

Key concepts for topic 1: Extended review of C and C++

conditional operator

const

strcat

strcmp

strcpy

string.h

strlen

syntax error

Preprocessor

#define

#ifdef

#include

macro

preprocessor

Bitwise operations

|

&

<< (bitwise)

>> (bitwise)

~

bit

bitwise AND

bitwise NOT

bitwise OR

bitwise XOR

complement

conjunction

disjunction

exclusive OR

flag

intersection

mask

shift left

shift right

Subprograms

activation frame

actual parameter

argc

argv

automatic variable

batch file

command interpreter

command-line argument

ellipses

external linkage

formal parameter

function body

function declaration

function definition

function header

function return type

function type

functional decomposition

global variable

local variable

modularity

module hierarchy chart

module independence

parameter

procedural abstraction

prototype

recursion

reference parameter

infinite loop

initialization

return value

scope of access

stack

stack overflow

static variable

storage class

storage duration

top-down design

value parameter

variable-sized argument list

void function

void parameter

Debugging

assert

correctness

debugger

driver

exercising all paths

intermediate variables

logic error

loop invariant

postcondition

precondition

runtime error

stub

trace statement

unstructured code

Key concepts for topic 2: Structure types and classes

attribute

class

constructor

data abstraction

destructor

encapsulation

enum

enumerated type

implementation

information hiding

instance

interface

member

member function

member-selection operator

modular decomposition

modularity

nested structures

object

private

public

struct

structure

structure initialization

structure parameter

structure type

typedef

union

Key concepts for topic 3: File input/output

append mode

EOF

fclose

feof

fgets

FILE

file pointer

file stream

fopen

fprintf

fscanf

fstream

fstream.h

fstream::close

fstream::open

fstream::seekg

fstream::seekp

ifstream

ifstream::eof

ifstream::getline

ofstream

ostream

pointer to *FILE*

random access

read mode

sequential access

stream

write mode

Key concepts for topic 4: Arrays

array

boundary checking

capacity

collection

element

initialization

matrix

merge

multidimensional array

occupancy

relation

row-major ordering

sizeof

subscript

terminator value

two-dimensional array

utilization

vector

Key concepts for topic 5: Pointers, dynamic allocation, linked lists

&	Linked lists
*	collection
->	data abstraction
address operator	data structure
allocate	deletion from list
constructor function	doubly linked list
deallocate	header node
<i>delete</i>	insertion into list
<i>delete[]</i>	link member
dereferencing operator	list implementation
dynamic variable	list node
<i>free</i>	<i>next</i>
free store	NULL link
heap	prepend
invalid pointer	self-referencing type
<i>malloc</i>	traversal
memory leak	
<i>new</i>	
<i>new[]</i>	
<i>NULL</i>	
pointer declaration operator	
<i>sizeof</i> operator	
member-dereferencing operator	
type cast	

Key concepts for topic 6: Languages and language processing

compiler

declarative language

functional language

interpreter

lexical analysis

object-oriented language

parse tree

procedural language

scripting language

token

Key concepts for topic 7: algorithm analysis, searching, sorting

big-O notation

binary search

binary-search precondition

bubble sort

complexity of an algorithm

complexity of a problem

insertion sort

linear search

$\log_2 n$

merge

$O(1)$

$O(n)$

$O(n^2)$

$O(\log n)$

pass

search key

selection sort

sort postcondition

swap

**Key concepts for topic 8:
Computer science and discrete probability**

Key concepts for topic 9: Introduction to software engineering

controller class

event loop

model class

view class

Separate compilation

.obj file

build

extern

header file

linkable object file

linker

project

separately compiled file

unresolved function call

Stacks, queues

circular array

circular list

dequeue

enqueue

FIFO

is_empty

is_full

LIFO

pop

push

queue

stack

top of stack