|  |  |  |
| --- | --- | --- |
| **Parameter** | **Value** | **Input in simulator** |
| Topology Type | 2D Mesh | topology = mesh; n = 2 |
| Network Size | 2x2 - 15x15 | k |
| Traffic Pattern | Uniform, Tornado | traffic = tornado or uniform |
| Routing Algorithm | XY | routing\_function = dim\_order |
| Virtual Channel | 2, 3, 4, 5 | num\_vcs |
| Buffer Size | 6, 8 | buf\_size |
| Packet Size | 20 flits | packet\_size |
| Sample Period | 100000 cycles | sample\_period |
| PIR | 0.001, 0.0015, ..., 0.009 | injection\_rate |

Start

|

|--> Load data from 'cleaned\_data.xlsx'

|

|--> Check data types

|

|--> Define categorical features and apply one-hot encoding

|

|--> Transform the data

|

|--> Split data into training and testing sets

| based on 'remainder\_\_k'

|

|--> Define feature matrix (X) and target vector (y)

|

|--> Initialize and train the Linear Regression model

|

|--> Make predictions

|

|--> Combine actual values and predicted values

| for plotting purposes

|

|--> Save the combined data to 'predictions\_vs\_actuals.xlsx'

|

|--> Plot actual vs predicted values

|

|--> Calculate and print error statistics

|

|--> Plot the error distribution

|

End