**data** equality;

input rep $ block $ height spp;

cards;

1 1 47 2.2

1 2 54 2.3

1 3 54 1.5

1 4 46 2

2 1 51 2

2 2 50 2

2 3 52 2.2

2 4 52 2

3 1 51 2.3

3 2 51 2.2

3 3 53 2.3

3 4 47 1.9

4 1 51 2.3

4 2 48 2.2

4 3 47 2.3

4 4 51 1.9

5 1 51 2.2

5 2 47 2.2

5 3 53 2

5 4 54 1.9

6 1 48 2.1

6 2 45 2.3

6 3 48 1.8

6 4 42 1.8

7 1 60 2.5

7 2 55 2

7 3 47 2.4

7 4 54 2.4

8 1 48 2.2

8 2 55 2.1

8 3 55 2.2

8 4 54 2.4

9 1 49 2.3

9 2 48 2.1

9 3 51 2

9 4 47 2.1

;

**proc** **anova**;

class block;

model height = block;

means block /lsd snk;

**proc** **anova**;

class block;

model spp = block;

means block /lsd snk;

**Result**

**Dependent variable : height**

The ANOVA Procedure

| **Class Level Information** |
| --- |
| **Class** | **Levels** | **Values** |
| **block** | 4 | 1 2 3 4 |

|  |  |
| --- | --- |
| **Number of Observations Read** | 36 |
| **Number of Observations Used** | 36 |

The ANOVA Procedure

Dependent Variable: height

| **Source** | **DF** | **Sum of Squares** | **Mean Square** | **F Value** | **Pr > F** |
| --- | --- | --- | --- | --- | --- |
| **Model** | 3 | 10.0000000 | 3.3333333 | 0.24 | 0.8702 |
| **Error** | 32 | 450.8888889 | 14.0902778 |   |   |
| **Corrected Total** | 35 | 460.8888889 |   |   |   |

| **R-Square** | **Coeff Var** | **Root MSE** | **height Mean** |
| --- | --- | --- | --- |
| 0.021697 | 7.441259 | 3.753702 | 50.44444 |

| **Source** | **DF** | **Anova SS** | **Mean Square** | **F Value** | **Pr > F** |
| --- | --- | --- | --- | --- | --- |
| **block** | 3 | 10.00000000 | 3.33333333 | 0.24 | 0.8702 |

The ANOVA Procedure

t Tests (LSD) for height

|  |  |
| --- | --- |
| Note: | This test controls the Type I comparisonwise error rate, not the experimentwise error rate. |

|  |  |
| --- | --- |
| **Alpha** | 0.05 |
| **Error Degrees of Freedom** | 32 |
| **Error Mean Square** | 14.09028 |
| **Critical Value of t** | 2.03693 |
| **Least Significant Difference** | 3.6044 |

| **Means with the same letterare not significantly different.** |
| --- |
| **t Grouping** | **Mean** | **N** | **block** |
| A | 51.111 | 9 | 3 |
| A |   |   |   |
| A | 50.667 | 9 | 1 |
| A |   |   |   |
| A | 50.333 | 9 | 2 |
| A |   |   |   |
| A | 49.667 | 9 | 4 |

**Dependent variable : spp**

The ANOVA Procedure

| **Class Level Information** |
| --- |
| **Class** | **Levels** | **Values** |
| **block** | 4 | 1 2 3 4 |

|  |  |
| --- | --- |
| **Number of Observations Read** | 36 |
| **Number of Observations Used** | 36 |

The ANOVA Procedure

Dependent Variable: spp

| **Source** | **DF** | **Sum of Squares** | **Mean Square** | **F Value** | **Pr > F** |
| --- | --- | --- | --- | --- | --- |
| **Model** | 3 | 0.19222222 | 0.06407407 | 1.58 | 0.2141 |
| **Error** | 32 | 1.30000000 | 0.04062500 |   |   |
| **Corrected Total** | 35 | 1.49222222 |   |   |   |

| **R-Square** | **Coeff Var** | **Root MSE** | **spp Mean** |
| --- | --- | --- | --- |
| 0.128816 | 9.472627 | 0.201556 | 2.127778 |

| **Source** | **DF** | **Anova SS** | **Mean Square** | **F Value** | **Pr > F** |
| --- | --- | --- | --- | --- | --- |
| **block** | 3 | 0.19222222 | 0.06407407 | 1.58 | 0.2141 |

The ANOVA Procedure

t Tests (LSD) for spp

|  |  |
| --- | --- |
| Note: | This test controls the Type I comparisonwise error rate, not the experimentwise error rate. |

|  |  |
| --- | --- |
| **Alpha** | 0.05 |
| **Error Degrees of Freedom** | 32 |
| **Error Mean Square** | 0.040625 |
| **Critical Value of t** | 2.03693 |
| **Least Significant Difference** | 0.1935 |

| **Means with the same letterare not significantly different.** |
| --- |
| **t Grouping** | **Mean** | **N** | **block** |
| A | 2.23333 | 9 | 1 |
| A |   |   |   |
| A | 2.15556 | 9 | 2 |
| A |   |   |   |
| A | 2.07778 | 9 | 3 |
| A |   |   |   |
| A | 2.04444 | 9 | 4 |