Defs and Uses for the Nodes

Node	*Def*	*Use*
1	{grades}	/
2	{hasInvalid, passCount, i}	/
4	{grade}	{grades}
6	{hasInvalid}	/
8	{passCount}	{passCount}
9	{i}	{i}

Uses for the Edges

Edge	*Use*
(3, 4)	{i, grades}
(5, 6)	{grade}
(5, 7)	{grade}
(7, 8)	{grade}
(7, 9)	{grade}
(3, 10)	{i, grades}
(11, 12)	{hasInvalid}
(11, 13)	{hasInvalid}
(13, 14)	{passCount, grades}
(13, 15)	{passCount, grades}
(15, 16)	{passCount}
(15, 17)	{passCount}

Du-pairs for all variables

Variable	*Du-pairs*
grades	[1, 4] [1, (3, 4)] [1, (3, 10)] [1, (13, 14)] [1, (13, 15)]
hasInvalid	[2, (11, 12)] [2, (11, 13)] [6, (11, 12)] [6, (11, 13)]
passCount	[2, 8] [2, (13, 14)] [2, (13, 15)] [2, (15, 16)]

	[2, (15, 17)] [8, 8] [8, (13, 14)] [8, (13, 15)] [8, (15, 16)] [8, (15, 17)]
i	[2, 9] [2, (3, 4)] [2, (3, 10)] [9, 9] [9, (3, 4)] [9, (3, 10)]
grade	[4, (5, 6)] [4, (5, 7)] [4, (7, 8)] [4, (7, 9)]

Du-paths for all variables

Variable	***Du-path***
grades	[1, 2, 3, 4] [1, 2, 3, 10] [1, 2, 3, 10, 11, 13, 14] [1, 2, 3, 10, 11, 13, 15] [1, 2, 3, 4, 5, 6, 9, 3, 10, 11, 13, 14] [1, 2, 3, 4, 5, 6, 9, 3, 10, 11, 13, 15] [1, 2, 3, 4, 5, 7, 8, 9, 3, 10, 11, 13, 14] [1, 2, 3, 4, 5, 7, 8, 9, 3, 10, 11, 13, 15] [1, 2, 3, 4, 5, 7, 9, 3, 10, 11, 13, 14] [1, 2, 3, 4, 5, 7, 9, 3, 10, 11, 13, 15]
hasInvalid	[2, 3, 10, 11, 12] [2, 3, 10, 11, 13] [2, 3, 4, 5, 6, 9, 3, 10, 11, 12] [2, 3, 4, 5, 6, 9, 3, 10, 11, 13] [2, 3, 4, 5, 7, 8, 9, 3, 10, 11, 12] [2, 3, 4, 5, 7, 8, 9, 3, 10, 11, 13] [2, 3, 4, 5, 7, 9, 3, 10, 11, 12] [2, 3, 4, 5, 7, 9, 3, 10, 11, 13] [6, 9, 3, 10, 11, 12] [6, 9, 3, 10, 11, 13]
passCount	[2, 3, 4, 5, 7, 8] [2, 3, 10, 11, 13, 14] [2, 3, 10, 11, 13, 15]

	[2, 3, 4, 5, 6, 9, 3, 10, 11, 13, 14] [2, 3, 4, 5, 6, 9, 3, 10, 11, 13, 15] [2, 3, 4, 5, 7, 8, 9, 3, 10, 11, 13, 14] [2, 3, 4, 5, 7, 8, 9, 3, 10, 11, 13, 15] [2, 3, 4, 5, 7, 9, 3, 10, 11, 13, 14] [2, 3, 4, 5, 7, 9, 3, 10, 11, 13, 15] [2, 3, 4, 5, 6, 9, 3, 10, 11, 13, 15, 16] [2, 3, 4, 5, 7, 8, 9, 3, 10, 11, 13, 15, 16] [2, 3, 4, 5, 7, 9, 3, 10, 11, 13, 15, 16] [2, 3, 4, 5, 6, 9, 3, 10, 11, 13, 15, 17] [2, 3, 4, 5, 7, 8, 9, 3, 10, 11, 13, 15, 17] [2, 3, 4, 5, 7, 9, 3, 10, 11, 13, 15, 17]
i	[2, 3, 4, 5, 6, 9] [2, 3, 4, 5, 7, 9] [2, 3, 4, 5, 7, 8, 9] [9, 3, 4] [9, 3, 10]
grade	[4, 5, 6] [4, 5, 7] [4, 5, 7, 8] [4, 5, 7, 9]

Test paths

1: [1, 2, 3, 10, 11, 13, 15, 16]

2: [1, 2, 3, 4, 5, 6, 9, 3, 10, 11, 12]

3: [1, 2, 3, 4, 5, 7, 9, 3, 10, 11, 13, 15, 16]

4: [1, 2, 3, 4, 5, 7, 8, 9, 3, 10, 11, 13, 14]

5: [1, 2, 3, 4, 5, 7, 8, 9, 3, 4, 5, 7, 9, 3, 10, 11, 13, 15, 17]