

Arrays Lab

1 Introduction

In this lab / assignment, you will create a Java program that will administrate a multiple choice exam on the area of Psychology (Introductory course).

2 General Overview of your program

These are the steps that your program shall perform:

- a) Your program will read the questions and multiple choices and their respective correct answer numbers from a text file. The way to open a text file is the same as the way you read the Titanic data.
- b) The contents of the text file is shown in attachment A of this document. Please create a new text file in your computer and copy and paste the contents in it.
- c) The contents are structure as described below:
 - i) First line is the Exam topic.
 - ii) The second line is the minimum percentage of correct answers to pass the exam
 - iii) The rest of the file contains 10 sets of questions in this format:
 - First line of a given question set: The Question per say
 - Second line of a given question set: The multiple choices separated by the symbol "#". You the split command you have learned in the Titanic lab to separate them into a String array.
 - Third line of a given question set: the correct answer.
- d) Your program shall create the following arrays to hold all the data read from the text file:
 - i) A 1-dimension String array, `String[]`, to hold the questions (10 questions)
 - ii) A 2-dimension String array, `String[][]`, to hold the multiple choice answers, where the first index of the array is the question number and the second index is the specific answer (from 5 answers of the multiple choice).
 - iii) A 1-Dimension integer array, `int[]`, containing the correct answer numbers.

After your program reads in all the data from the text file, it will starts the exam by doing the following steps:

- a) Print the Exam Title
- b) Loop over all the questions, one by one, printing the current question on the terminal window, its multiple choices (with a number at the beginning of each choice, so the student can select one of them)
- c) Prompt the student to enter his/her choice and using Scanner keyboard reads it in.
- d) Check if the student answer is right and let the student know (if it is right or not). If right, increase a variable that keeps track of the number of correct answers she/he has.
- e) After all the questions are over, compute the correctness percentage of her/his exam and compare with the minimum percentage to pass the exam.
- f) Print a statement letting the student know if they have passed or not.

An example of this program run is shown in the next page.

Exam: Introduction to Psychology

Question: By the 1920s a new definition of psychology had gained favor. Psychology was said to be the science of...

- 1) mind
- 2) consciousness
- 3) computers
- 4) behavior
- 5) philosophy

Enter your answer: 1
Incorrect

Question: A cognitive psychologist is most likely to be interested in...

- 1) therapy research
- 2) observational research
- 3) memory and perception
- 4) research involving some medicine or placebo
- 5) phenomenology

Enter your answer: 3
Correct

...

Your score was 70%
The minimum score to pass this exam is 85%
You have not passed. Please retake the exam.

Attachment A – Introduction to Psychology Exam

The First line is the Exam topic, in this case “Psychology and Science”

The second line is the passing score, in this case 85%

Then comes 10 sets of the following data:

- 1 question
- 1 line containing 5 multiple choices separated by the symbol “#” (use the String method Split() to separate then inside your program.
- 1 number indicating the right answer

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Psychology and Science

85

By the 1920s a new definition of psychology had gained favor. Psychology was said to be the science of...

mind # consciousness # computers # behavior # philosophy

4

A cognitive psychologist is most likely to be interested in...

therapy research # observational research # memory and perception # research involving some medicine or placebo # phenomenology

3

Operational definitions are...

scientifically approved definitions # definitions illustrated with a concrete example or visual image # definitions which are very precise # dictionary definitions # definitions which tell how to collect data

5

What does it mean to say a definition is valid?

it can be repeated under the same circumstances and will produce the same result # it accurately represents the value of some variable # it measures what you think it measures, as shown by using a different method to measure the same variable # it is described in such a way that it can be measured # it seems reasonable

3

What does it mean to say a definition is reliable?

it means what you think it means # you can measure the same thing again and get the same results # there are no confounded variables # it can be used to make accurate predictions # it has been operationally defined

2

Replication...

relies on self-report methods # is important precisely because it involves the same claim but a different test, with different procedures # is "secondary in importance" to honesty, according to the chapter # is possible only with experimental, not observational research # is essentially repetition of research in all its details

5

In observational research there are no...

variables # operational definitions # standardized tests # experimental manipulations # statistical tests

4

What is the independent variable, in experimental research?

a variable which nobody controls or changes # the variable which is manipulated in an experiment # the variable which is measured, to see results of an experiment # a variable

which describes some durable characteristic of the subject # a variable which is held steady

2

A single-blind design should be sufficient to eliminate _____ as a confounded variable.

placebo effects # experimenter effects # subject variables # self-selection # measurement effects

1

How are experimenter effects eliminated?

with a single blind design # with a double blind design # with reactive measures # with operational definitions # with convergent operations

2