	Linear outlier	Polynomial Outlier	Linear without outlier	Polynomial without outlier
ScreenSize	*Goodness of Fit of Model Train Dataset Explained Variance (R^2) : 0.31933165189620694 Mean Squared Error (MSE) : 0.03834475833749644* *Goodness of Fit of Model Test Dataset Explained Variance (R^2) : 0.10179997642308691 Mean Squared Error (MSE) : 0.048913316476672734*	Goodness of Fit of Model Train Dataset Explained Variance (R^2) : 0.3203876561071426 Mean Squared Error (MSE) : 0.03828526941549131 Goodness of Fit of Model Test Dataset Explained Variance (R^2) : 0.09930844678620487 Mean Squared Error (MSE) : 0.04904899781094225	Goodness of Fit of Model Train Dataset Explained Variance (R^2) : 0.26094451094874993 Mean Squared Error (MSE) : 0.0368336400994604 Goodness of Fit of Model Test Dataset Explained Variance (R^2) : 0.4140030805077928 Mean Squared Error (MSE) : 0.03147045940312778	Goodness of Fit of Model Train Dataset Explained Variance (R^2) : 0.2610244304052446 Mean Squared Error (MSE) : 0.036829657009501554 Goodness of Fit of Model Test Dataset Explained Variance (R^2) : 0.4131736150000693 Mean Squared Error (MSE) : 0.03151500513317995
	R^2 and MSE remains relatively same after using polynomial. Significant improvement in MSE and R^2 after removing outliers.			
Rom	Goodness of Fit of Model Train Dataset Explained Variance (R^2) : 0.2610244304052446 Mean Squared Error (MSE) : 0.036829657009501554 Goodness of Fit of Model Test Dataset Explained Variance (R^2) : 0.4131736150000693 Mean Squared Error (MSE) : 0.03151500513317995	Goodness of Fit of Model Train Dataset Explained Variance (R^2) : 0.25901081763666134 Mean Squared Error (MSE) : 0.04281069966960534 Goodness of Fit of Model Test Dataset Explained Variance (R^2) : 0.2736626346070964 Mean Squared Error (MSE) : 0.0355346337732239	Goodness of Fit of Model Train Dataset Explained Variance (R^2) : 0.18393089062698265 Mean Squared Error (MSE) : 0.04182425305417913 Goodness of Fit of Model Test Dataset Explained Variance (R^2) : 0.2364044652802635 Mean Squared Error (MSE) : 0.03654925602971778	Goodness of Fit of Model Train Dataset Explained Variance (R^2) : 0.2662798288174759 Mean Squared Error (MSE) : 0.03760379820536333 Goodness of Fit of Model Test Dataset Explained Variance (R^2) : 0.32589458634093516 Mean Squared Error (MSE) : 0.0322658400089871
	R^2 did not improve after using polynomial. No improvement after removing outliers.			
Ram	Goodness of Fit of Model Train Dataset Explained Variance (R^2) : 0.18521298645868323 Mean Squared Error (MSE) : 0.045403154876042864 Goodness of Fit of Model Test Dataset Explained Variance (R^2) : 0.23498304181337692 Mean Squared Error (MSE) : 0.04367285018541827	Goodness of Fit of Model Train Dataset Explained Variance (R^2) : 0.2779274105636822 Mean Squared Error (MSE) : 0.04023674047949218 Goodness of Fit of Model Test Dataset Explained Variance (R^2) : 0.3533109179776871 Mean Squared Error (MSE) : 0.036917816126131445	Goodness of Fit of Model Train Dataset Explained Variance (R^2) : 0.21040470677943157 Mean Squared Error (MSE) : 0.0391259254719013 Goodness of Fit of Model Test Dataset Explained Variance (R^2) : 0.150172853655415 Mean Squared Error (MSE) : 0.04603390366178158	Goodness of Fit of Model Train Dataset Explained Variance (R^2) : 0.33316721091445045 Mean Squared Error (MSE) : 0.033042813491915145 Goodness of Fit of Model Test Dataset Explained Variance (R^2) : 0.2340539475211404 Mean Squared Error (MSE) : 0.04149018649450959
	R^2 is and MSE improved after using polynomial. No improvement after removing outliers.			
Battery	Goodness of Fit of Model Train Dataset Explained Variance (R^2) : 0.23687455690815495	Goodness of Fit of Model Train Dataset Explained Variance (R^2) : 0.24340716700603815	Goodness of Fit of Model Train Dataset Explained Variance (R^2) : 0.20534475525199025	Goodness of Fit of Model Train Dataset Explained Variance (R^2) : 0.3185099934911013

	Mean Squared Error (MSE) : 0.04475041661658099 Goodness of Fit of Model Test Dataset Explained Variance (R^2) : 0.16199229923355962 Mean Squared Error (MSE) : 0.037820959515904515	Mean Squared Error (MSE) : 0.04436733802036811 Goodness of Fit of Model Test Dataset Explained Variance (R^2) : 0.16583519851199235 Mean Squared Error (MSE) : 0.03764752180417421	Mean Squared Error (MSE) : 0.039504482126895384 Goodness of Fit of Model Test Dataset Explained Variance (R^2) : 0.1723423444557033 Mean Squared Error (MSE) : 0.04430189729459535	Mean Squared Error (MSE) : 0.033878729121489294 Goodness of Fit of Model Test Dataset Explained Variance (R^2) : 0.2843203553364382 Mean Squared Error (MSE) : 0.03830806844028604
	Not much change when using poynomial. R^2 increased significantly when using cleaned polynomial however best MSE is still from linear uncleaned.			
Price	Goodness of Fit of Model Train Dataset Explained Variance (R^2) : 0.1859703602265501 Mean Squared Error (MSE) : 0.04371243346180819 Goodness of Fit of Model Test Dataset Explained Variance (R^2) : 0.22424965181327294 Mean Squared Error (MSE) : 0.050746377582231446	Goodness of Fit of Model Train Dataset Explained Variance (R^2) : 0.25843717920913944 Mean Squared Error (MSE) : 0.03982105058311236 Goodness of Fit of Model Test Dataset Explained Variance (R^2) : 0.29977686622230726 Mean Squared Error (MSE) : 0.045805699760953236	Goodness of Fit of Model Train Dataset Explained Variance (R^2) : 0.30233033574082324 Mean Squared Error (MSE) : 0.03172138346295044 Goodness of Fit of Model Test Dataset Explained Variance (R^2) : 0.34738129210957946 Mean Squared Error (MSE) : 0.03112778089816519	Goodness of Fit of Model Train Dataset Explained Variance (R^2) : 0.3297948023038453 Mean Squared Error (MSE) : 0.03047263936516012 Goodness of Fit of Model Test Dataset Explained Variance (R^2) : 0.3744187353074736 Mean Squared Error (MSE) : 0.029838183162557604
	R^2 and MSE improved after using polynomial. R^2 and MSE improved significantly after removing outliers.			

Polynomial regression, 2 predictor : Price,Ram)	Goodness of Fit of Model Train Dataset Explained Variance (R^2) : 0.3635922059663619 Mean Squared Error (MSE) : 0.029080058056459208 Goodness of Fit of Model Test Dataset Explained Variance (R^2) : 0.28517474218624594 Mean Squared Error (MSE) : 0.03326075945196376
(Linear regression, 2 predictor : Price,Ram)	Goodness of Fit of Model Train Dataset Explained Variance (R^2) : 0.33934698811698616 Mean Squared Error (MSE) : 0.030187920576782275 Goodness of Fit of Model Test Dataset Explained Variance (R^2) : 0.2685715817535982 Mean Squared Error (MSE) : 0.03403330311806424
	MSE did not improve.
(Polynomial regression, 3 predictor : Price,Ram,Battery)	Goodness of Fit of Model Train Dataset Explained Variance (R^2) : 0.33607611135716264 Mean Squared Error (MSE) : 0.03012410055825894 Goodness of Fit of Model Test Dataset Explained Variance (R^2) : 0.38413601835643596 Mean Squared Error (MSE) : 0.029486920372112126
	MSE improved.

(Linear regression, 3 predictor : Price,Ram,Battery)	Goodness of Fit of Model Train Dataset Explained Variance (R^2) : 0.3242127102704859 Mean Squared Error (MSE) : 0.03066237654653304 Goodness of Fit of Model Test Dataset Explained Variance (R^2) : 0.33032901776552326 Mean Squared Error (MSE) : 0.03206314302707604
(Polynomial regression, 4 predictor : Price,Ram,Battery,Scrensize)	Goodness of Fit of Model Train Dataset Explained Variance (R^2) : 0.4291521675331773 Mean Squared Error (MSE) : 0.02635377155704498 Goodness of Fit of Model Test Dataset Explained Variance (R^2) : 0.16377432648079282 Mean Squared Error (MSE) : 0.036859156039343616
	MSE did not improve.
(Linear regression, 4 predictor : Price,Ram,Battery,Scrensize)	Goodness of Fit of Model Train Dataset Explained Variance (R^2) : 0.36385184866691345 Mean Squared Error (MSE) : 0.029368427281613634 Goodness of Fit of Model Test Dataset Explained Variance (R^2) : 0.23498889062371742 Mean Squared Error (MSE) : 0.033720160412755

There are several reasons why the R-squared (R^2) value might decrease after removing outliers from the data:

Reduction in sample size: Outliers are data points that are significantly different from the rest of the data. When outliers are removed from the data, the sample size is reduced, which can lead to a decrease in the R^2 value. This is because with a smaller sample size, the model has less data to work with, and therefore might not be able to capture the variability in the dependent variable as well as before.

Non-linear relationships: Outliers can sometimes represent non-linear relationships in the data. When these outliers are removed, the model might lose some of its ability to capture the non-linear relationships, leading to a decrease in the R^2 value.

Influence on regression line: Outliers can have a strong influence on the regression line. When outliers are removed, the regression line might change significantly, which can lead to a decrease in the R^2 value.

Other outliers: Outliers can sometimes be indicative of other outliers in the data. When one outlier is removed, it might reveal other outliers that were previously hidden, leading to a decrease in the R^2 value.

In summary, the R^2 value might decrease after removing outliers due to a reduction in sample size, loss of ability to capture non-linear relationships, influence on the regression line, or revealing other outliers in the data. However, it's important to carefully evaluate the reasons for the decrease and consider the impact of outliers on the model's performance.