Problem Statement: *In a given data set, Finding the Best camera based on their Cost, Maximum Resolution, Normal Focus Range, Macro Focus, Weight, Dimensions and Price Using Pandas Library*

```
import pandas as pd

data = pd.read_csv('/content/camera_dataset.csv')

data
```

	Model	Release date	Max resolution	Low resolution	Effective pixels	Zoom wide (W)	Zoom tele (T)	Normal focus range	Macro focus range	Storage included	Weight (inc. batteries)	Dimensions	Price
0	Agfa ePhoto 1280	1997	1024.0	640.0	0.0	38	114.0	70	40	4.0	420	95.0	179.0
1	Agfa ePhoto 1680	1998	1280.0	640.0	1.0	38	114.0	50	0	4.0	420	158.0	179.0
2	Agfa ePhoto CL18	2000	640.0	0.0	0.0	45	45.0	0	0	2.0	0	0.0	179.0
3	Agfa ePhoto CL30	1999	1152.0	640.0	0.0	35	35.0	0	0	4.0	0	0.0	269.0
4	Agfa ePhoto CL30 Clik!	1999	1152.0	640.0	0.0	43	43.0	50	0	40.0	300	128.0	1299.0
...	...	...	...	...	...	...	...	...	...	...	...	...	...
1033	Toshiba PDR-M65	2001	2048.0	1024.0	3.0	38	114.0	10	10	8.0	320	120.0	62.0
1034	Toshiba PDR-M70	2000	2048.0	1024.0	3.0	35	105.0	80	9	16.0	390	116.0	62.0
1035	Toshiba PDR-M71	2001	2048.0	1024.0	3.0	35	98.0	80	10	8.0	340	107.0	62.0
1036	Toshiba PDR-M81	2001	2400.0	1200.0	3.0	35	98.0	80	10	16.0	340	107.0	62.0

```
data.head(10)
```

	Model	Release date	Max resolution	Low resolution	Effective pixels	Zoom wide (W)	Zoom tele (T)	Normal focus range	Macro focus range	Storage included	Weight (inc. batteries)	Dimensions	Price
0	Agfa ePhoto 1280	1997	1024.0	640.0	0.0	38	114.0	70	40	4.0	420	95.0	179.0
1	Agfa ePhoto 1680	1998	1280.0	640.0	1.0	38	114.0	50	0	4.0	420	158.0	179.0
2	Agfa ePhoto CL18	2000	640.0	0.0	0.0	45	45.0	0	0	2.0	0	0.0	179.0
3	Agfa ePhoto CL30	1999	1152.0	640.0	0.0	35	35.0	0	0	4.0	0	0.0	269.0
4	Agfa ePhoto CL30 Clik!	1999	1152.0	640.0	0.0	43	43.0	50	0	40.0	300	128.0	1299.0
5	Agfa ePhoto CL45	2001	1600.0	640.0	1.0	51	51.0	50	20	8.0	270	119.0	179.0

```
data.tail()
```

	Model	Release date	Max resolution	Low resolution	Effective pixels	Zoom wide (W)	Zoom tele (T)	Normal focus range	Macro focus range	Storage included	Weight (inc. batteries)	Dimensions	Price
1033	Toshiba PDR-M65	2001	2048.0	1024.0	3.0	38.0	114.0	10.0	10.0	8.0	320.0	120.0	62.0
1034	Toshiba PDR-M70	2000	2048.0	1024.0	3.0	35.0	105.0	80.0	9.0	16.0	390.0	116.0	62.0
1035	Toshiba PDR-M71	2001	2048.0	1024.0	3.0	35.0	98.0	80.0	10.0	8.0	340.0	107.0	62.0
1036	Toshiba PDR-	2001	2400.0	1200.0	3.0	35.0	98.0	80.0	10.0	16.0	340.0	107.0	62.0

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Finding the Best camera based on their Cost

```
data.columns
```

```
Index(['Model', 'Release date', 'Max resolution', 'Low resolution',
       'Effective pixels', 'Zoom wide (W)', 'Zoom tele (T)',
       'Normal focus range', 'Macro focus range', 'Storage included',
       'Weight (inc. batteries)', 'Dimensions', 'Price'],
      dtype='object')
```

```
data.dtypes
```

	0
Model	object
Release date	int64
Max resolution	float64
Low resolution	float64
Effective pixels	float64
Zoom wide (W)	float64
Zoom tele (T)	float64
Normal focus range	float64
Macro focus range	float64
Storage included	float64
Weight (inc. batteries)	float64
Dimensions	float64
Price	float64

dtype: object

```
## Finding the Null Values
data.isnull().sum()
```

	0
Model	0
Release date	0
Max resolution	0
Low resolution	0
Effective pixels	0
Zoom wide (W)	0
Zoom tele (T)	0
Normal focus range	0
Macro focus range	1
Storage included	2
Weight (inc. batteries)	2
Dimensions	2
Price	0

dtype: int64

```
## Finding the Duplicated Values
data.duplicated().sum()
```

```
0
```

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Finding the Maximum cost and Minimum cost of a camera and Name of that 3 cameras using Pandas

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```
data['Price'].max()
```

```
7999.0
```

```
# Filter the cameras that have a price of 7999
Max_Camera_cost = data[data['Price'] == 7999]

# Display the model names of cameras with the price of 7999
print("Cameras with a cost of 7999:")
print(Max_Camera_cost[['Model', 'Price']])
```

```
Cameras with a cost of 7999:
                        Model   Price
52           Canon EOS-1Ds  7999.0
53   Canon EOS-1Ds Mark II  7999.0
54  Canon EOS-1Ds Mark III  7999.0
```

Start coding or generate with AI.

```
min_cost = data['Price'].min()


# Filter the cameras that have a price of Minimum Cost
Min_Camera_cost = data[data['Price'] == min_cost]

# Display the model names of cameras with the price of Minimum Cost
print("Cameras with a cost of Min-Cost:")
print(Min_Camera_cost[['Model', 'Price']])
```

```
Cameras with a cost of Min-Cost:
             Model  Price
347  JVC GC-QX3HD   14.0
348  JVC GC-QX5HD   14.0
```

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Finding the Best Resolution Camera and that camera Name with their cost

```
## Filtering the cameras having the Best Resolution
data['Max resolution'].isnull().sum()
```

```
0
```

```
cam_max_re = data['Max resolution'].max()
```

```
cam_resolution = data[data['Max resolution'] == cam_max_re]

## Now displaying the Names of Cameras with their cost
print("Cameras with the Best Resolution:")
print(cam_resolution[['Model','Max resolution' ,'Price']])
```

```
Cameras with the Best Resolution:
                        Model  Max resolution   Price
    54  Canon EOS-1Ds Mark III          5616.0  7999.0
```

Start coding or generate with AI.

Finding the Effective pixels and that camera Name with their cost

```
data['Effective pixels'].isnull().sum()
```

```
0
```

```
max_eff_pix = data['Effective pixels'].max()
```

```
## Finding the Best Effective Pixels
eff_pix = data[data['Effective pixels'] == max_eff_pix]

## Now displaying the Names of Cameras with their cost
print("Cameras with the Best Effective Pixels:")
print(eff_pix[['Model','Effective pixels' ,'Price']])
```

```
Cameras with the Best Effective Pixels:
                        Model  Effective pixels   Price
    54  Canon EOS-1Ds Mark III              21.0  7999.0
```

Start coding or generate with AI.

Finding the Best Dimension and that camera Name with their cost

```
data['Dimensions'].isnull().sum()
```

```
0
```

```
max_dime = data['Dimensions'].max()
```

```
max_dime
```

```
240.0
```

```
## Finding the best dimensions
dim = data[data['Dimensions'] == max_dime]

## Now displaying the Names of Cameras with their cost
print("Cameras with the Best Dimensions:")
print(dim[['Dimensions','Model' ,'Price']])
```

```
Cameras with the Best Dimensions:
     Dimensions              Model  Price
    304       240.0  HP Photosmart 635  179.0
```

Start coding or generate with AI.

Finding the Max. Zoom Width

```
data['Zoom wide (W)'] = data['Zoom wide (W)'].astype('int8')
```

```
data['Zoom wide (W)'].isnull().sum()
```

```
0
```

```
max_zoom = data['Zoom wide (W)'].max()
```

```
max_zoom
```

```
52
```

```
zoom = data[data['Zoom wide (W)'] == max_zoom]

## Now displaying the Names of Cameras with their cost
print("Cameras with the Best Zoom Width:")
print(zoom[['Zoom wide (W)','Model' ,'Price']])
```

```
Cameras with the Best Zoom Width:
      Zoom wide (W)              Model  Price
477              52  Nikon Coolpix 100  229.0
1025             52    Toshiba PDR-M11   62.0
```

Start coding or generate with AI.

Finding the Normal Focus Range

```
data['Normal focus range'] = data['Normal focus range'].astype('int32')
```

```
data['Normal focus range'].isnull().sum()
```

```
0
```

```
focus_norm_max = data['Normal focus range'].max()
focus_norm_max
```

```
120
```

```
focus = data[data['Normal focus range'] == focus_norm_max]

## Now displaying the Names of Cameras with their cost
print("Cameras with the Best Normal Focus Range:")
print(focus[['Normal focus range','Model' ,'Price']])
```

```
Cameras with the Best Normal Focus Range:
     Normal focus range                Model  Price
842                 120  Samsung Digimax 202  229.0
```

Start coding or generate with AI.

Finding the Macro focus range

```
data['Macro focus range'] = data['Macro focus range'].astype('int')
```

```
data['Macro focus range'].dtypes
```

```
dtype('int64')
```

```
macro_focus_max = data['Macro focus range'].max()
```

```
macro_focus_max
```

```
85
```

```
macro_focus = data[data['Macro focus range'] == macro_focus_max]


## Now Printing the Names of Camera with Best Macro focus range
print("Cameras with the Best Macro Focus Range:")
print(macro_focus[['Macro focus range','Model' ,'Price']])
```

```
Cameras with the Best Macro Focus Range:
     Macro focus range              Model  Price
302                 85  HP Photosmart 435  179.0
350                 85         Kodak C310  129.0
```

Start coding or generate with AI.

Finding the Highest Weight of the Camera including BAttery

```
data['Weight (inc. batteries)'] = data['Weight (inc. batteries)'].astype('int')


data['Weight (inc. batteries)'].isnull().sum()
```

```
0
```

```
max_weight = data['Weight (inc. batteries)'].max()


min_weight = data['Weight (inc. batteries)'].min()


print(max_weight)
```

```
1860
```

```
print(min_weight)
```

```
0
```

```
weight = data[data['Weight (inc. batteries)'] == max_weight]
## Now Printing the Names of Camera with Highest Weight
print("Cameras with the Highest Weight:")
print(weight[['Weight (inc. batteries)','Model' ,'Price']])
```

```
Cameras with the Highest Weight:
     Weight (inc. batteries)         Model  Price
401                     1860  Kodak DCS760  129.0
```

Start coding or generate with AI.

Conclusion

- **Based on our analysis, the following cameras are highly recommended**
- **By Cost**
  - **JVC GC-QX3HD and JVC GC-QX5HD** with Minimum cost of **14.0 dollars**
  - **EOS-1Ds,Canon EOS-1Ds Mark II and Canon EOS-1Ds Mark III** with Maximum cost of **7999 dollars**
- **With Best Resolution**
  - **Canon EOS-1Ds Mark III** with Resolution of **5616 pixels**
- **Effective pixels**
  - **Canon EOS-1Ds Mark III** with Pixel of **21.0**
- **Best Dimension**
  - **HP Photosmart 635** with Cost of **$179.0** and with Dimension of **240**
- **Max. Zoom Width**
  - **Nikon Coolpix 100, Toshiba PDR-M11** with costs of 229.0,**62.0** with Max. Zoom width with **52.0**

- **Normal Focus Range**
  - Name of the Camera is **Samsung Digimax 202** and it's cost is **$229.0** and it's Normal focus range is **120**
- **Macro focus range**
  - Name of the Cameras are **HP Photosmart 435 and Kodak C310** with costs are of $179.0 and$ **129.0** and with Macro Focus range of **85.0**

Finally You can Buy any of the Best Cameras based on the Above lists like Cost, Resolution, and Dimenstion. But I recommand

- **Canon EOS-1Ds Mark III and HP Photosmart (have 2 models, 635 and 435) cameras having Good Cost and of Quality**