Introduction



Repetition clock

In our daily lives, we find many things happen again and again ~~in same~~ creating a pattern. For example, your alarm clock always rings every morning. When we set the time we decide when it ~~starts and how many times alarm~~ should ring. Most alarms have automatic feature ~~that help us to~~ so that we don't have to set it every day. ~~One setup and its works for certain period.~~

The same idea works in programming. Instead of ~~doing~~ writing ~~every~~ a single similar command many times, we can choose and use ~~one of~~the repetition function to do ~~that~~this. In programming we call these loop commands. This ~~is the next~~ module is the next in our algorithm and programming course, after data type, basic commands and branching. Our goal in this course is learn together how to solve a programming problem using loop commands.

This course will require 3 weeks to be completed. Our ~~F~~face-to-face (FTF) class session will be take ~~a~~ place ~~1 at~~during the first and third weeks, meanwhile ~~student~~ you will work on online activities ~~after FTF session 1 and~~during week 2.

Course Objectives

After ~~completed~~ completing this course, students are expected to:

1. Given a real world problem that needs to be solved using loop structures, first year undergraduate students will be able to analyze the problem, create solutions using loop commands using Pascal language.
2. First year undergraduate students will be able to reflect their understanding of loop commands by identify another real world problem and solve it.

Face-to-face Unit

SESION 1 A. Introduction

Note: although this FTF unit ~~write~~ is presented in web setting ~~but actual~~ this lecture~~r~~ and activities will be done in classroom setting.

~~Put in mind,~~Recall that every time we ~~coding~~ code we should always consider the users' point of view. They might know nothing about programming, ~~and~~ but they do need to ~~all they~~ know ~~is~~ how to use the program. As we have learned before, if we want ~~write~~ 'Number 1' to appear 10 times ~~in~~ on the screen then we should

write it 10 times in source code.

Try to figure out ~~this~~ these questions:

- How ~~if we want to~~can we print 'Number 1' ~~until~~ through 'Number 1000' in consecutive order?
- How ~~if user want to~~can we print only 'Number 1' ~~until~~ through 'Number 5'?
- How if user want input numbers of certain number that we don't know how much? [I do not know what you mean here]

~~Probably~~ W~~w~~e can probably do ~~that~~ this manually by ~~write~~ writing 1000 line of codes or by ~~change~~ changing code based on user requirements but it will waste of time and make you bald :) That is why we need loop commands to make it simple.

B. ~~Lecturer~~Lecture Notes
~~Lecturer~~ Lecture notes ~~material~~ for this course can be downloaded at Looping

C. Group Activity
The main ~~question~~ problem to solve for this module is:
"Mr. A ~~have~~ has a saving account ~~amount of~~ and adds $100 per month to it~~.~~ He wants to know how much money he will have in years 2, 3, 4, 5, if he earns ~~amount of his money for 1 5 years later if he have~~ 2%, 3%, 4%, and 5% annual interest. How will you solve his problem with Pascal?" [Alex, I do not know if I interpreted your problem correctly here. Do the percents provided apply to each year? Or are these different rates of compound interest for the entire time period?]

Student should work in groups (4-5 students), choose a group leader, and discuss ~~several issues~~these questions:

- ~~What is the main problem? in this question?~~
- What is the appropriate formula to solve it?

After you decide upon the formula ~~is decided~~, your group should create program to solve it with all three loop commands and then choose the best one among three. [Alex, I do not know what you mean by three loop commands] 1 or 2 members will work on one type of loop command, post the answer on group discussion forum on Moodle and discuss it with peers.

SESSION 2 - Reflection After completing all online discussions, teacher will [give reflection do you mean explain?] about looping in FTF session 2. To help students reflect [think about what they learned] ~~the knowledge they got from~~ inthis module, students ~~should~~ will be sent another real world [a new?] problem and its solution using loop commands.

Online Unit

All online units will ~~be organized~~ hosted by UAlbany Moodle.

Every student will ~~get~~ receive unique user account to access this module. For ~~general student~~guest users can use the account information below.

Username: student123

Password: 1234 or login as guest.

Note: This course uses a page/space created by Moodle administrator ~~at~~ as a Summer 2011 course, so it will be located under Summer 2011-ETAP 529 Distance Learning Student Courses-Kweldju Course 2. Just look ~~directly to~~for the ~~-~~Loop Module.

A. Group Discussion

All students will be assigned to a ~~S~~small group discussion forum ~~will be provided based on students group name~~ (A, B, C, or D). Based on ~~the~~ your group assignment, every student [(or two) ~~←~~---not sure what you mean by this] should post their loop programming solution ~~alternative answer with one of loop command~~ and ~~and~~ respond to the others in your group. Summary discussion will be led by The group leader ~~to~~ who will summarize and lead the discussion ~~discuss and~~ to choose the appropriate ~~command~~ programming solution to solve the problem. In this forum, students only can see the discussion group they were assigned to. ~~on their group and they cannot see other groups discussion.~~

B. Whole Class Discussion

Every group will post ~~they~~ their answer in this forum and respond to others. Students are expected to respond to at least 2 other postings. In this setting, all students can see and comment ~~to~~ on all other students postings. ~~(no groups).~~

C. Grading

Grading for discussion will follow this Discussion Rubric