Test Case Specifications for System Testing of Case Study 1

Here we specify all the test cases to be used for system testing. These test cases form a part of the system testing plan. For test case specifications we specify the different conditions that need to be tested, along with the test cases used for testing those conditions and the expected outputs. Then the data files used for testing are given. The test cases are specified with respect to these data files. The test cases have been selected using the functional approach. The goal is to test the different functional requirements, as specified in the requirements document. Test cases have been selected for both valid and invalid inputs.

SEQ NO.	TEST_CASE [File]	CONDITION BEING CHECKED	EXPECTED OUTPUT
1	Empty_file	Empty F1	Print message and stop
2	Empty_file	Empty F2	Print message and stop
3	No file F1	Does not exist	Print message and stop
4	No file F2	Does not exist	Print message and stop
		For checking FILE1 format error	
5	[F1.1]	Incorrect course no. format	Print course no. and error message
6	[F1.7]	More than allowed (30) courses	Error message and skip to lecture times
7	[F1.4]	Course list empty	Error message and skip to lecture times
8	[F1.5]	Spelling of header	Error message and stop
9	[F1.1]	Lecture time format	Print time, error message, and continue
10	[F1.2]	More than allowed no. of lecture times (15)	Error message, discard extra and skip to room no.s
11	[F1.4]	Lecture times list empty	Print "No lecture times" and parse rooms
12	[F1.1]	Incorrect room no format	Print room no. and message
13	[F1.1]	No colon (:) between room# and capacity	Continue
14	[F1.1]	Capacity format	Print message with room no. and capacity and continue
15	[F1.1]	Capacity more than limit (300)	Error message, continue
16	[F1.1]	Capacity less than 10	Error message, continue
17	[F1.7]	More than 20 room#, cap entries	Error message, stop
18	[F1.4]	Room list empty	Error message, stop
19	[F1.1]	No correct room entries	Error message, no scheduling, continue parsing
20	[F1.3]	Same course_no entered more than once	Print message and discard the entry
21	[F1.3]	Duplicate lecture time	Print message, discard it, and continue
22	[F1.3]	Duplicate room entry	Print message, ignore it, and continue

SEQ NO.	TEST_CASE [File]	CONDITION BEING CHECKED	EXPECTED OUTPUT
FILE2 format (for FILE1, F1.8 is used)			
23	[F2.1]	Enrollment ≤ 2	Print message, ignore it, and continue
24	[F2.1]	Enrollment in range [3–250]	Executes normally
25	[F2.1]	Enrollment exceeds 250	Print message,continue
26	[F2.2]	No preference specified	Scheduled
27	[F2.1]	More than allowed number of preferences (5).	Print message and discard the rest
28	[F2.1]	Duplicate course entry	Print message and ignore duplicate
Consistency of FILE2 with FILE1. File F1.8 used for file 1.			
29	[F2.1]	Course not present in the list of offered courses	Print message, ignore it, and continue
30	[F2.1]	Preference not found in lecture time list	Print message and ignore the preference
31	[F2.1]	Enrollment > max. room capacity available	Error message
32	[F2.4]	Missing enrollment field	Ignore the course
SCHEDULING cases. File F1.8 used for file 1.			
33	[F2.4]	No valid courses in F2	Print message and stop
34	[F2.2]	No PG course with prefs	Schedule
35	[F2.4]	No UG course with prefs	Schedule
36	[F2.4]	No PG courses with no pref	Schedule
37	[F2.2]	No two courses allotted at the same time and in the same room	The first course is given the first preference
38	[F2.2]	Room capacity is more than the classroom	Course scheduled in a room with capacity more than enrollment
39	[F2.2]	PG courses given priority over UG courses even if UG course appears before the PG course in input	PG course is scheduled; UG course faces conflict
40	[F2.2]	Courses scheduled in the order they appear in the input file	The first course is given the best pref., second the next pref., and so on
41	[F2.2]	Highest possible preference of a course is honored	The nth pref. honored with explanation for all the earlier n-1 preferences

SEQ NO.	TEST_CASE [File]	CONDITION BEING CHECKED	EXPECTED OUTPUT
42	[F2.3]	No two PG courses scheduled in the same slot even if same pref. given	The first one scheduled and conflict shown for the second course
43	[F2.3]	PG course with pref. given priority over PG courses with no preference	Courses with pref.s are scheduled before
44	[F2.2]	PG courses with no pref.s are guaranteed a room even if some UG course has to be "unscheduled"	PG course scheduled and conflict generated for the UG course
45	[F2.2]	No room with required capacity available for UG course with no preference	Error message

Data Files for Test Cases

Note: To present these files compactly, all the new line characters are not included. Some formatting has been done to enhance readability.

File F1.1

rooms

    F-101 30 105 : 40 1052 : 25 F30:50 301 :9 311: 325 320 200

    310 : 211 312 2a 313 : 34 201 :00 678 ;

courses

    XC539 x29 53ABc cs5394 csa59 cs250 CS 245 CS665 ;

times

    TT TW10 TT10:30 MWF10:30 MWF9 MWF09 MWF789 10253 TTL2 TT11 TT10-30 ;

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File F1.2

rooms

    100 20 200 39 201 45 202 50 203 50 204 60 205 200 206 299

    207 10 208 300 209 100 301 11 302 25 303 15 304 56 305 77

    306 30 307 40 308 60 309 90 400 95 404 44 405 67 ;

courses

    cs444 cs_233 CS555,cs3423 cs665 ;

times

    TT8 TT9 MWF8 MWF9 MWF10 MWF11 MWF12 MWF2 MWF3 MWF4 TT1:30

    TT11:30 TT1 TT3 TT5 TT12:30 TT3:30 ;

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File F1.3

rooms

    101 :250 303 49 401 40 101 30 303 45 202 50 ;

courses

    cs320 cs741 cs201 cs320 cs622 ;

times

    TT9 MWF12 TT10:30 MWF12 TT10:30 ;

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File F1.4

rooms

    ;

courses

;
times
    ;

File F1.5

rooms
    202 34 100 10 ;
course
    cs330 ;
timeslot
    TT1 MWF12 ;

File F1.6

rooms
    202:39 300 56 ;
courses
    ;
times
    TT3 ;

File F1.7

rooms
    101:25 456:78 345 90 346 90 347 90 348 90 349 90
    355 90 365 90 375 90 385 90 395 90 305 90 335 90
    495 90 545 90 645 90 745 90 945 90 946 90 155 90 ;
courses
    cs301, cs302, cs303, cs304 ,cs305, cs306 cs307 cs308
    cs309 cs201 cs601 cs602 cs603 cs604 cs605 cs606 cs607
    cs608 cs609 cs611 cs641 cs751 cs752 cs753 cs754 cs755
    cs756 cs757 cs758 cs759 cs123 ;
times
    MWF1, MWF2, MWF3, MWF4 MWF5 MWF6 MWF7 MWF8 MWF9 MWF91
    MWF92 MWF93 MWF94 MWF98 MWF99 MWF56

File F1.8

rooms
    201:50 202 75 203 30 204 150 ;
courses
    cs310, cs320, cs330, cs340 cs350 cs315 cs335 cs365 cs325 cs345,
    cs355 cs305 cs360 cs370 cs380 cs375, cs610 cs620 cs605 cs615,
    cs630, cs625, cs635 cs640 cs650 cs645 cs660, cs655 cs665 cs670 ;
times
    MWF9, MWF11, MWF2 TT8:30 TT1 TT11:30 ;

File F2.1

course
    cs305 25 TT8 TT6 TT9 MWF8
    cs344 45 TT1
    cd456 56 Tw56
    cs365 200 TT1 MWF9
    cs3a0 301 TT1

cs345 0 TT11:30
cs601 267 TT4
cs665 140 TT1
cs305 45 TT1
cs335 df TT1
cs645 45 TT1 TT11:30 TT8:30 MWF2 MWF11 MWF9
cs330 100 TT1 MWF9,
MWF2 MWF11

File F2.2

course	enrollment	preferences
cs355	35	TT1
cs660	70	
cs310	79	MWF11
cs640	100	
cs315	50	TT11:30
cs320	100	MWF9
cs305	50	TT1
cs325	70	TT1
cs345	35	
cs365	70	

File F2.3

course	enrollment	preferences
cs605	70	TT1
cs310	50	TT11:30, TT1
cs625	35	TT11:30
cs615	70	
cs325	35	MWF9
cs330	55	MWF9
cs610	100	TT1, TT11:30, MWF9
cs335	50	MWF9, TT11:30, TT1
cs650	150	MWF2 MWF9
cs635	50	
cs660	150	
cs655	30	TT1, MWF2 MWF9
cs315	52	
cs320	75	
cs305	70	MWF11
cs340	150	TT8:30
cs345	70	TT8:30 MWF11
cs350	50	TT8:30 MWF11
cs355	50	TT8:30 MWF11, MWF2
cs360	50	MWF9 MWF11
cs365	30	
cs370	50	
cs375	50	
cs620	155	

File F2.4

course	enrollment	preferences

cs635	45	MWF11,TT11:30
cs620	36	TT1
cs330		
cs320	26	