

Test Case Verification

Test 1

	Equations	Solved Values
Eq.1:	$6V + 3W + 4X + 1Y + 4Z = 12$	$V = 6.94221$
Eq.2:	$8V + -9W + 3X + -2Y + 2Z = -20$	$W = 3.95800$
Eq.3:	$4V + 5W + 3X + -1Y + 6Z = 4$	$X = -9.47102$
Eq.4:	$8V + 1W + 9X + 7Y + -3Z = 7$	$Y = 3.87241$
Eq.5:	$-7V + 4W + -3X + 2Y + 5Z = -6$	$Z = -1.87889$

```
6 3 4 1 4 12
8 -9 3 -2 2 -20
4 5 3 -1 6 4
8 1 9 7 -3 7
-7 4 -3 2 5 -6
```

```
[kirtan2605@wlan209031 cpp_code_files]$ g++ main.cpp -lm
[kirtan2605@wlan209031 cpp_code_files]$ ./a.out 5
```

Kutta Condition Not Satisfied

Solution to the System of Equations is

```
Variable : a = 6.94221
Variable : b = 3.958
Variable : c = -9.47102
Variable : d = 3.87241
Variable : e = -1.87889
```

Test 2

$$1x + 2y + 1z + 5t = -1$$

$$0x + 2y + 1z + 3t = 2$$

$$4x + 1y + -3z + -2t = -1$$

$$3x + 2y + 0z + 4t = 1$$

$$x = 3$$

$$y = 2$$

$$z = 7$$

$$t = -3$$

```
1 2 1 5 -1
0 2 1 3 2
4 1 -3 -2 -1
3 2 0 4 1
```

```
[kirtan2605@wlan209031 cpp_code_files]$ g++ main.cpp -lm
[kirtan2605@wlan209031 cpp_code_files]$ ./a.out 4
```

Kutta Condition Satisfies

Solution to the System of Equations is

Variable : a = 3

Variable : b = 2

Variable : c = 7

Variable : d = -3

Test 3

$$2x + 1y + 5z + 3t = 17$$

$$5x + 4y + 2z + 0t = 11$$

$$0x + -2y + 3z + 7t = -3$$

$$-3x + 0y + 1z + 5t = 3$$

$$x = -2$$

$$y = 3$$

$$z = 4.5$$

$$t = -1.5$$

```
2 1 5 3 17
5 4 2 0 11
0 -2 3 7 -3
-3 0 1 5 3
```

```
[kirtan2605@wlan209031 cpp_code_files]$ g++ main.cpp -lm
[kirtan2605@wlan209031 cpp_code_files]$ ./a.out 4
```

Kutta Condition Not Satisfied

Solution to the System of Equations is

Variable : a = -2

Variable : b = 3

Variable : c = 4.5

Variable : d = -1.5

Test 4

precision= 0.001 (default)

$$2x + 2y + 1z + 5t = 2.5$$

$$0x + 2y + 1z + 3t = 2.56$$

$$4x + 1y + -3z + -2t = 0.28$$

$$3x + 2y + 0z + 4t = 2.43$$

$$x = -151/100$$

$$y = 13/25$$

$$z = -73/25$$

$$t = 37/25$$

```
2 2 1 5 2.5
0 2 1 3 2.56
4 1 -3 -2 0.28
3 2 0 4 2.43
```

```
[kirtan2605@wlan209031 cpp_code_files]$ g++ main.cpp -lm
[kirtan2605@wlan209031 cpp_code_files]$ ./a.out 4
```

Kutta Condition Not Satisfied

Solution to the System of Equations is

Variable : a = -1.51

Variable : b = 0.520001

Variable : c = -2.92

Variable : d = 1.48

Test 5

precision= 0.1 (modified)

$$2x + 2y + 1z + 5t = 2.5$$

$$0x + 2y + 1z + 3t = 2.56$$

$$4x + 1y + -3z + -2t = 0.28$$

$$3x + 2y + 0z + 4t = 2.43$$

$$x = -151/100$$

$$y = 13/25$$

$$z = -73/25$$

$$t = 37/25$$

```
2 2 1 5 2.5
0 2 1 3 2.56
4 1 -3 -2 0.28
3 2 0 4 2.43
```

```
[kirtan2605@wlan209031 cpp_code_files]$ g++ main.cpp -lm
[kirtan2605@wlan209031 cpp_code_files]$ ./a.out 4
```

Kutta Condition Satisfies

Solution to the System of Equations is

Variable : a = -1.51

Variable : b = 0.520001

Variable : c = -2.92

Variable : d = 1.48