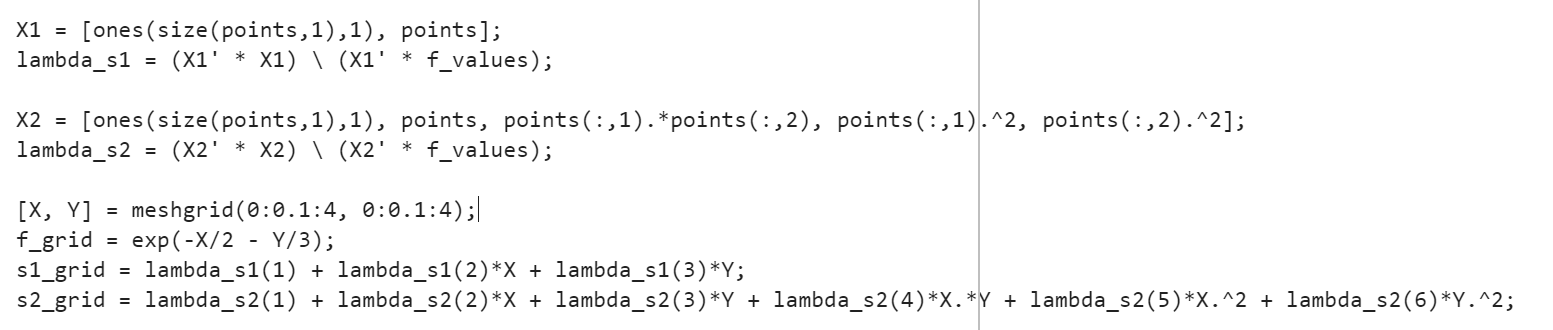
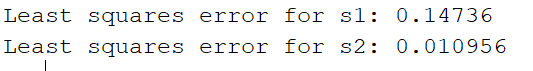
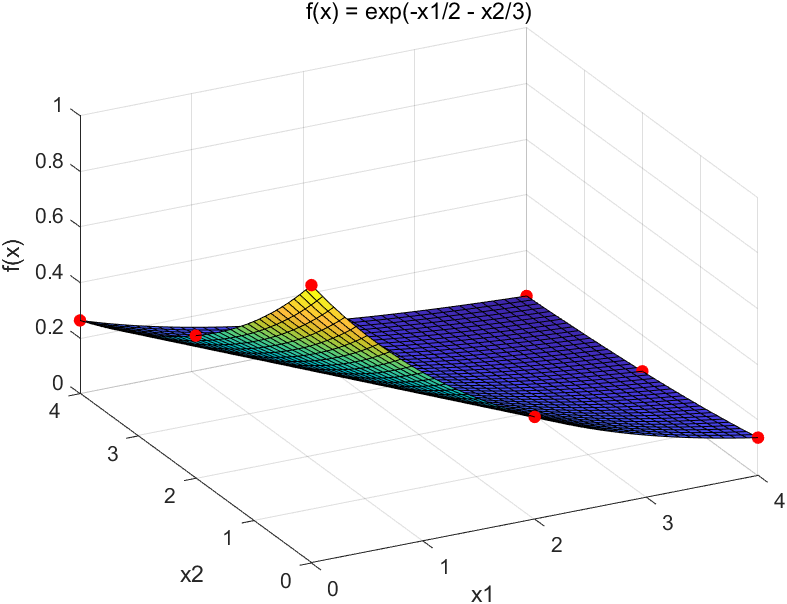
**Problem1：**

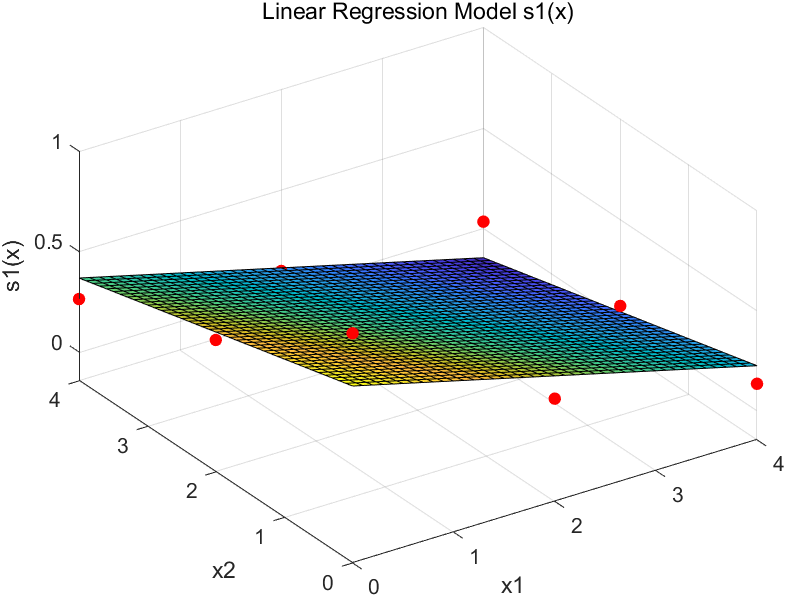
**Main Code:**

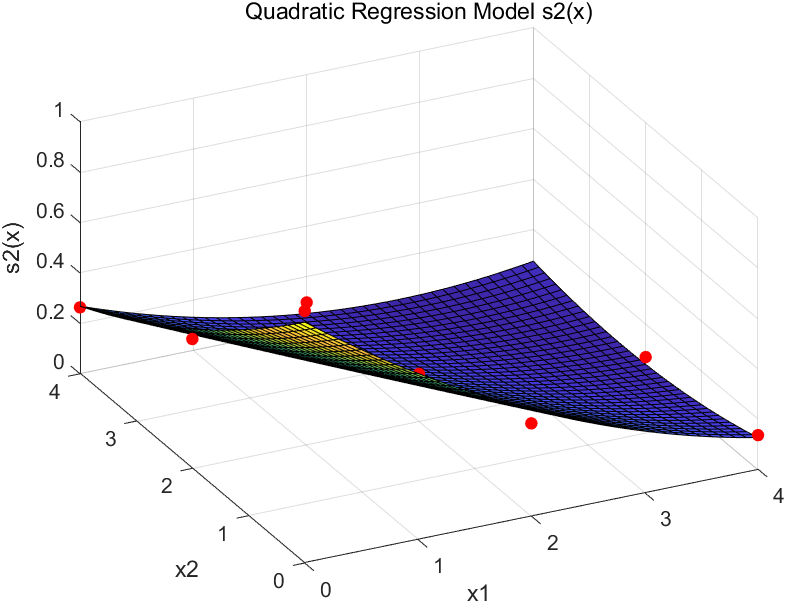


**Results:**



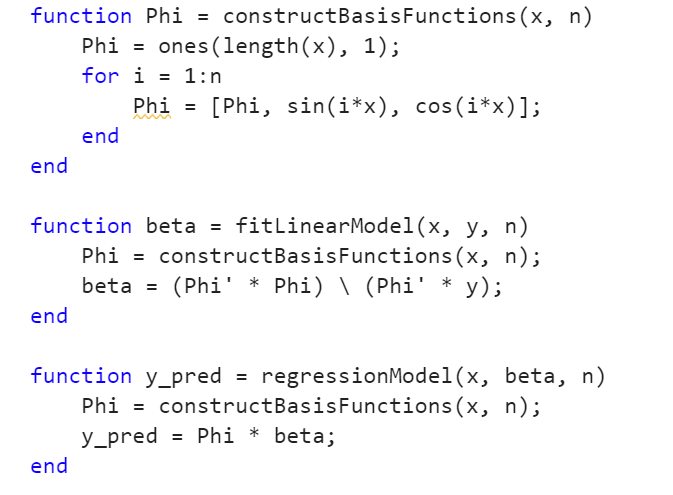




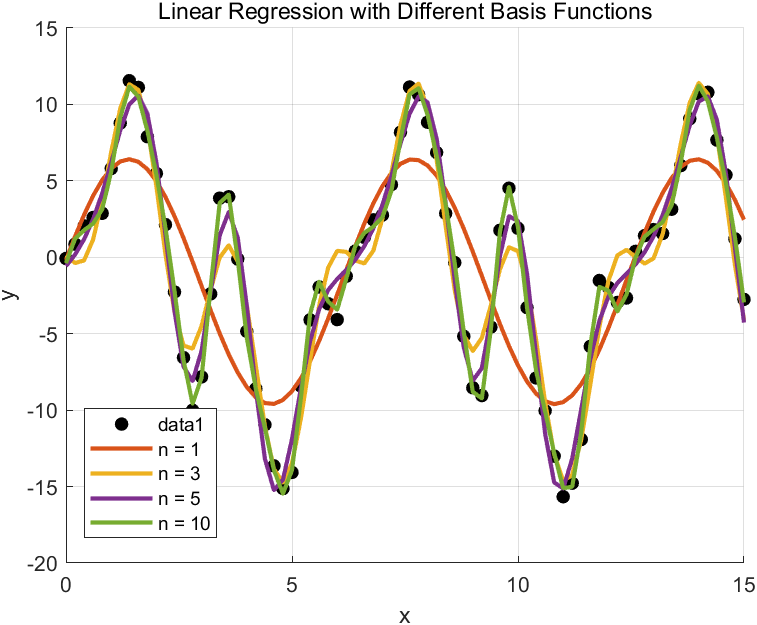


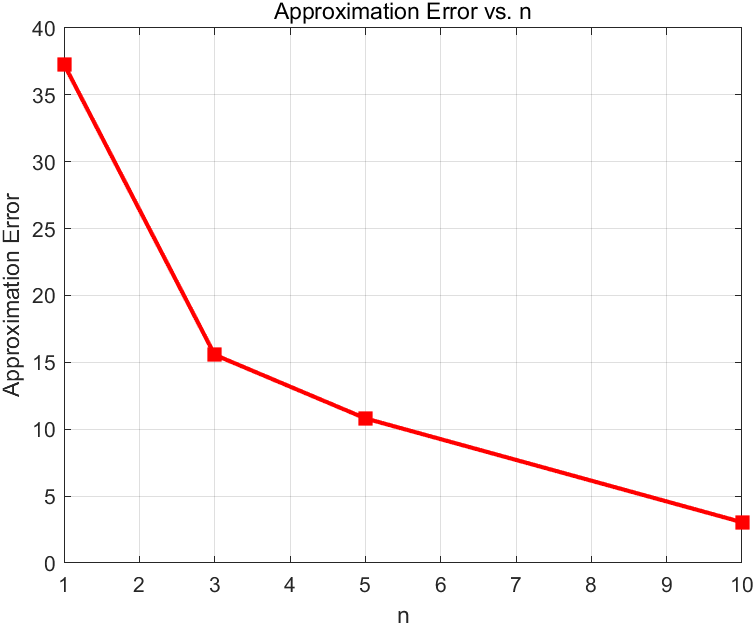
**Problem2:**

**Main Code:**



**Results:**

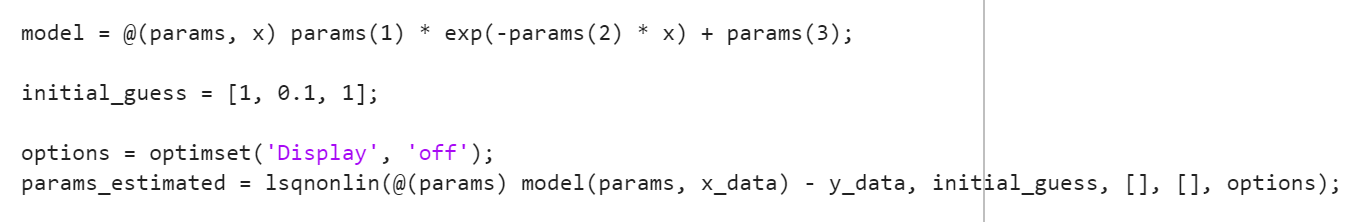




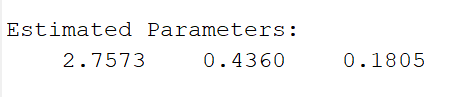
Since the error does not decrease significantly beyond n=7, making this the smallest value of n that ensures sufficient accuracy for the regression model.

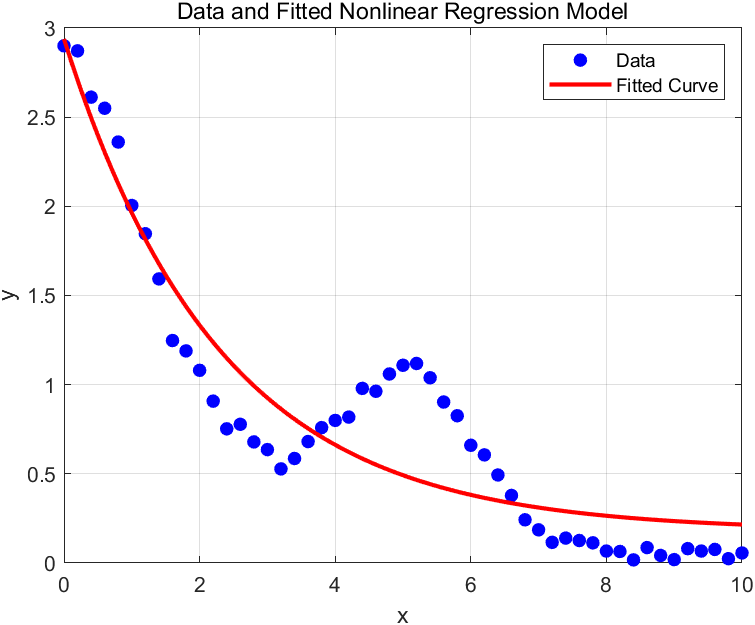
**Problem3:**

**Main Code:**



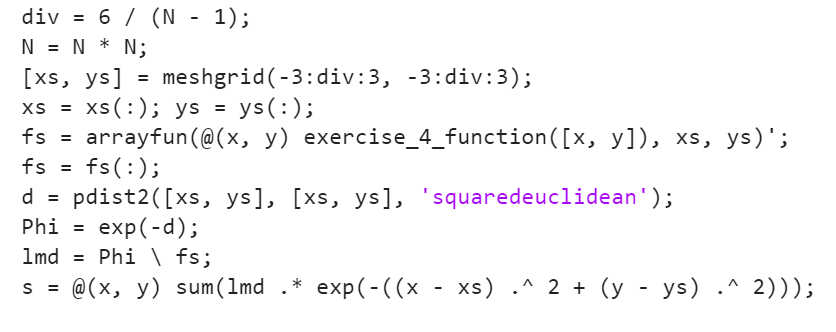
**Result:**



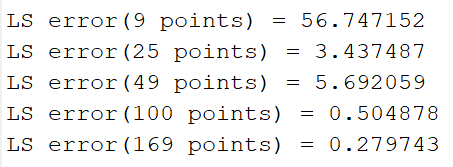
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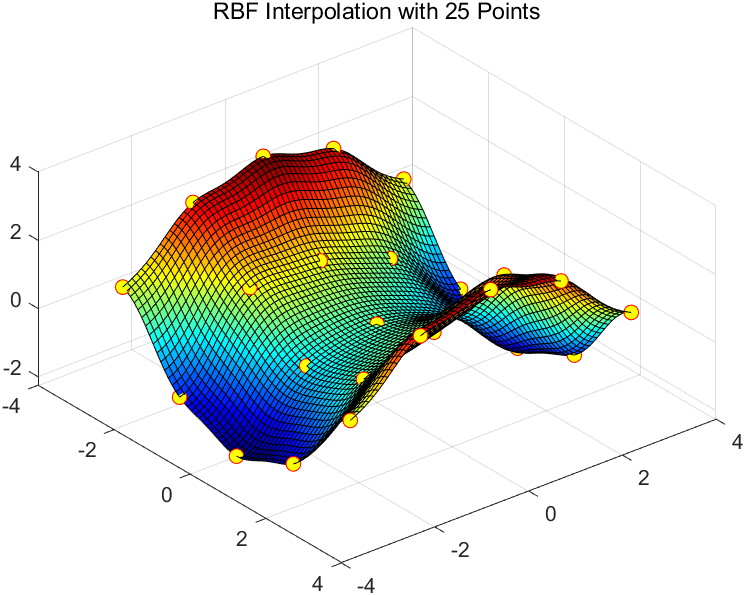
**Problem4:**

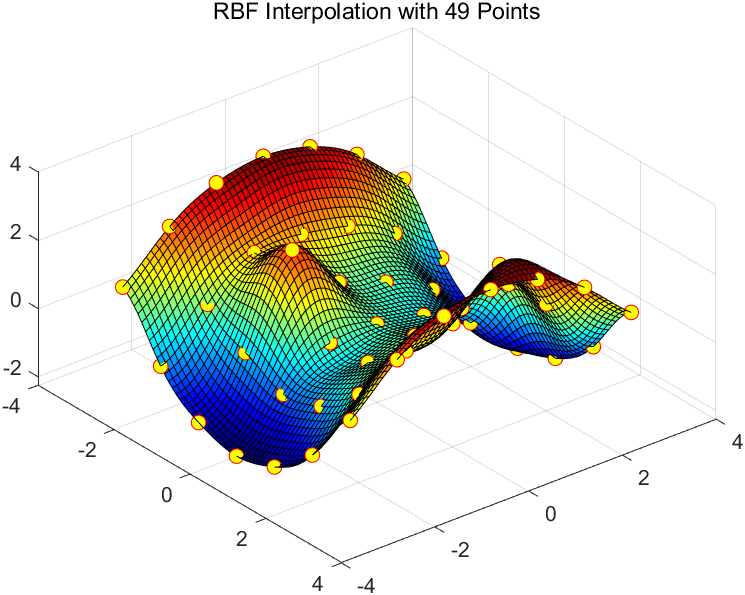
**Main Code:**

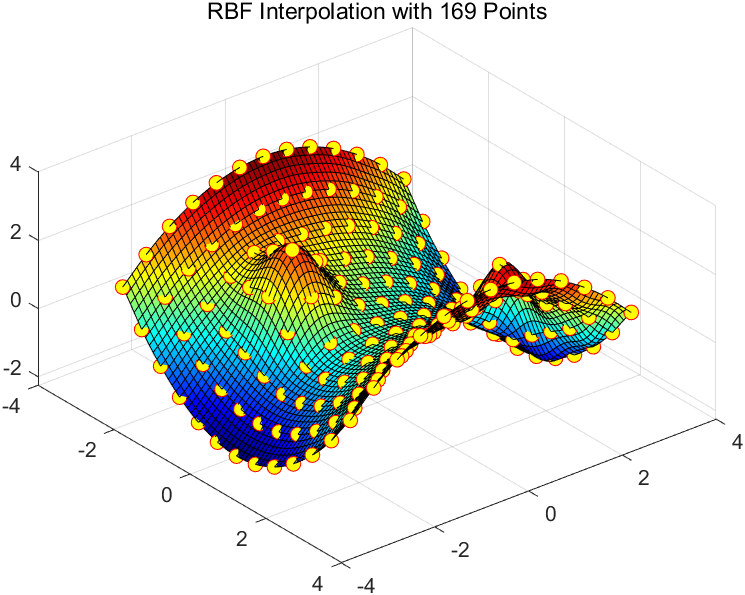


**Result:**



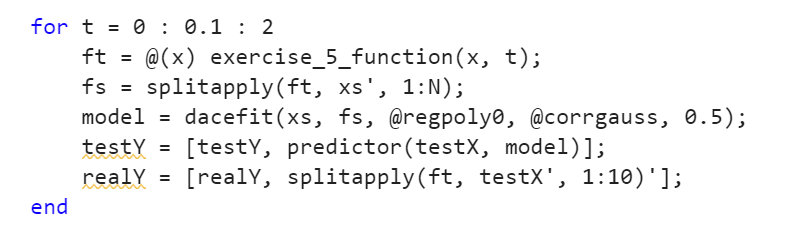
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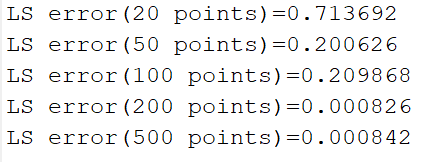
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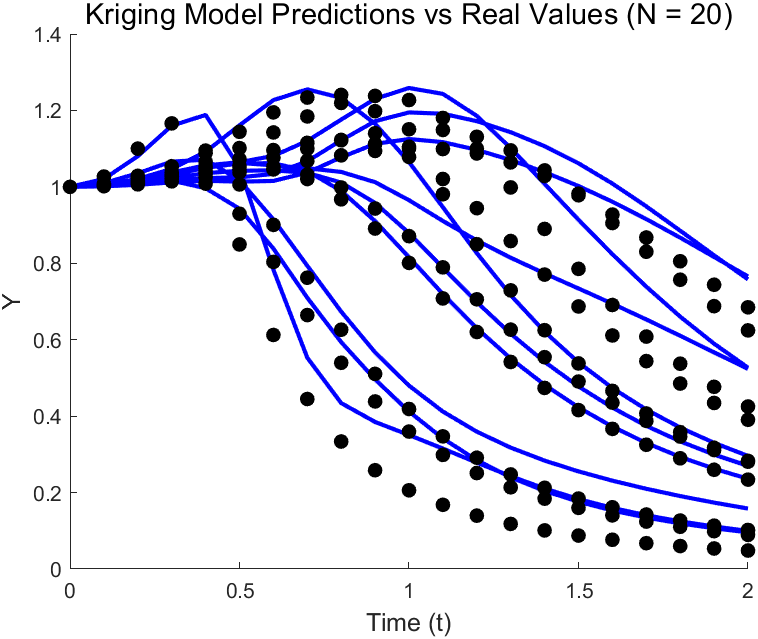
**Problem5:**

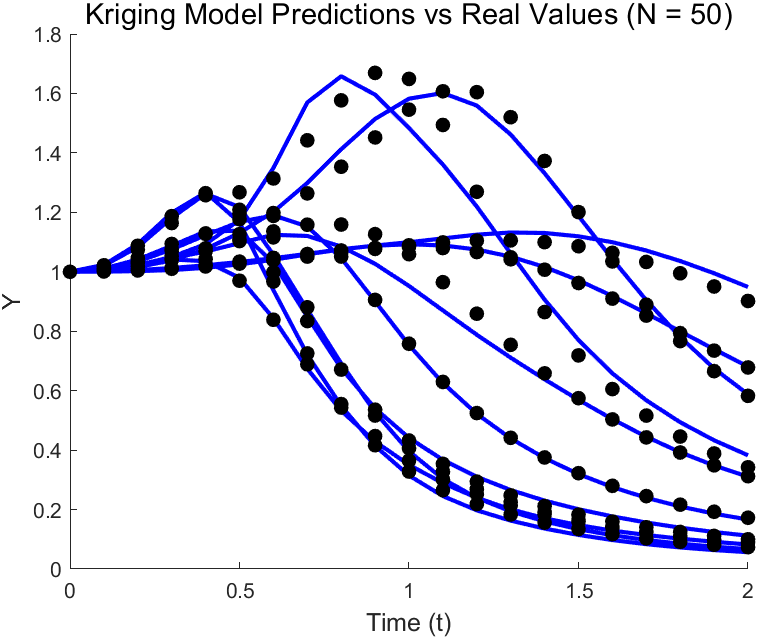
**Main Code:**

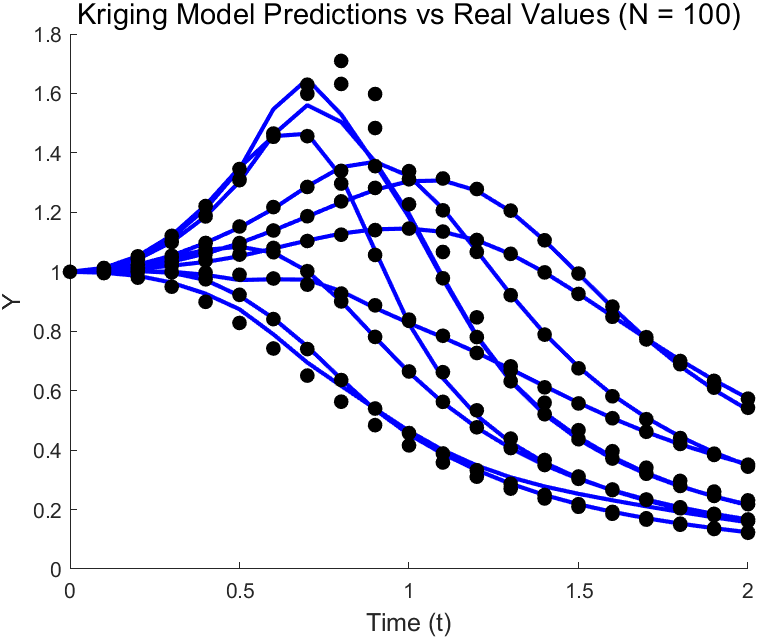


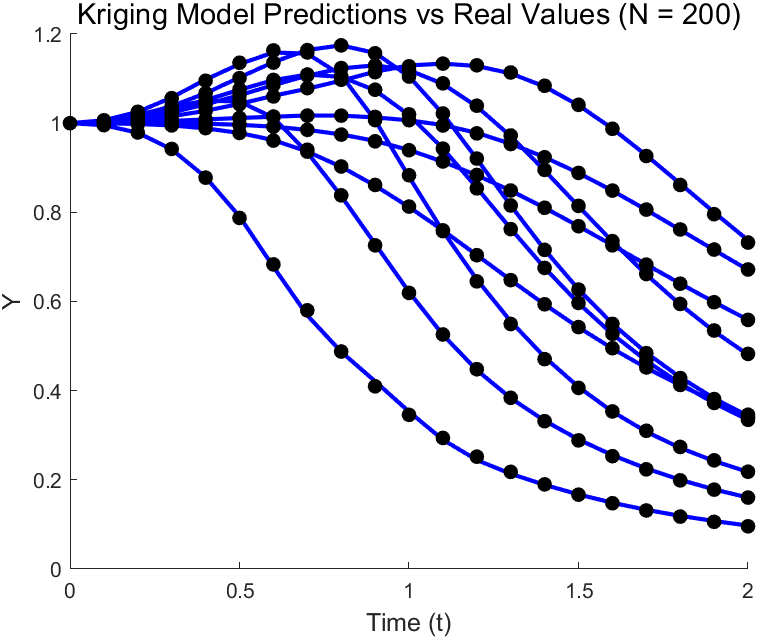
**Result:**

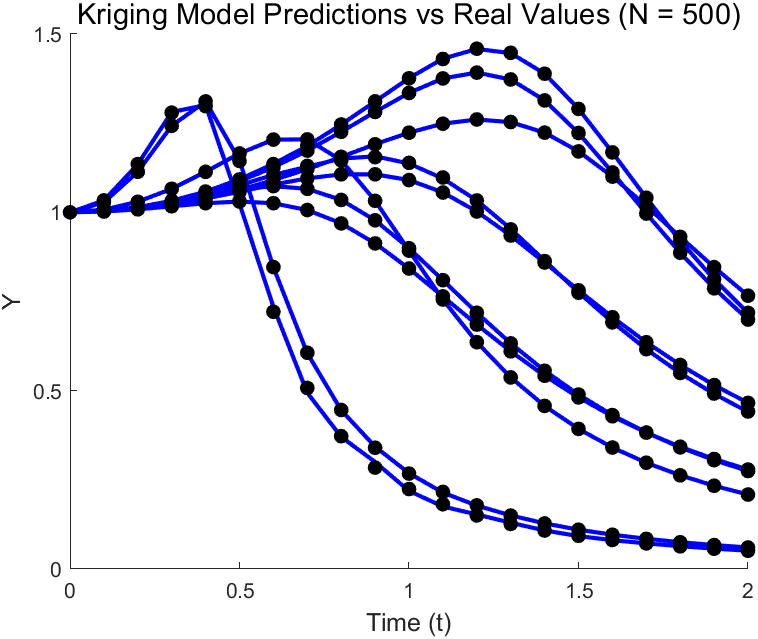


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