|  |  |  |  |
| --- | --- | --- | --- |
| Reason For Test Case | Input Values | Expected Output | Observed Output |
| -Valid Students data. | Last1,First1 1234 M 100 100 100  Last2,First2 2235 M 89 80 80  Last3,First3 4236 M 70 79 74  Last4,First4 5237 F 60 69 65  Last5,First5 6238 F 9 59 50  Last6,First6 7239 F 50 60 91 | Last1,First1 1234 M 100.00 100.00 100.00 100 A  Last2,First2 2235 M 89.00 80.00 80.00 83 B  Last3,First3 4236 M 70.00 79.00 74.00 75 C  Last4,First4 5237 F 60.00 69.00 65.00 65 D  Last5,First5 6238 F 9.00 59.00 50.00 40 F  Last6,First6 7239 F 50.00 60.00 91.00 67 D  Grade Destitution Bar Chart  A|\*\*\*\*  B|\*\*\*\*  C|\*\*\*\*  D|\*\*\*\*\*\*\*\*  F|\*\*\*\*  >> Female: 50.00%  >> Male: 50.00%  >> The top exam performance for this semester is: 100.00%  >> The top avg of exams is for student with ID 1234 & avg was 100% |  |
| -one invalid | Last,First 1234 C 50 50 50 | Last,First 1234 C 50.00 50.00 50.00 ~~ Invalid data ~~  No Valid students data in file to evaluate grade distribution chart, male and female percentage and top exam and avg perfomance. |  |
| -all invalid | Last1,First1 1234 C 0 0 0  Last2,First2 1235 M 500 5 15 | Last1,First1 1234 C 0.00 0.00 0.00 ~~ Invalid data ~~  Last2,First2 1235 M 500.00 5.00 15.00 ~~ Invalid data ~~  No Valid students data in file to evaluate grade distribution chart, male and female percentage and top exam and avg perfomance. |  |
| -one valid record | Last,First 1234 M 50 60 70 | Last,First 1234 M 50.00 60.00 70.00 60 D  Grade Destitution Bar Chart  A|  B|  C|  D|\*\*\*\*  F|  >> Female: 0.00%  >> Male: 100.00%  >> The top exam performance for this semester is: 70.00%  >> The top avg of exams is for student with ID 1234 & avg was 60% |  |
| -valid with invalid data  -all valid data situations: exams that are on the low and high edge of the grade (this includes zeros, A grade edges, B grade edges, C grade edges, D grade edges, F grade edges, and 100)  - all invalid data situations:  - invalid low id, high id.  - invalid low exam (negative), high exam.  -invalid gender  - invalid exam1,exam2,exam3  - invalid all  - no gender in input | Last1,First1 1234 M 65 66 67  Last2,First2 5678 M 0 0 0  Last3,First3 9012 M 75 77 79  Last4,First4 3456 M 99 95 92  Last5,First5 7890 F 77 0 100  Last6,First6 4321 M 50 60 70  Last7,First7 123 M 16 100 15  Last8,First8 1212 N 12 90 89  Last10,First10 1313 M -1 59 48  Last11,First11 1414 F 97 101 66  Last12,First12 -1 T 234 567 890  Last13,First13 9876 70 70 71 | Last1,First1 1234 M 65.00 66.00 67.00 66 D  Last2,First2 5678 M 0.00 0.00 0.00 0 F  Last3,First3 9012 M 75.00 77.00 79.00 77 C  Last4,First4 3456 M 99.00 95.00 92.00 96 A  Last5,First5 7890 F 77.00 0.00 100.00 59 F  Last6,First6 4321 M 50.00 60.00 70.00 60 D  Last7,First7 123 M 16.00 100.00 15.00 ~~ Invalid data ~~  Last8,First8 1212 N 12.00 90.00 89.00 ~~ Invalid data ~~  Last10,First10 1313 M -1.00 59.00 48.00 ~~ Invalid data ~~  Last11,First11 1414 F 97.00 101.00 66.00 ~~ Invalid data ~~  Last12,First12 -1 T 234.00 567.00 890.00 ~~ Invalid data ~~  Last13,First13 9876 7 0.00 70.00 71.00 ~~ Invalid data ~~  Grade Destitution Bar Chart  A|\*\*\*\*  B|  C|\*\*\*\*  D|\*\*\*\*\*\*\*\*  F|\*\*\*\*\*\*\*\*  >> Female: 16.67%  >> Male: 83.33%  >> The top exam performance for this semester is: 100.00%  >> The top avg of exams is for student with ID 3456 & avg was 96% |  |