System Test Plan for DistanceCalculator

The text in bold in the **Description** column represents the test inputs to the program. You can stop program execution by pressing Ctrl+C.

Test ID	Description	Expected Results	Actual Results
testHorizontalDistance Author: Dr. Balik	*Preconditions:* DistanceCalculator program started Distance calculation type (H-Horizontal, V-Vertical): **h** Initial velocity (mi/hr): **50** Initial height (ft): **5** Angle (degrees): **15**	Distance: 99.28 ft Program Exits	Distance: 99.28 ft Program Exits
testVerticalDistance Author: Dr. Balik	*Preconditions:* DistanceCalculator program started Distance calculation type (H-Horizontal, V-Vertical): **V** Initial height (ft): **5.3** Rebound fraction: **.64**	Distance: 24.14 ft Program Exits	Distance: 24.14 ft Program Exits

Anthony Du

testInvalidTypeWholeWord Author: Dr. Balik	*Preconditions:* DistanceCalculator program started Distance calculation type (H-Horizontal, V-Vertical): **horizontal**	Invalid type Program Exits	Invalid type Program Exits
testHorizontalDistanceInvalidVelocityNotNearBoundary Author: Dr. Balik	*Preconditions:* DistanceCalculator program started Distance calculation type (H-Horizontal, V-Vertical): **H** Initial velocity (mi/hr): **-2**	Invalid velocity Program Exits	Invalid velocity Program Exits
testHorizontalDistanceValidInvalidHeightNearBoundary Author: Dr. Balik	*Preconditions:* DistanceCalculator program started Distance calculation type (H-Horizontal, V-Vertical): **H** Initial velocity (mi/hr): **0** Initial height (ft): **-1**	Invalid height Program Exits	Invalid height Program Exits
testHorizontalDistanceInvalidAngleNearUpperBoundary Author: Dr. Balik	*Preconditions:* DistanceCalculator program started Distance calculation type (H-Horizontal, V-Vertical): **h** Initial velocity (mi/hr): **23.55** Initial height (ft): **2.5** Angle (degrees): **91**	Invalid angle Program Exits	Invalid angle Program Exits

Anthony Du

testVerticalDistanceInvalidHeightNotNearBoundary Author: Dr. Balik	*Preconditions:* DistanceCalculator program started Distance calculation type (H-Horizontal, V-Vertical): v Initial height (ft): **-4**	Invalid height Program Exits	Invalid height Program Exits
testVerticalDistanceInvalidFractionOnLowerBoundary Author: Dr. Balik	*Preconditions:* DistanceCalculator program started Distance calculation type (H-Horizontal, V-Vertical): **V** Initial height (ft): **6.73** Rebound fraction: **0**	Invalid fraction Program Exits	Invalid fraction Program Exits
testHorizontalDistanceInvalidVelocityNearBoundary Author: Mrs.Glatz	*Preconditions:* DistanceCalculator program started Distance calculation type (H-Horizontal, V-Vertical): **H** Initial velocity (mi/hr): **-0.1**	Invalid velocity Program Exits	Invalid velocity Program Exits
testHorizontalDistanceInvalidAngleNearLowerBoundary Author: Mrs. Glatz	*Preconditions:* DistanceCalculator program started Distance calculation type (H-Horizontal, V-Vertical): **h** Initial velocity (mi/hr): **10** Initial height (ft): **2** Angle (degrees): **-0.1**	Invalid angle Program Exits	Invalid angle Program Exits

Anthony Du

testVerticalHeightValidOnBoundary Author: Mrs. Glatz	*Preconditions:* DistanceCalculator program started Distance calculation type (H-Horizontal, V-Vertical): **V** Initial height (ft): **0** Rebound fraction: **0.5**	Distance: 0.00 ft Program Exits	Distance: 0.00 ft Program Exits
testVerticalFractionValidNearLowerBoundary Author: Mrs. Glatz	*Preconditions:* DistanceCalculator program started Distance calculation type (H-Horizontal, V-Vertical): **v** Initial height (ft): **1** Rebound fraction: **0.1**	Distance: 1.22 ft Program Exits	Distance: 1.22 ft Program Exits
testVerticalDistanceInvalidHeightNearBoundary Author: Anthony Du	*Preconditions:* DistanceCalculator program started Distance calculation type (H-Horizontal, V-Vertical): **V** Initial height (ft): **-1**	Invalid height Program Exits	Invalid height Program Exits
testVerticalDistanceInvalidFractionOnUpperBoundary Author:	*Preconditions:* DistanceCalculator program started Distance calculation type (H-Horizontal, V-Vertical): **v**	Invalid fraction Program Exits	Invalid fraction Program Exits

Anthony Du

	Initial height (ft): **1** Rebound fraction: **1**		
testVerticalFractionValidNearUpperBoundary Author: Anthony Du	*Preconditions:* DistanceCalculator program started Distance calculation type (H-Horizontal, V-Vertical): **v** Initial height (ft): **1** Rebound fraction: **0.9**	Distance: 19.00 ft Program Exits	Distance: 19.00 ft Program Exits
testHorizontalDistanceVelocityValidOnBoundary Author: Anthony Du	*Preconditions:* DistanceCalculator program started Distance calculation type (H-Horizontal, V-Vertical): **h** Initial velocity (mi/hr): **0** Initial height (ft): **10** Angle (degrees): **10**	Distance: 0.00 ft Program Exits	Distance: 0.00 ft Program Exits
testHorizontalDistanceHeightValidOnBoundary Author: Anthony Du	*Preconditions:* DistanceCalculator program started Distance calculation type (H-Horizontal, V-Vertical): **h** Initial velocity (mi/hr): **10** Initial height (ft): **0** Angle (degrees): **10**	Distance: 2.29 ft Program Exits	Distance: 2.29 ft Program Exits

Anthony Du

testHorizontalDistanceAngleValidOnLowerBoundary Author: Anthony Du	*Preconditions:* DistanceCalculator program started Distance calculation type (H-Horizontal, V-Vertical): h Initial velocity (mi/hr): 10 Initial height (ft): 10 Angle (degrees): 0	Distance: 11.56 ft Program Exits	Distance: 11.56 ft Program Exits
testHorizontalDistanceAngleValidOnUpperBoundary Author: Anthony Du	*Preconditions:* DistanceCalculator program started Distance calculation type (H-Horizontal, V-Vertical): h Initial velocity (mi/hr): 10 Initial height (ft): 10 Angle (degrees): 90	Distance: 0.00 ft Program Exits	Distance: 0.00 ft Program Exits
testHorizontalDistanceInvalidHeightNotNearBoundary Author: Anthony Du	*Preconditions:* DistanceCalculator program started Distance calculation type (H-Horizontal, V-Vertical): h Initial velocity (mi/hr): 10 Initial height (ft): -10	Invalid height Program Exits	Invalid height Program Exits

Anthony Du

testInvalidTypeSingle Letter Author: Anthony Du	*Preconditions:* DistanceCalculator program started Distance calculation type (H-Horizontal, V-Vertical): z	Invalid type Program Exits	Invalid type Program Exits
testInvalidTypeSingle Digit Author: Anthony Du	*Preconditions:* DistanceCalculator program started Distance calculation type (H-Horizontal, V-Vertical): 0	Invalid type Program Exits	Invalid type Program Exits

Anthony Du