

Problem:

Given a set of courses, *courses*, find all percentages the user spent working on each course's given tasks for a week, such that all percentages equal to 100%.

Each course has two types of variables, pages, and hours. To solve this, assume that:

Pages = hours

This assumption is made true due to the need to calculate the percent of work the user has done for a given task (The amount of work completed divided by the amount of work assigned), as such it can be said that

3 pages completed out of 5 pages

And

3 hours completed out of 5 hours

Are equivalent, as both the percentages equals to 0.6

Solution:

Let *r* be the set of reading task values.

Let *h* be the set of hour task values.

Let *weeklytasks* be the set of task values, defined as by the following equation

$weeklytasks = r \cup h$

where the union will not remove duplicate values.

Let *weeklytasks_{total}* be the total amount (numeric) of all tasks for a given week:

$$weeklytasks_{total} = \sum_{i=1}^n weeklytasks_i$$

Now we must consider each course in the course list defined as *courses*. Here a percentage value must be assigned to every course. This can be considered as the following:

Let *courses_i* be defined as a given course in the set *courses*.

Let *coursepercent_i* be defined as a given course's percent out of one hundred (100%) for the amount of work the user has done in the week.

$coursepercent_i = calculatepercent()$

Therefore *calculatepercent()* can be defined as the following:

Let *course_r* be the set of reading task values for a given course *courses_i* that the user has completed.

Let *course_h* be the set of hour task values for a given course *courses_i* that the user has completed.

Let *completedcoursetasks* be the set of task values for a given course, defined as by the following equation that the user has completed.

$coursetasks = course_r \cup course_h$

Let $completedcoursetasks_{total}$ be the total amount (numeric) of the completed tasks for a given course:

$$completedcoursetasks_{total} = \sum_{i=1}^n completedcoursetasks_i$$

Now the final course percent must be calculated:

$$coursepercent_i = 100 \left(\frac{completedcoursetasks_{total}}{weeklytasks_{total}} \right)$$

To prove the theorem, we can test by:

$$100 = \sum_{i=1}^n coursepercent_i$$

Which will return 100, representing 100% of all tasks completed in a given week.

Therefore, we have calculated each percentage for every course's tasks the user is currently taking.