

Philip Pesic

Week 5

February 19 2023

Week 5 Q15

1) What are the characteristics of Alternative Sequences ?

Alternative sequences are sequences of actions/events with multiple branches. These branches, also determined by if/else statements, are “alternative” paths that a sequence might take.

2) Why do you need alternative sequences in a program ?

Alternative sequences are necessary in programs because they allow for flexibility of code and interaction with a user (Ex: if() {`//Code based on input`})

3) Explain what are criteria ?

Criteria are rules or standards by which something is judged. In the context of if/else, criteria is the same as condition, or the need for an alternative sequence to be executed.

4) How clear are you on what criteria you use in making choices in your everyday life ?

Criteria is used in many parts of everyday choice making. Similar to if/else, real life contains endless decisions, and criteria are the basis for which the selection of a decision is made.

5) Do you think it is absolutely necessary to be perfectly clear on the conditions you write in computer programs ?

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It is necessary to be clear when writing conditions in programs because computers/compilers cannot interpret someone's intentions or wants. They simply execute what is told, meaning clarity is vital to writing conditions.

6) You will notice that a block of code is indicated with a set of parentheses `{ code }`. What does it mean to have a nested if statement inside an if statement ? Give an example.

A nested if statement is an if statement that is inside the body or `{ }` of another.

Ex: `if (x==1) {if (y==2) { //Executed if both are true } ; } ;`

7) Do you think most programs have a lot of Alternative sequences, if not.. why not.. if so, why so.

Most programs utilize alternative sequences because of their flexibility and widespread applicability, as mentioned previously.

8) What is the purpose/advantage/benefit of Flow Charting ?

Flowcharting allows a programmer to visually represent a sequence and its branches, which can be easier to comprehend than a block of code.

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9) What are the 6 relational operators ?

==, <, >, <=, >=, !=

//Equal, less than, greater than, less than or equal to, greater than or equal to, not equal to

10) How is the equal sign in JAVA different then in a math class ?

In java, = is used to assign value, whereas == is used to denote equivalency like an = in math

11) What is the purpose of comments ?

Comments are ignored by the compiler and can be used to write notes, explain code, etc.

12) What did Bill Gates say about IF statements ?

In his video, bill gates explains if statements, their use and implementation, and how they're vital to almost every program.

13) What is Single Selection ?

Single selection is the term used to describe a single decision a sequence must make, or in other terms, a single branching path (if)

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14) What is Double Selection ?

Double selection is the term used to describe a double decision a sequence must make, or in other terms, 2 choices at a single point (if/else)

15) Integrated studies: Computer Science Alternative Sequences (Branching, Selection, Decision) and Individual

Liberty. Each person has a 'volitional conceptual facility' which they can use to create and set 'criteria' to select

'alternative sequences'. Using their mind, each person can best choose the 'productive paths' of life. Is this

volitional-choice, the basis/foundation, the link for the next level concept of Individual Liberty, freedom ?

Alternative selection is essentially the basis for all decisions and destiny. Without it, humans would be unable to think and act. By being able to decide, humans gain the ability to decide their liberty and freedom.