W07 Team Activity: Designer

Review the Program Specification

1. What does the program do?
    a. The program helps the user be more mindful by offering 3 mindfulness exercises: Breathing, Reflecting, and Listing.
2. What user inputs does it have?
    a. Menu - user chooses an activity
    b. Listing - user lists as many items as they can based on the prompt
3. What output does it produce?
    a. After the user selects an activity, the program will take the user through their selected activity.
4. How does the program end?
    a. The program ends with a message for the user. The message tells the user that they have done a good job, and then offers the name of the activity and duration of time completed.

Determine the classes

1. *What are good candidates for classes in this program?*
    a. 3 classes: BreathingActivity, ReflectionActivity, ListingActivity.
2. *What are the primary responsibilities of each class?*
    a. BreathingActivity: hold information for the breathing activity: display description of activity, time duration for breathing, display ending message
    b. ReflectionActivity: display starting message, display random prompt, display reflecting question, time duration, pauses during reflection time with spinner, display ending message.
    c. ListingActivity: display starting message, display random prompt, let user input list items for specific time duration, store user inputs, display user inputs, display ending message

Define class behaviors

1. *What are the behaviors this class will have in order to fulfill its responsibilities? (In other words, what things should this class do?)*
   a. BreathingActivity: attributes: start activity, pacing, end activity.
   b. ReflectionActivity: attributes: start activity, time duration, random prompt, reflection question, end activity.
   c. ListingActivity: attributes: start activity, time duration, list items, store user inputs, display user inputs, end activity.

Define class attributes

Breathing:

1. *What attributes does this class need to fulfill its behaviors? (In other words, what variables should this class store?)*
   a. _duration int, _frequency int, _pace int
2. *What are the data types of these member variables?*
   a. integer
3. *What constructors should each class have?*
   a. Public for the breathing activity, private for _duration int, _frequency int, _pace int.

Reflection:

1. *What attributes does this class need to fulfill its behaviors? (In other words, what variables should this class store?)*
   a. _duration int, _frequency int, _reflection str.
4. *What are the data types of these member variables?*
   a. Integer, string
5. *What constructors should each class have?*
   a. Public for reflection activity, private for _duration int, _frequency int, _reflection str.

Listing:

6. *What attributes does this class need to fulfill its behaviors? (In other words, what variables should this class store?)*

a. _duration int, _frequency int, _item list

7. *What are the data types of these member variables?*

   a. Integer, list

8. *What constructors should each class have?*

   a. Public for listing activity, private for _duration int, _frequency int, _item list.

Define Constructors

1. *What constructors should each class have?*
   - ○ *In other words, what parameters should you pass in when creating an object of that type.*
   - ○ Breathing: public BreathingActivity(int duration, int frequency, int breathPace)
   - ○ Reflection: public ReflectionActivity(int duration, int frequency, str reflection)
   - ○ Listing: public ListingActivity(int duration, int frequency, str reflection)

2. *What other work needs to be done to set up these objects?*
   - ○ *For example, does the constructor need to run code to perform set up tasks, like creating lists, iterating through variables, etc.*
   - ○ Breathing: timer
   - ○ Reflection: timer, random prompt generator, display reflection question
   - ○ Listing: timer, create list from user input, display list