

CHAPTER 8

___ equivalence in type checking is when two objects are built in the same way using the same type constructors from the same simple types.

- A. Referential
- B. Simple
- C. Constructor
- D. Structural

Doğru cevap: Structural

___ is a term used for the type correctness of assignments.

- A. Assignment Linking
- B. Value Assignment
- C. Assignment compatibility
- D. Backwards compatibility

Doğru cevap: Assignment compatibility

___ types are set whose elements are named and listed explicitly.

- A. List
- B. Array
- C. Enumerated
- D. Simple

Doğru cevap: Enumerated

___ types have no name

- A. Generic
- B. Anonymous
- C. Variable
- D. User-Defined

Doğru cevap: Anonymous

A data type is a(n) ___?

- A. encoding form
- B. set of values
- C. style of storage

D. group of location in memory

Doğru cevap: set of values

A narrowing conversion is an implicit conversion that may result in loss of data. T/F

Doğru cevap: True

A reference is the address of an object under control of the system, which cannot be used as a value or operated on in any way. T/F

Doğru cevap: True

A union is considered to be discriminated if a tag is added to the union to distinguish the type of the element. T/F

Doğru cevap: True

A(n) __ type uses itself in its declaration.

A. Bootstrap

B. Recursive

C. Reference

D. Enumerated

Doğru cevap: Recursive

Ada has a completely safe union mechanism called a variant record. T/F

Doğru cevap: True

Ada is a language with no explicit types. T/F

Doğru cevap: False

All computer data is finite. T/F

Doğru cevap: True

All data types must be names. T/F

Doğru cevap: False

Casts are permitted on structured types if they have identical sizes in memory. T/F

Doğru cevap: True

Each type descriptor includes a field called a type for to identify the category of the data type. T/F

Doğru cevap: True

Enumerated types are never ordered. T/F

Doğru cevap: False

Every language comes with a set of predefined types from which all other types are constructed. T/F

Doğru cevap: False

Explicit conversions are often referred to as ____.

A. Casts

B. Coercions

C. Narrowing conversions

D. Widening conversions

Doğru cevap: Casts

Explicit typing can be used to remove ambiguities in programs. T/F

Doğru cevap: True

For multidimensional array declarations must have all but the first dimension specified. T/F

Doğru cevap: True

For multidimensional arrays, the column-major form of allocation can be used only if all array indices must be specified together. T/F

Doğru cevap: True

Hindley-Milner type checking assigns type variables to all unnamed types. T/F

Doğru cevap: True

If a type must be inferred by the translator, it is considered to be a(n) ____ type.

A. Explicit

B. Strong

C. Implicit

D. Weak

Doğru cevap: Implicit

If information is maintained and checked at runtime, the checking is ___.

- A. Dynamic
- B. Static
- C. Referential
- D. Inferential

Doğru cevap: Dynamic

Implicit conversion are often referred to as ___.

- A. Type leaps
- B. Symbolic conversions
- C. Interpretive conversions
- D. Coercions

Doğru cevap: Coercions

In a strongly typed programming language, the set of legal programs is a proper subset of the set of safe programs. T/F

Doğru cevap: True

In Ada, simple data types are called scalar types. T/F

Doğru cevap: True

In C, the Cartesian product type constructor is available as the ___ construction.

- A. structure
- B. set
- C. array
- D. enumerator

Doğru cevap: Structure

In C, types that are constructed using type constructors are called derived types. T/F

Doğru cevap: True

In C/C++, multidimensional array declaration must have all but the first dimension specified. T/F

Doğru cevap: True

In Java, types constructed using type constructors are called ___ types.

- A. Reference
- B. Simple
- C. Primitive
- D. Integral

Doğru cevap: Reference

Java does not allow dynamically sized arrays. T/F

Doğru cevap: False

Languages without static type systems are usually called ___ languages.

- A. reverse types
- B. untyped
- C. weakly typed
- D. strongly types

Doğru cevap: untyped

Ordinal data types in Ada are called ___ types.

- A. Simple
- B. Scalar
- C. Composite
- D. Discrete

Doğru cevap: Discrete

Pointers are often used in the creation of recursive types. T/F

Doğru cevap: True

Polymorphism allows names to have multiple types but does not allow for static type checking. T/F

Doğru cevap: False

Static type checking occurs at runtime. T/F

Doğru cevap: False

Static type information allows compilers to allocate memory efficiently. T/F

Doğru cevap: True

Subset types inherit operations from their parent types. T/F

Doğru cevap: True

The most general type possible for a polymorphic function with a given implementation is called its ___ type.

- A. General
- B. Base
- C. Principal
- D. Specialized

Doğru cevap: Principal

The primary data structure used to represent type attributes is called a type ___.

- A. Definer
- B. Descriptor
- C. Constructor
- D. Enumerator

Doğru cevap: Descriptor

The process a translator goes through to determine whether the type information in a program is consistent is called type ___.

- A. Inference
- B. Constructing
- C. Equivalence
- D. Checking

Doğru cevap: inference

The type system is the naming convention for data types. T/F

Doğru cevap: False

To create a new data type that contains a subset of a known data type, the ___ mechanism is used.

- A. subtype
- B. anonymous union
- C. intersection

D. product

Doğru cevap: Subtype

To obtain the value of a location in memory referenced by a pointer, the pointer must be ___.

A. Dereferenced

B. Linked

C. Evaluated

D. Product

Doğru cevap: Dereferenced

Type ___ algorithms determine if two separately declared types are the same.

A. Inference

B. Equivalence

C. Comparison

D. Enforcing

Doğru cevap: Equivalence

Type ___ are used to construct complex types from basic types.

A. Constructors

B. Assemblers

C. Checkers

D. Combiners

Doğru cevap: Constructors

Type declaration is the process of ___.

A. Inferring new data types

B. Creating type constructors

C. Naming new data types

D. Associating data types of identifiers

Doğru cevap: Naming new data types

When a structured type is cast, the translation merely ___ the memory as a different type.

A. Reallocates

B. References

C. Reinterprets

D. Realigns

Doğru cevap: Reinterprets

Which of the following languages has no explicit types or translation-time typing?

A. Ada

B. Java

C. C++

D. Scheme

Doğru cevap: Scheme

CHAPTER 9

_____ code is code for a function body that is inserted directly at the point where the function would be called

Doğru cevap: Inline

_____ errors can occur at any moment, not necessarily in response to program code execution

Doğru cevap: Asynchronous

_____ evaluation stops once the truth value of a Boolean expression is known

Doğru cevap: Short-circuit

_____ statements transfer control to and from sequences of statements

Doğru cevap: Block

_____ are an example of implicit control mechanisms

Doğru cevap: exception handlers

_____ states that any two expressions in a program that have the same values may be substituted for each other anywhere in the program

Doğru cevap: Referential transparency

A _____ is executed for its side effects and returns no value

Doğru cevap: Statement

A general form for a loop construct is given by Dijkstra's structure called the _____

Doğru cevap: guarded do

A language has referential transparency when its expression produce no side effects

Doğru cevap: T

A sentinel-based loop is often used in situations where a series of input values must be processed

Doğru cevap: T

A unary operator can take one or more operands

Doğru cevap: F

Ada uses a(n) _____ for its if-statements

Doğru cevap: bracketing keyword

Alan Turing introduced the guarded if statement

Doğru cevap: F

All languages restrict expression from producing side effects

Doğru cevap: F

An ambiguity in which it cannot be determined which if statement that should be associated with a single else statement is called the _____ problem

Doğru cevap: dangling - else

An expression, in its purest mathematical form, produces side effects

Doğru cevap: F

Arguments are specified for use with _____

Doğru cevap: functions

Bracketing keywords are used in the if statement to remove ambiguity

Doğru cevap: T

Delayed evaluation is sometimes called strict evaluation

Doğru cevap: F

Evaluating all operands before applying operators is called ____ evaluation

Doğru cevap: applicative order

Exception handlers throw exceptions

Doğru cevap: F

Exception handling is an attempt to imitate in a programming language the features of a hardware interrupt or error trap

Doğru cevap: T

Functions are written in prefix form

Doğru cevap: T

If a program crashes, it fails the _____ test

Doğru cevap: robustness

If an exception is thrown and no handler is found in the block, control is passes to the next enclosing block in a process that is called ____ the exception

Doğru cevap: propagating

If control resume at the point where the exception was the first raised, _____ model is being used

Doğru cevap: resumption

If-expression never have all of their subexpressions evaluated

Doğru cevap: T

If-operators are a special case of operators that delay evaluating their operands

Doğru cevap: T

If-then-else is an example of a binary operator

Doğru cevap: F

In a case statement, no two listed cases may have the same value after conversion

Doğru cevap: T

In a function, the operands are viewed as ____

Doğru cevap: arguments

In C, the ____ statement skips the remainder of the loop body and resumes execution with the next evaluation of the control expression

Doğru cevap: continue

In C++, exception handlers are associated with ____ blocks

Doğru cevap: try-catch

In normal order evaluation, each operation begin its evaluation before its operands are evaluated

Doğru cevap: T

In the absence of side effects, normal order evaluation does not change the semantics of a program

Doğru cevap: T

In the guarded if statement, the ____ are the Boolean expressions

Doğru cevap: guards

Lisp rewuires all expression to be fully parenthesized

Doğru cevap: T

Most languages use a mix-fix form that distributes the syntax of an if-then-else operator throughout the expression

Doğru cevap: T

operators can be written in infix, postfix or prefix notation

Doğru cevap: T

Sequence operators are used to ____

Doğru cevap: allow several expression to be combined into a single expression and evaluated

Stack unwinding occurs when an exception is thrown and control is ____

Doğru cevap: exited back in search of a handler

Synchronous errors occur in direct reaction to program execution

Doğru cevap: T

Syntactic sugar is a language construct that is completely expressible in terms of other constructs

Doğru cevap: T

The advantage of postfix and prefix forms of expression is that ____

Doğru cevap: they do not require parentheses to express the order in which operators are applied

The do statement ensure that the code of a loop is executed at least once

Doğru cevap: T

The for - loop construct provides for a(n) ____ expression, a test expression and an update expression

Doğru cevap: initializer

The most closely nested rule is used to disambiguate ____

Doğru cevap: if statements

The termination model resumes control at the exact point an exception is first raised after it is handled

Doğru cevap: F

To exit a loop completely, the continue statement is used

Doğru cevap: F

When an error is thrown, a(n) ____ is executed to recover normal execution

Doğru cevap: exception handler

CHAPTER 10

__ are known as actual parameters.

A. Arguments

B. Global variables

C. Control statements

D. Normal parameters

Doğru cevap: Arguments

___ are used to revert control back to a method caller.

A. Return-statements

B. Revert-statements

C. Control-statements

D. Redirect-statements

Doğru cevap: Return-statements

___ occurs when multiple access links must be followed to arrive at a nonlocal variable

Doğru cevap: Access chaining

A ___ is a mechanism in programming for abstracting a group of actions or computations.

A. Statement

B. Procedure

C. Block

D. Method

Doğru cevap: Procedure

A call to procedure transfer to control to the beginning of the body of the called procedure. T/F

Doğru cevap: True

A procedure communicates with its calling environment through ___.

A. Parameters

B. Local variables

C. Constants

D. Shared Memory

Doğru cevap: Parameters

A procedure communicates with the rest of the program through its parameters and through ___.

A. Constants

B. Functions

C. Nonlocal references

D. Overloaded variables

Doğru cevap: Nonlocal references

A procedure declaration creates a constant procedure value and associates a symbolic name with that value. T/F

Doğru cevap: True

A procedure is a mechanism for abstracting a group of actions or computations. T/F

Doğru cevap: True

A procedure is defined by providing a(n) and a body.

- A. Name
- B. Interface
- C. Activation Record
- D. Error Handler

Doğru cevap: Interface

A procedure specification includes its names, the names and types of its formal parameters and its return type, if any. T/F

Doğru cevap: True

A procedure with no nonlocal dependencies is considered to be in __ forms.

- A. Independent
- B. Closed
- C. Control
- D. Structured

Doğru cevap: Closed

An activation block cannot communicate with the rest of the program. T/F

Doğru cevap: False

An activation record is a stored log, recording each time a procedure or function is activated. T/F

Doğru cevap: False

Another name for activation record is stack record. T/F

Doğru cevap: False

Historically, the interpretation of pass by name arguments as functions to be evaluated was expressed by referring to them as ____.

- A. chunks
- B. objects
- C. thunks
- D. expressions

Doğru cevap: Thunks

If a parameter behaves as a constant value during execution, the parameter is passed ____.

- A. By address
- B. By reference
- C. By type
- D. By value

Doğru cevap: By Value

If a pointer is passed by value, the procedure cannot modify the contents of the pointer. T/F

Doğru cevap: False

If the parameter becomes an alias for the argument, the parameter is passed ____.

- A. by reference
- B. by address
- C. by value
- D. by type

Doğru cevap: By reference

In a(n) ____ environment, all memory allocation can be preformed at load time, and the location of all variables are fixed for the duration of program execution.

- A. Dynamic
- B. Universal
- C. Global
- D. Fully static

Doğru cevap: Fully static

In a(n) ____ environment, activation records are not removed as long as there are references to any of its local objects

Doğru cevap: fully dynamic

In Ada, parameters can be declared an in or out, but not both. T/F

Doğru cevap: False

In C and Java, parameters are passed by value behave as local variables of the procedure. T/F

Doğru cevap: True

In pass by name parameter passing, arguments are not evaluated until their actual use as parameters in the procedure. T/F

Doğru cevap: True

In strongly typed languages, procedure calls must be checked so that the arguments agree in type and number with the parameters of the procedure. T/F

Doğru cevap: True

Mark and sweep is a lazy method of storage reclamation. T/F

Doğru cevap: True

Pass ____ copies in the parameter value, and at the end of execution, copies out the final value of the parameter.

A. by value

B. by reference

C. by value-result

D. by address

Doğru cevap: By value-result

Pass by name can be described as an advanced inlining process for procedures. T/F

Doğru cevap: True

Pass by name is included in all Algol60 descendants. T/F

Doğru cevap: False

Pass by reference is also known as copy-in, copy-out. T/F

Doğru cevap: True

Pass by value can be described as an advanced inlining process for procedures. T/F

Doğru cevap: True

Pass by value implies that changes cannot occur outside the procedure through the use of parameters. T/F

Doğru cevap: False

Pass by value is the default mechanism in C++ and Pascal. T/F

Doğru cevap: True

Procedures were first introduced when memory was scarce, as a way of splitting a program into small, separately compiled pieces. T/F

Doğru cevap: True

Recursion is allowed in Fortran77. T/F

Doğru cevap: False

Reference counting is a form of ____

Doğru cevap: reclamation of storage that is no longer referenced

Reference counting is a lazy method of storage reclamation. T/F

Doğru cevap: False

The ____ determines the allocation of memory.

- A. stack
- B. Environment
- C. Memory Manager
- D. Translator

Doğru cevap: Environment

The ____ environment houses global variables.

- A. Calling

- B. Dynamic
- C. Defining
- D. Universal

Doğru cevap: Defining

The ___ is the memory allocated for the local objects of a procedure block.

- A. Call record
- B. Activation record
- C. Activation heap
- D. Heap record

Doğru cevap: Activation record

The ____ environment maintains the location of the current activation record

Doğru cevap: environment pointer

The access link provides access to ____

Doğru cevap: nonlocal variables

The group of actions in a procedure is called the ___ of the procedure.

- A. Parameters
- B. Arguments
- C. Activation record
- D. Body

Doğru cevap: Body

The local variable ___ stores the distance from the environment pointer

Doğru cevap: offset

The pointer to the previous activation record is the ___ link

Doğru cevap: control

The process of joining a block of free memory with immediately adjacent blocks to form a larger contiguous block of free memory is called ____

Doğru cevap: coalescing

Variables declared in the calling method are said to be in the __ environment.

- A. Calling
- B. Defining
- C. Static
- D. Stack

Doğru cevap: Calling

When parameters are passed by value, the arguments are expressions that are evaluated at the time of the call, with all the arguments' value becoming the values of the parameters during execution of the procedure. T/F

Doğru cevap: True

When you define a procedure, the parameters you list in the interface are the formal parameters. T/F

Doğru cevap: True

You call a procedure by stating its name, together with arguments to the call. T/F

Doğru cevap: True

CHAPTER 11

An integer is an example of a predefined data type.

True False

Doğru cevap: True

Modifiability, reusability and security are three important design goals of abstract data types.

True False

Doğru cevap: True

Encapsulation refers to the collection of all definitions related to a data type in one location

True False

Doğru cevap: True

Information hiding refers to the separation of data from the programmer.

True False

Doğru cevap: False

Mathematical models of an abstract data type can be given in terms of an algebraic specification.

True False

Doğru cevap: True

The mathematical concept of a type is the conceptual model for actual types.

True False

Objects in an object-oriented programming and abstract data type mechanisms are essentially the same, with the same level of active control.

True False

Doğru cevap: False

Abstract data types are independent of the language paradigm.

True False

Doğru cevap: True

An algebraic specification of an abstract data type provides a concise specification of the type and its associated operations.

True False

The arrow of the syntactic specifications of a function separates the function's domain and range.

True False

Doğru cevap: True

Axioms that are used to specify error values are called error axioms.

True False

Doğru cevap: True

Predicates and selectors are subtypes of constructors.

True False

Doğru cevap: False

Modules enhance the problem of name proliferation.

True False

Doğru cevap: True

Exported names should be qualified by the module name to avoid accidental name clashes.

True False

Doğru cevap: True

Only prototypes are placed in a C header file.

True False

Doğru cevap: False

Incomplete types are missing their actual representation.

True False

The C compiler enforces all of the protection rules normally associated with module or ADT mechanisms.

True False

The use of namespaces is explicitly tied to separate compilation.

True False

Doğru cevap: False

The Java import declaration does not correspond to the abstract notion of an import in the definition of a module.

True False

Pointers are automatically dereferenced in Ada by the dot notation.

True False

Doğru cevap: True

In Modula-2, the declarations that appear in the DEFINITION MODULE are exported and are usable by other modules.

True False

Doğru cevap: True

Object oriented languages solve the initialization problem by the use of constructors.

True False

Doğru cevap: True

An existential type of an abstract data type asserts the existence of an actual type that meets its requirements.

True False

Doğru cevap: True

Initial semantics assume that any two data values that cannot be distinguished by inspector operations must be equal.

True False

Doğru cevap: False

The principle of extensionality states that two things are equal precisely when all their components are equal.

True False

Doğru cevap: True

A(n)_____ is a set of values,along with certain operations on those values.

A) expression

B) data type

C) variable

D) class

Doğru Cevap: data type

A _____ is a combination of simple values organized in a particular manner.

A) variable

B) class

C) data type

D) data structure

Doğru Cevap: data structure

_____ is the separation of implementation details from definitions.

A) Encapsulation

B) Information hiding

C) Type checking

D) Obfuscation

Doğru Cevap: Encapsulation

_____ are collections of services that may or may not include a data type or types.

A) Modules

B) Data types

C) Classes

D) Objects

Doğru cevap: Modules

The _____ of a data type includes the name of the type and the names of the operations.

A) definition

B) parameters

C) signature

D) properties

Doğru cevap: signature

In a language-independent specification of a data type in which the signature depends on another type, we say that it _____ the other type.

A) loads

B) imports

C) borrows from

D) inherits

Doğru cevap: inherits

In mathematics, the semantic properties of functions are often described by _____.

A) formulas

B) axioms

C) symbols

D) proofs

Doğru cevap: axioms

In the example of a complex number data type presented in the textbook, the properties of the complex data type can be ____ from those of the real data type by stating properties of the operations.

- A) inferred
- B) implied
- C) derived
- D) assumed

Data types can be ____ by creating specifications with unspecified data types.

- A) parameterized
- B) overloaded
- C) shadowed
- D) made generic

Doğru cevap: parameterized

An operation that creates a new object of the data type being defined is called a(n) ____.

- A) constructor
- B) initializer
- C) generator
- D) invoker

Doğru cevap: constructor

Inspectors are operations that ____.

- A) retrieve previously constructed values
- B) verify data correctness
- C) check for security holes
- D) analyze data types

Doğru cevap: retrieve previously constructed values

Predicates are inspectors that return ____ data.

- A) integer
- B) Boolean
- C) string
- D) floating point

Doğru cevap: Boolean

ML user-defined operators are known as ____.

- A) overloaded operators
- B) enhanced operators
- C) operator functions
- D) infix functions

Doğru cevap: infix functions

A(n)____ is a program unit with a public interface and a private implementation.

- A) module
- B) data type
- C) axiom
- D) block

Doğru cevap: Module

In C, a function declaration without a body is called a(n) ____.

- A) header
- B) infix function
- C) prototype
- D) module

Doğru cevap: prototype

The C++ ____ mechanism is used to simulate the support of modules in C.

- A) package
- B) module
- C) namespace
- D) include

Doğru cevap: namespace

The namespace-like mechanism in Java is the ____.

- A) module
- B) namespace
- C) import
- D) package

Doğru cevap: package

Ada's module mechanism is the ____.

- A) package
- B) module
- C) namespace
- D) import

Doğru cevap: package

Parameterized packages are called ____ packages in Ada.

- A) flexible
- B) signature
- C) generic
- D) incomplete

Doğru cevap: generic packages

In ML, a signature is essentially the type of the ____.

- A) class
- B) package
- C) structure
- D) function

Doğru cevap: function

In CLU, modules are defined using the ____ mechanism.

- A) package
- B) cluster
- C) namespace
- D) import

Doğru cevap: cluster

____ parameterization forces Ada to assume operations beyond basic equality and assignment.

- A) Constrained
- B) Specified
- C) Inferred
- D) Linked

Doğru cevap: Constrained

A set and operations that meet the algebraic specification of an abstract data type are a(n)_____ for the specification.

- A) example
- B) model
- C) prototype
- D) abstract

Doğru cevap: model

Using the initial algebra as the data type of the specification results in what are called the _____.

- A) algebraic definitions
- B) initial definitions
- C) algebraic semantics
- D) initial semantics

Doğru cevap: initial semantics

Axiom _____ is the property that no axiom is implied by other axioms.

- A) distinction
- B) separation
- C) specification
- D) independence

Doğru cevap: independence