally, it will output the user's full name and how much money is left.

Output should include **YOUR** class heading (make sure you modify it so that it will output the appropriate information). Line numbers should be displayed with your code and output.

Additional Requirements:

- Use appropriate data types and variable names throughout the code.
- Do not use spaces or tabs for formatting --- use the manipulators discussed in class

Run the code 3 times to produce the following output. You only need to cut and paste the class heading on the first run (The class heading is not included below, but should be on your submission. **Note the spacing**.

EXPECTED INPUT (in green) / OUTPUT (in blue)

Your Input/Output should look exactly like this (but not in color and should include your class heading)

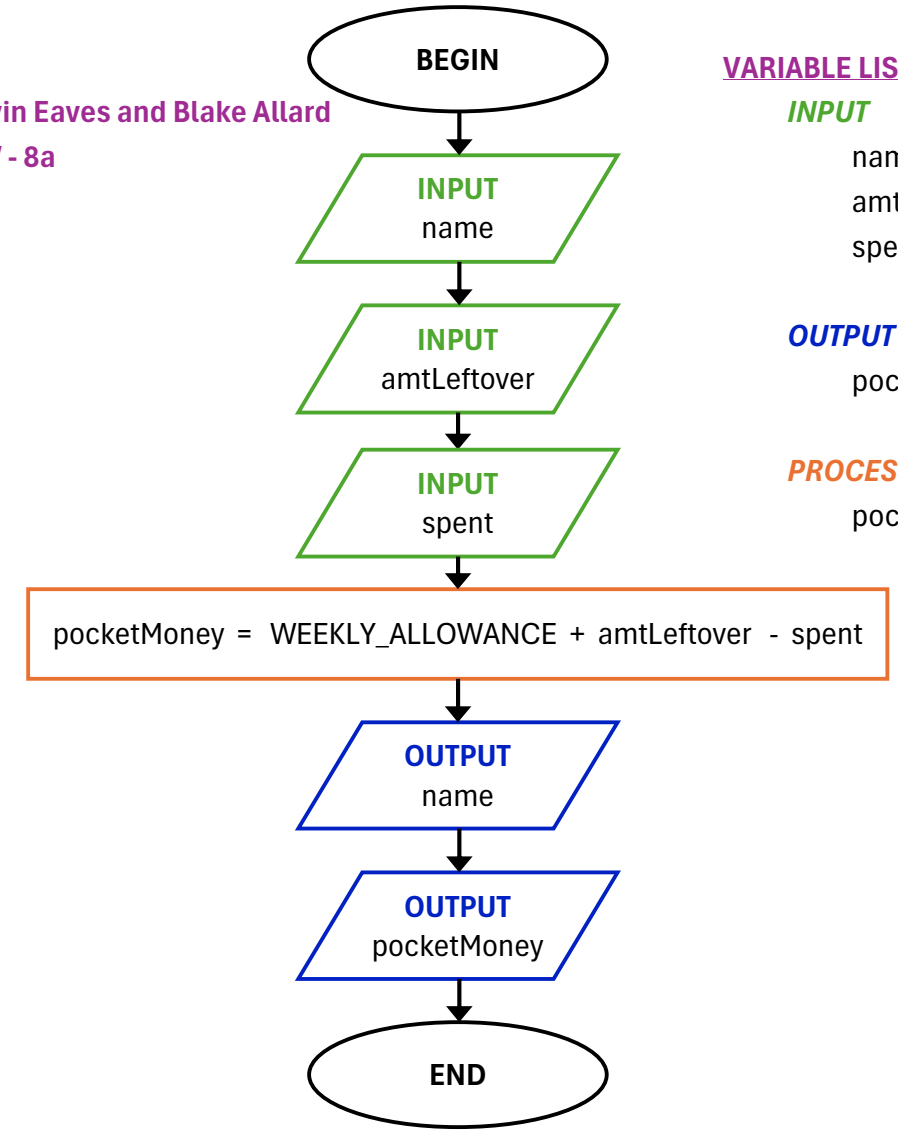
```
What is your name?                Jean Cyr
How much is left from last week? 12.50
How much have you spent?          23.00

Hello Jean Cyr!
You now have $ 9.50 left.


What is your name?                Pete McBride
How much is left from last week? 25.15
How much have you spent?          32.76

Hello Pete McBride!
You now have $ 12.39 left.


What is your name?                Chris Carroll
How much is left from last week? 5.25
How much have you spent?          16.50

Hello Chris Carroll!
You now have $ 8.75 left.
```

Double Space
(1 blank line) between input & output

Triple Space
(2 blank lines) between runs

NAME: Gavin Eaves and Blake Allard

CLASS: MW - 8a



VARIABLE LIST

INPUT

name

amtLeftover

spent

OUTPUT

pocketMoney

PROCESSING

pocketMoney = WEEKLY_ALLOWANCE + amtLeftover - spent

NAME: Gavin Eaves and Blake Allard

CLASS: MW - 8a

```
BEGIN PROGRAM
    INPUT    name
    INPUT    amtLeftover
    INPUT    spent

    CALC     pocketMoney =  WEEKLY_ALLOWANCE + amtLeftover  - spent

    OUTPUT   name
    OUTPUT   pocketMoney

END PROGRAM
```

VARIABLE LIST

INPUT

- name
- amtLeftover
- spent

OUTPUT

- pocketMoney

PROCESSING

- pocketMoney = WEEKLY_ALLOWANCE + amtLeftover - spent

```
 1 ******************************************************
 2 *  PROGRAMMED BY :  Blake Allard , Gavin Eaves
 3 *  CLASS         :  CS1A
 4 *  SECTION       :  M/W: 8am
 5 *  LAB #10       :  Basic Input & Output: Pocket Money
 6 ******************************************************
 7
 8 What is your name?                Jean Cyr
 9 How much is left from last week?  12.50
10 How much have you spent?          23.00
11
12 Hello Jean Cyr!
13 You now have $ 9.50 left.
14
15
16 What is your name?                Pete McBride
17 How much is left from last week?  25.15
18 How much have you spent?          32.76
19
20 Hello Pete McBride!
21 You now have $ 12.39 left.
22
23
24 What is your name?                Chris Carroll
25 How much is left from last week?  5.25
26 How much have you spent?          16.50
27
28 Hello Chris Carroll!
29 You now have $ 8.75 left.
```

```cpp
/*****************************************************************
* AUTHORS      : Blake Allard , Gavin Eaves
* STUDENT IDs : 358888       , 1284816
* LAB #10      : Basic Input & Output
* CLASS        : CS1A
* SECTION      : M/W 8am
* DUE DATE     : 10/16/24
*****************************************************************/

#include <iostream>              /* cout, cin, .get                        */
#include <iomanip>               /* setw, setprecision, fixed, showpoint   */
using namespace std;

/*****************************************************************
* Pocket Money Program
*_______________________________________________________________
*
* This program receives the user's name, the pocket money left over
*   from the previous week, & the amount spent in the current week.
*   Then it will calculate & output how much pocket money is remaining.
*   Each week the user is allocated an allowance that will be added
*   into their pocket money.
*---------------------------------------------------------------
* INPUT:
*   name            : The user's name.
*   amtLeftover     : Amount leftover from the previous week.
*   spent           : Amount spent this week.
*
* OUTPUT:
*   name            : User's Name
*       pocketMoney : Amount of pocket money remaining
*
*---------------------------------------------------------------
* EXAMPLE INPUT / OUTPUT:
* What is your name? Pete McBride
* How much is left from last week? 25.15
* How much have you spent? 32.76
*
* Hello Pete McBride!
* You now have $ 12.39 left.
*
*****************************************************************/

int main()
{

    // OUTPUT - USED FOR CLASS HEADING
```

```
48      const char PROGRAMMER[]      = "Blake Allard , Gavin Eaves";
49      const char CLASS[]           = "CS1A";
50      const char SECTION[]         = "M/W: 8am";
51      const int  LAB_NUM           = 10;
52      const char LAB_NAME[]        = "Basic Input & Output: Pocket Money";
53
54      // CALC - USED FOR WEEKLY GIVEN ALLOWANCE
55      const float WEEKLY_ALLOWANCE = 20.00;
56
57      // C-STRING SIZE
58      const int   NAME_SIZE        = 25;
59      const int   COL_SIZE         = 34;
60
61      /*****************************************************************************
62      * VARIABLES
63      *****************************************************************************/
64      char  name[NAME_SIZE];  // IN   & OUT  - The user's name
65      float amtLeftover;      // IN          - The amount of money leftover
66      float spent;            // IN   & CALC - The amount of money spent
67      float pocketMoney;      // CALC & OUT  - The sum amount of money
68
69      /*****************************************************************************
70      * OUTPUT - class heading
71      *****************************************************************************/
72      cout <<  left;
73      cout <<  "*****************************************************\n";
74      cout <<  "*  PROGRAMMED BY :  "<< PROGRAMMER                      << endl;
75      cout <<  "*  "      << setw(14)<< "CLASS"   << ":  " << CLASS    << endl;
76      cout <<  "*  "      << setw(14)<< "SECTION" << ":  " << SECTION  << endl;
77      cout <<  "*  LAB #" << setw(9) << LAB_NUM   << ":  " << LAB_NAME << endl;
78      cout <<  "*****************************************************\n\n";
79      cout <<  right;
80
81      /*****************************************************************************
82      * INPUT - this will read in the following input from the user:
83      *               - The user's name
84      *               - The amount of money leftover
85      *               - The amount of money spent
86      *****************************************************************************/
87      cout << left;
88
89      cout << setw(COL_SIZE)    << "What is your name? ";
90      cin.getline (name, NAME_SIZE);
91
92      cout << setw(COL_SIZE)    << "How much is left from last week? " ;
93      cin  >> amtLeftover;
94
```

```
 95     cout << setw(COL_SIZE)    << "How much have you spent? ";
 96     cin  >> spent;
 97     cout << endl;
 98
 99     cin.ignore(1000,'\n');
100
101     cout << right;
102
103     /*************************************************************************
104      * CALCULATING - This will calculate the pocket money
105      *************************************************************************/
106     pocketMoney = WEEKLY_ALLOWANCE + amtLeftover - spent;
107
108     /*************************************************************************
109      * OUTPUT - This will output the name of the user and their pocket money
110      *************************************************************************/
111     cout << left;
112     cout << setprecision(2)   << fixed;
113
114     cout << "Hello " << name  << "!"
115          << endl;
116
117     cout << "You now have $ " << pocketMoney << " left."
118          << endl
119          << endl;
120
121     cout << right;
122
123 return 0;
124
125
126 }
127
```