Corrections to the CS435 final examination 27 April 2001

• **IGNORE** the question numbering and mark distribution on the exam. There are 22 questions (not 20) for a total of 105 marks. Using the numbering from the exam paper, the **correct** marks are ((**question_nr**)[**mark**]):

(8)[5]	(16)[3]
(9)[3]	(17)[4]
(10)[5]	(18)[6]
(11)[5]	(19)[6]
(12)[6]	(20)[6]
(13)[3]	(20)[3]
(14)[6]	
(15)[2]	
	(8)[5] (9)[3] (10)[5] (11)[5] (12)[6] (13)[3] (14)[6] (15)[2]



- In question (3), replace "Assume a data stream of ten 0s" by "Assume a data stream of 8 bits (leftmost sent first): 01101000". If you make a choice about representation (*e.g.*, positive signal represents a 0 bit), mention this *explicitly*.
- In question (7), do not give the relation only, but also derive/describe it.
- In the first question (20), give your explanation by means of a sequence diagram (communication between client and server as a function of time) demonstrating three-way handshake and four-way handshake. Annotate your sequence diagram with
 - the C function calls a user would make in client and server,
 - the states (from the State Transition Diagram),
 - the packet types sent back and forth between client and server.

The transition from the CLOSE_WAIT state should be labelled close/fin as in the figure above.

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(1)[10] (2)[2] (3)[14] (4)[3] (5)[2] (6)[3] (6)[4]	(8)[5] (9)[3] (10)[5] (11)[5] (12)[6] (13)[3] (14)[6]	(16)[3] (17)[4] (18)[6] (19)[6] (20)[6] (20)[3]	CLOSE_WAIT close/fin LAST_ACK
(6)[4] (7)[4]	(14)[6] (15)[2]		passive close

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