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Programming Assignment 1 – PA-1: Sequence

Learning Outcomes

- Analyse the structures within pseudocode, source code, and flowcharts.
- Create entry-level programs.

Learning Objectives

- Create flowchart from pseudocode
- Apply problem solving skills using sequence structures, variables, pseudocode, flowchart, and basic code creation in a programming language.
- Demonstrate knowledge of topics covered in the module.
- Debug

Directions

Due date: Please see D2L.

Rubric: Please see D2L

Topics covered: Module 1. You are **not** allowed to apply material covered in subsequent modules.

Libraries: Please consult with your instructor before incorporating any third-party library or non-standard library in your submission.

Collaboration model: This is an **individual** assignment. You **must not** exchange or copy code, pseudocode, flowchart, or descriptions from others. You **must not** copy code from online sources or any other source (books, magazines, etc.) either.

Keep track of every source you consult (people, online sources, etc.) as you must disclose them in your submission file or near the actual usage when it makes sense.

You are allowed to consult material regarding:
- General problem solving techniques
- Pseudocode conventions
- Flowchart symbols and usage
- Python documentation
- Code convention and styles

Ask your instructor if you have questions regarding the assignment and submission instructions.

General Submission Guidelines

1. Commit deliverables to your *private* assignment repository (keep max file size at 5MB): YearTerm = 2017Fall
   `PF_YearTerm_PA1`
2. Once you are ready to submit your assignment for marking, drop the submission file in the D2L assignment drop box. The file should contain:
   - Your identification information (see below).
   - Your repository address with specific revision you want to be considered.
   - External sources disclosure. Use "No external sources" when appropriate.
   - Self-reflection.
3. Submission file should be named as follows:
   `PF_YearTerm_PA1_Firstname_MyBVCUsername.md`
4. All files should identify the author with the following information:
   ```
   Course code     : SODV1101
   Semester/Year   : YearTerm
   Assignment code: PA1
   Author          : Firstname Lastname
   ID              :
   Date created    : YYYY-MM-DD
   Description     :
   ```
5. Diagrams should contain the same information above using a comment. Acceptable file formats are: Raptor, Flowgorithm, or Draw.IO.
6. Add `readme.md` file to the root of your repository. Add a brief description to it.
7. When a file contains multiple answers, clearly separate and identify each one with a header markup. For instance: `**a – Algorithm description**`
8. Pseudocode should use Markdown code markup.
9. Make sure to properly document your code, use consistent code conventions, give descriptive names to variables and methods, and use a coherent set of style and formatting rules. Strive for readable and maintainable code as well as proper selection of control structures.
10. Give sensible names to your project files. Be concise but expressive.
11. Use the following Python style guide:
    https://www.python.org/dev/peps/pep-0008/
12. Add the result of Google YAPF format checker as a text file:
    https://github.com/google/yapf/
13. With the exception of source code/config files all other deliverables should be placed on your repository under a folder named "`deliverables`".

Assignment Description

Your task is to analyse, fix, and describe the pseudocode given below:

```
1.    // Declare variables
2.    Declare String dayofweek
3.    Declare Integer caloriesLost
4.    Declare Real mileswalked
5.    Display "Enter the day of the week. "
6.    Display "Enter the number of steps reported on the pedometer. "
7.    Input   stepstaken
8.    // Processing
9.    Set mileswalked = stepstaken / 2000
10.   Set caloriesLost = mileswalked * 65
11.   // Output
12.   Display "The following is data for, " weekday
13.   Display "Walking ", mileswalked, " miles results in ", caloriesLost, "
  calories lost."
```

Deliverables

a) A private git repository containing your work.
Make sure you grant access to the repository to your instructor.

b) Commits showing changes to your repository.

c) Self-reflection (as part of your submission file).
e.g. How did you arrive to the solution? What did you struggle with? Which kind of tests did you use to validate your solution? And so on.

d) A succinct description of the problem addressed by the pseudocode.

e) Pseudocode. Revised version fixing all bugs, conventions, style, and readability issues.

f) IPO chart.

g) An equivalent flowchart. Filename: `PF_YearTerm_PA1_YourInitials_fc.???`

h) Python code.

i) PyLint report. Filename: `PF_YearTerm_PA1_YourInitials_plr.txt`

j) Submission file.

Items *d*, *e,* and *f* should be part to a single Markdown file:
`PF_YearTerm_PA1_YourInitials_pc.md`

***** end of assignment**