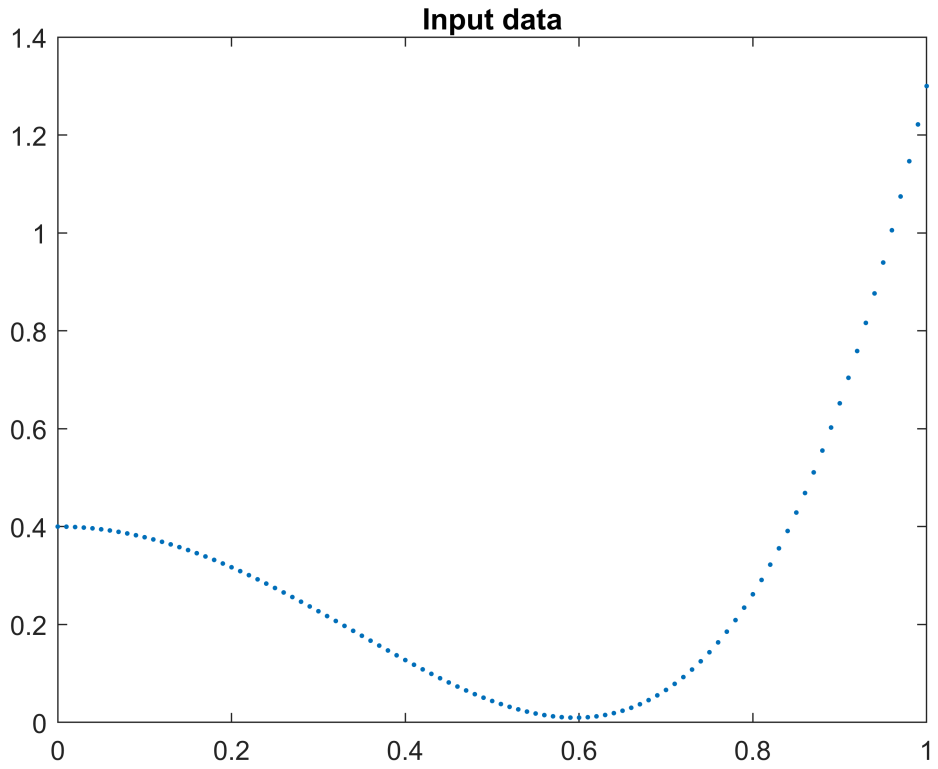
Чтение и подготовка исходных данных

```
load data_file;
x = x';
y = y';
```

Отображение исходных данных на графике

```
figure
plot(x, y, '.');
title('Input data');
```



Построение полинома 6-й степени

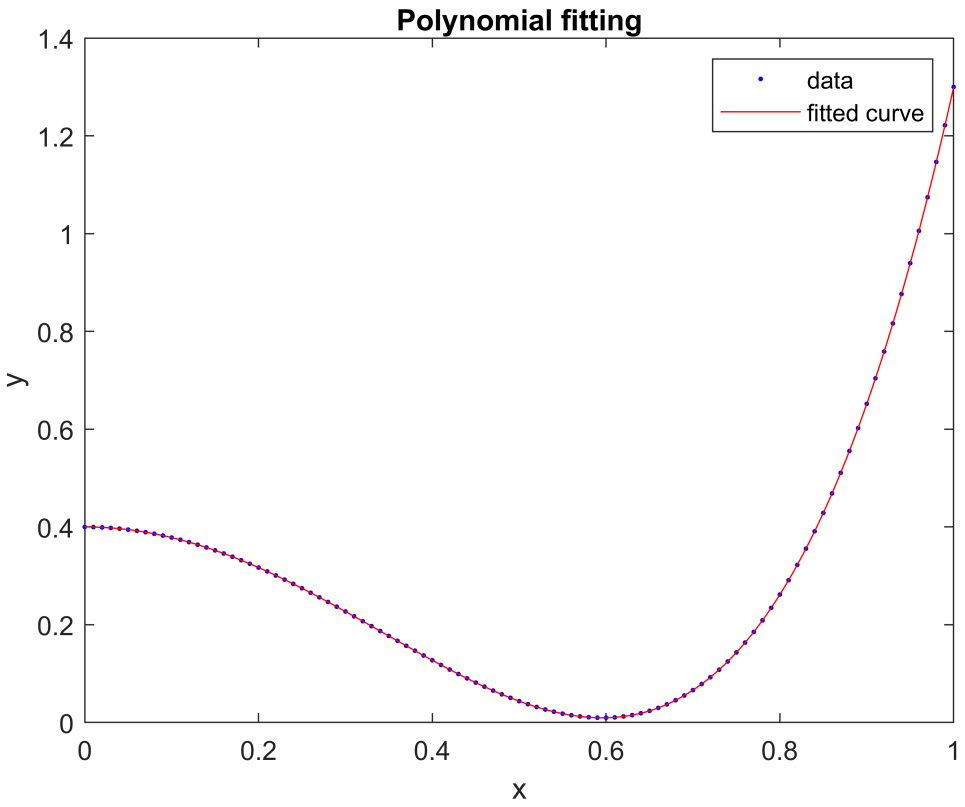
```
% built-in sixth degree polynomial
%[population, gof] = fit(x, y, 'poly6');

% custom model (polynomial)
model = 'p_6 * x^6 + p_5 * x^5 + p_4 * x^4 + p_3 * x^3 + p_2 * x^2 + p_1 * x + p_0';
[population, gof] = fit(x, y, model);
```

```
Warning: Start point not provided, choosing random start point.
```

Отображение полинома 6-й степени на графике

```
figure
plot(population, x, y);
title('Polynomial fitting');
```



Коэффициенты построенного полинома

```
disp(population);
```

```
General model:
population(x) = p_6 * x^6 + p_5 * x^5 + p_4 * x^4 + p_3 * x^3 + p_2 * x^2
              + p_1 * x + p_0
Coefficients (with 95% confidence bounds):
  p_0 =         0.4  (0.4, 0.4)
  p_1 =   -2.72e-07  (-8.232e-07, 2.792e-07)
  p_2 =        -2.2  (-2.2, -2.2)
  p_3 =  -2.537e-05  (-4.392e-05, -6.813e-06)
  p_4 =         3.1  (3.1, 3.1)
  p_5 =  -6.106e-05  (-9.054e-05, -3.158e-05)
  p_6 =   2.299e-05  (1.32e-05, 3.278e-05)
```