

The following programs will focus your skills on Output, Input, Variables, Calculations, Decision Structures, Repetition Structures, and External Files from Chapters 1 – 4. Please read the instructions carefully before you begin. Remember to save often.

## **Problem #1: File batch processing of Harvard Comprehensive**

### **Personality test**

#### **Issue:**

#### **Project Specifications:**

1. The menu driven program has the following options:
  - A – Append a personality test
  - B – Evaluate the unprocessed personality tests
  - C – Count and display how many people tested fell into each personality range
  - D – Quit
2. Menu option A Append a personality test
  - 2.1. The user enters their name and the data for the personality test.
  - 2.2. All data user entered must be valid. The user will be required to keep entering data until they successfully enter valid data.
  - 2.3. If a single letter is valid input then the application must allow for both upper and lower case. For example, Y or y will be valid.
  - 2.4. If a single letter is valid input then the application will not allow the user to enter more than one character
  - 2.5. All data must be displayed in proper case such as Wendy Payne, i.e. no names should be in all lower case or all upper case or a mix such as wendy or PaYNe.
  - 2.6. The valid test record is appended to the test file named *UnprocssedTests.txt* file.

Example format *UnprocssedTests.txt* file

Tim Smith

A

C

D

B

B

D

A

C

A

A

JoSh MARCh

B

B

C

A

C

D

B

B

D

A

3. Menu option **B** Evaluate the unprocessed personality tests

3.1. The program determines the personalities for all records in the *UnprocssedTests.txt* file.

3.2. Based upon the following table, the name of the person and the type for each record processed is appended to the *resultTests.txt* file.

**Score**

12-20

**Type**

Personality Type 1

21-30

Personality Type 2

31-42

Personality Type 3

43-53

Personality Type 4

Example format *resultTests.txt* file

Tim Smith

Personality Type 3

Josh March

Personality Type 2

3.3. The program clears all records from the *UnprocssedTests.txt* file.  
(Hint – open the *UnprocssedTests.txt* file for writing and then close it.)

4. Menu option **C** Count and display the total number of people in each personality type

4.1. The program reads through the *resultTests.txt* file and counts the number of people in each of the four personality types.

Example output for *resultTests.txt* file

Tim Smith

Personality Type 3

Josh March

Personality Type 2

Output

Personality Type 1: 0

Personality Type 2: 1

Personality Type 3: 1

Personality Type 4: 0

5. Menu option **D** Terminates the program.

**All Project Requirements:**

1. Use Project 1 design template
2. Use one variable to hold all the responses
3. Use one variable for accumulation of the total
4. The design document file name must start with your last name then initial of your first name followed by a descriptive name for the project. For example, the name for this project would be PayneWProject1.docx.
5. The program design is organized in a logic and efficient fashion.
6. All data must be validated!!!