

PUBG Weapon

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```
library(tidyverse)
```

```
## -- Attaching packages ----- tidyverse 1.3.1 --
```

```
## v ggplot2 3.3.5    v purrr  0.3.4
## v tibble  3.1.8    v dplyr  1.0.7
## v tidyr   1.1.3    v stringr 1.4.0
## v readr   2.0.1    v forcats 0.5.1
```

```
## Warning: package 'tibble' was built under R version 4.1.2
```

```
## -- Conflicts ----- tidyverse_conflicts() --
## x dplyr::filter() masks stats::filter()
## x dplyr::lag()     masks stats::lag()
```

```
library(dplyr)
library(ggplot2)
```

Loading the dataset to r

```
PUBG <- read.csv("PUBGweapon.csv")
```

Checking the overview of the dataset

```
str(PUBG)
```

```
## 'data.frame':   44 obs. of  20 variables:
## $ Weapon.Name      : chr  "Groza" "AKM" "M762" "MK47 Mutant" ...
## $ Weapon.Type       : chr  "Assault Rifle" "Assault Rifle" "Assault Rifle" "Assault Rifle" ...
## $ Bullet.Type       : num  7.62 7.62 7.62 7.62 5.56 5.56 5.56 5.56 5.56 5.56 ...
## $ Damage            : int   49 49 47 49 43 43 43 43 43 43 ...
## $ Magazine.Capacity : int   30 30 30 30 30 30 30 30 30 30 ...
## $ Range             : int  400 400 400 500 600 600 600 600 600 600 ...
## $ Bullet.Speed       : int  715 710 715 715 880 880 890 900 880 880 ...
## $ Rate.of.Fire       : num   0.08 0.01 0.086 0.01 0.086 0.096 0.086 0.01 0.086 0.096 ...
## $ Shots.to.Kill..Chest.: int    4 4 4 4 4 4 4 4 4 4 ...
## $ Shots.to.Kill..Head. : int    2 2 2 2 2 2 2 2 2 2 ...
## $ Damage.Per.Second   : num  612 490 547 490 502 448 502 430 502 466 ...
## $ Fire.Mode           : chr  "Single, Automatic, Burst" "Single, Automatic" "Single, Automatic, Bu
## $ BDMG_0              : num   47 47 46 49 41 41 41 43 41 41 ...
## $ BDMG_1              : num  34.3 34.3 32.9 34.3 30.1 30.1 30.1 30.1 30.1 30.1 ...
## $ BDMG_2              : num  29.4 29.4 28.2 29.4 25.8 25.8 25.8 25.8 25.8 25.8 ...
## $ BDMG_3              : num   22 22 21.1 22 19.3 19.3 19.3 19.3 19.3 19.3 ...
```

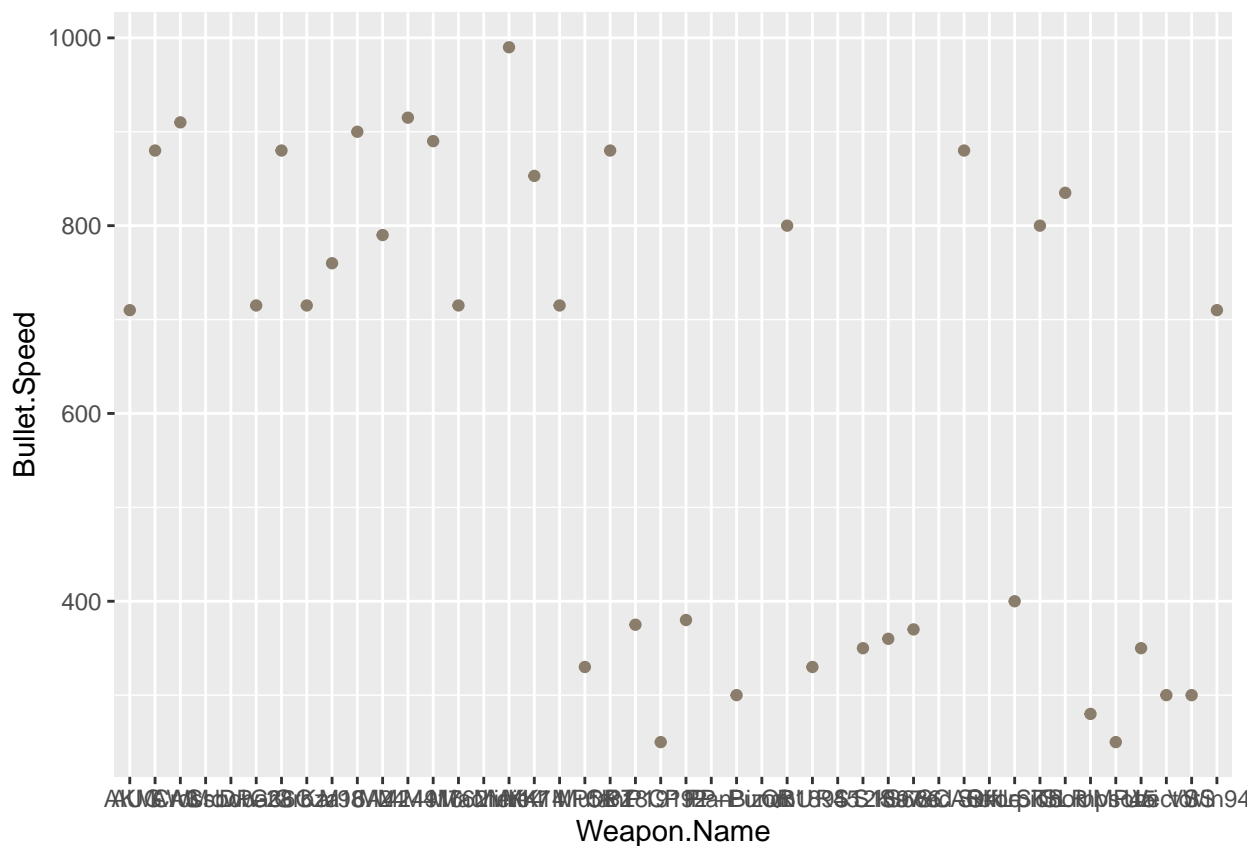
```
## $ HDMG_0           : num  115 115 110 115 101 ...
## $ HDMG_1           : num  80.6 80.6 77.3 80.6 70.7 70.7 70.7 70.7 70.7 70.7 ...
## $ HDMG_2           : num  69 69 66.2 69 60.6 60.6 60.6 60.6 60.6 60.6 ...
## $ HDMG_3           : num  51.8 51.8 49.7 51.8 45.4 45.4 45.4 45.4 45.4 45.4 ...
```

The dataset has 20 variables and 44 observations.

Scatterplot of bullet speed of each weapon

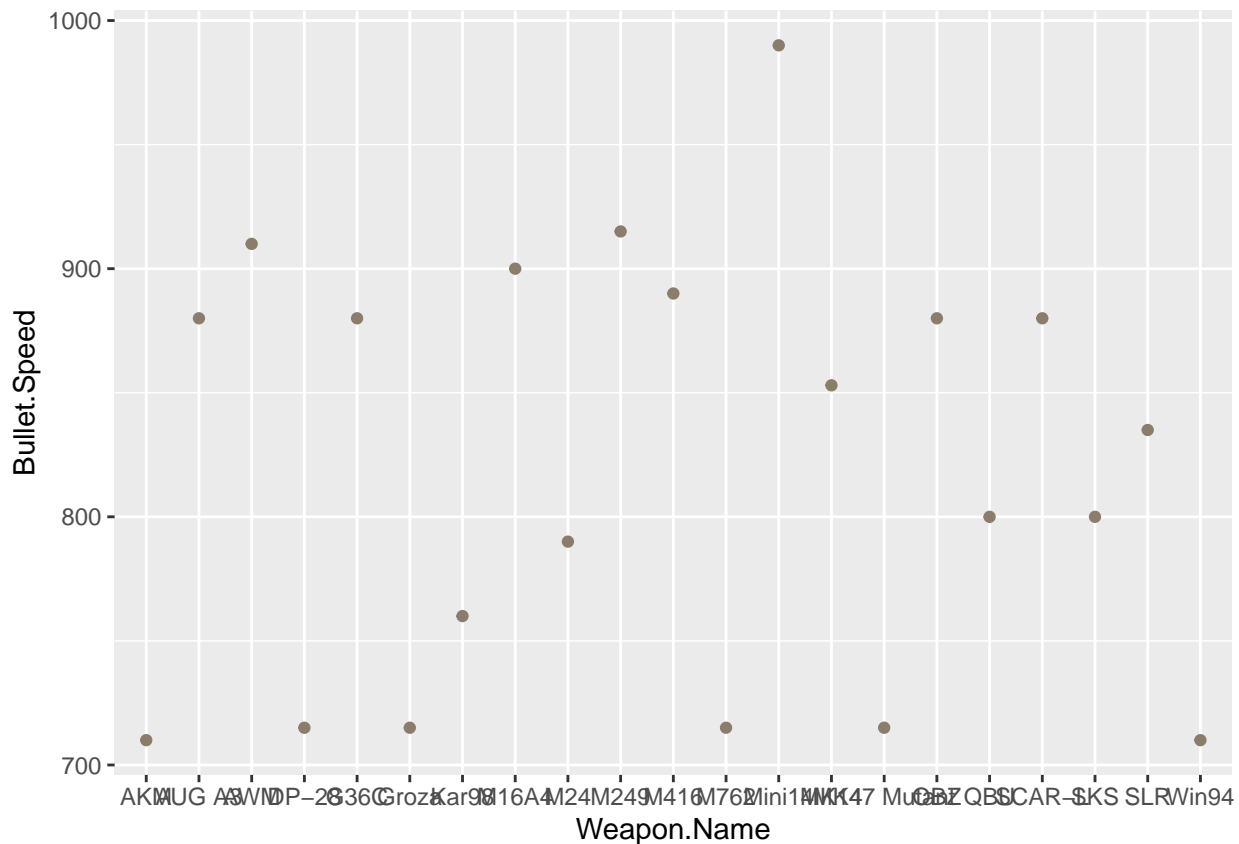
```
ggplot(PUBG, aes(x = Weapon.Name, y = Bullet.Speed, color = x)) +
  geom_point(colour = "bisque4")
```

```
## Warning: Removed 8 rows containing missing values (geom_point).
```



```
## $ Range          : int 400 400 400 500 600 600 600 600 600 600 ...
## $ Bullet.Speed    : int 715 710 715 715 880 880 890 900 880 880 ...
## $ Rate.of.Fire    : num 0.08 0.01 0.086 0.01 0.086 0.096 0.086 0.01 0.086 0.096 ...
## $ Shots.to.Kill..Chest.: int 4 4 4 4 4 4 4 4 4 4 ...
## $ Shots.to.Kill..Head. : int 2 2 2 2 2 2 2 2 2 2 ...
## $ Damage.Per.Second : num 612 490 547 490 502 448 502 430 502 466 ...
## $ Fire.Mode        : chr "Single, Automatic, Burst" "Single, Automatic" "Single, Automatic, Bu
## $ BDMG_0           : num 47 47 46 49 41 41 41 43 41 41 ...
## $ BDMG_1           : num 34.3 34.3 32.9 34.3 30.1 30.1 30.1 30.1 30.1 30.1 ...
## $ BDMG_2           : num 29.4 29.4 28.2 29.4 25.8 25.8 25.8 25.8 25.8 25.8 ...
## $ BDMG_3           : num 22 22 21.1 22 19.3 19.3 19.3 19.3 19.3 19.3 ...
## $ HDMG_0           : num 115 115 110 115 101 ...
## $ HDMG_1           : num 80.6 80.6 77.3 80.6 70.7 70.7 70.7 70.7 70.7 70.7 ...
## $ HDMG_2           : num 69 69 66.2 69 60.6 60.6 60.6 60.6 60.6 60.6 ...
## $ HDMG_3           : num 51.8 51.8 49.7 51.8 45.4 45.4 45.4 45.4 45.4 45.4 ...
```

```
ggplot(Best_BS, aes(x = Weapon.Name, y = Bullet.Speed)) +
  geom_point(colour = "bisque4")
```



Checking on correlation and coefficients between Range and Damage possible of the 21 weapons.

```
lm_dmgrng <- lm(Damage ~ Range, data = Best_BS)
lm_dmgrng
```

```
##
## Call:
```

```
## lm(formula = Damage ~ Range, data = Best_BS)
##
## Coefficients:
## (Intercept)      Range
##      15.49217      0.06103
```

```
summary(lm_dmgrng)
```

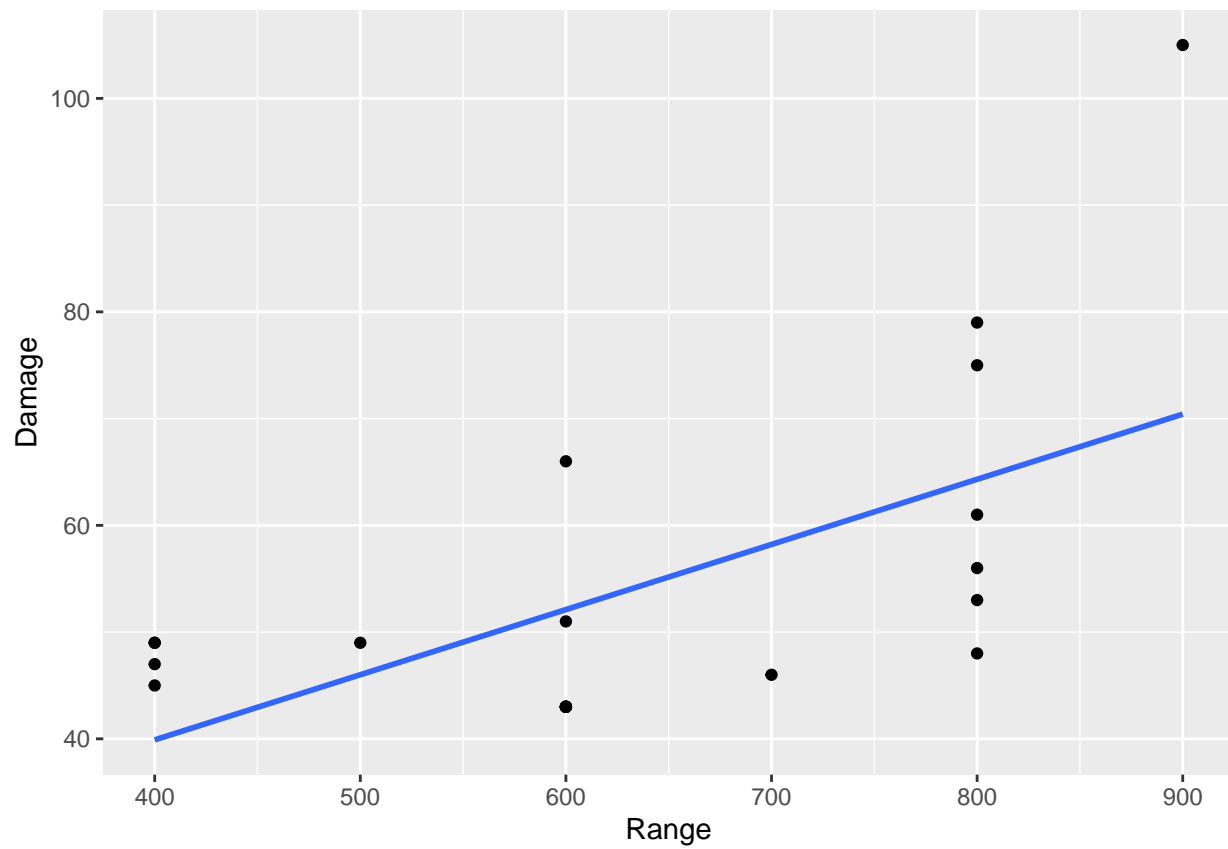
```
##
## Call:
## lm(formula = Damage ~ Range, data = Best_BS)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -16.314  -9.109  -3.314   9.097  34.583
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  15.49217    11.91133     1.301  0.20894
## Range         0.06103     0.01829     3.337  0.00346 **
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 12.76 on 19 degrees of freedom
## Multiple R-squared:  0.3696, Adjusted R-squared:  0.3364
## F-statistic: 11.14 on 1 and 19 DF,  p-value: 0.003462
```

```
cor(Best_BS$Damage, Best_BS$Range)
```

```
## [1] 0.6079112
```

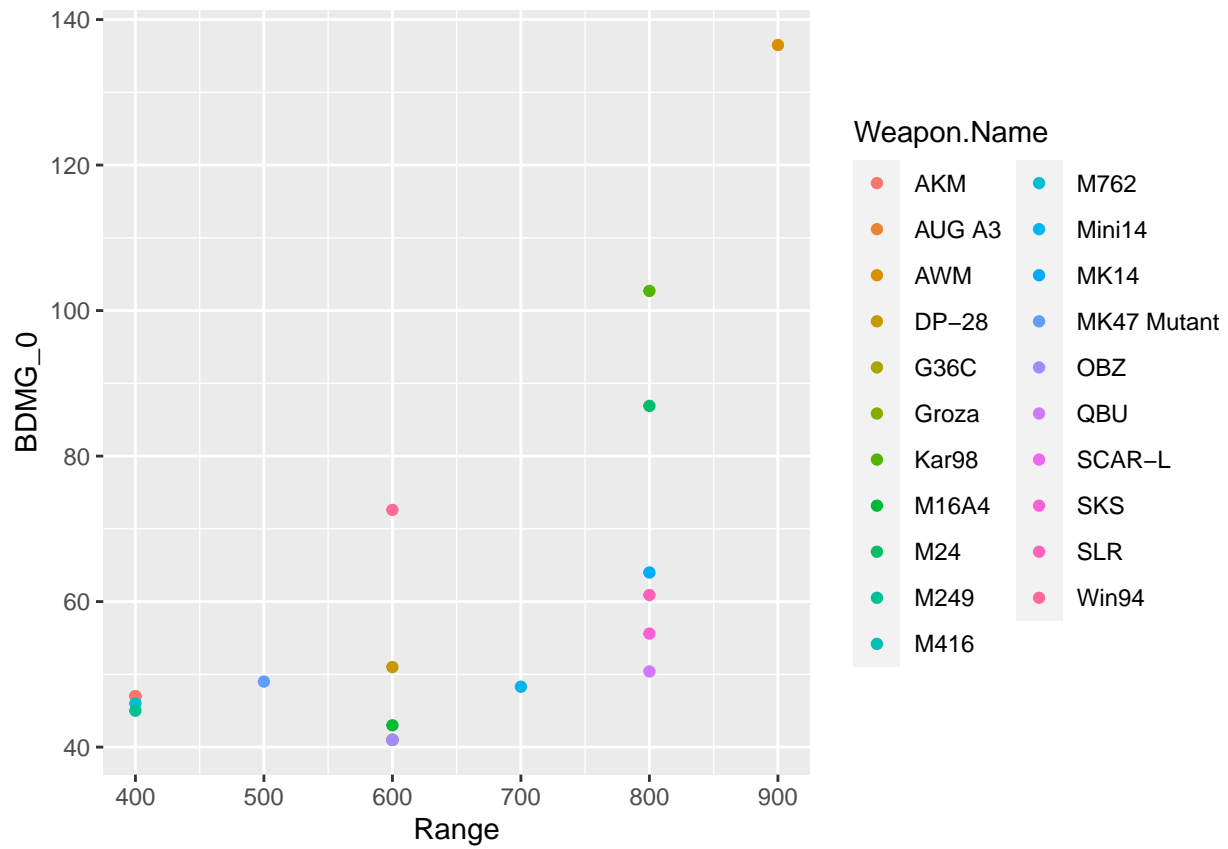
```
Best_BS%>%
  ggplot(aes(x=Range, y=Damage)) +
  geom_point() +
  geom_smooth(method = "lm", se = FALSE)
```

```
## 'geom_smooth()' using formula 'y ~ x'
```

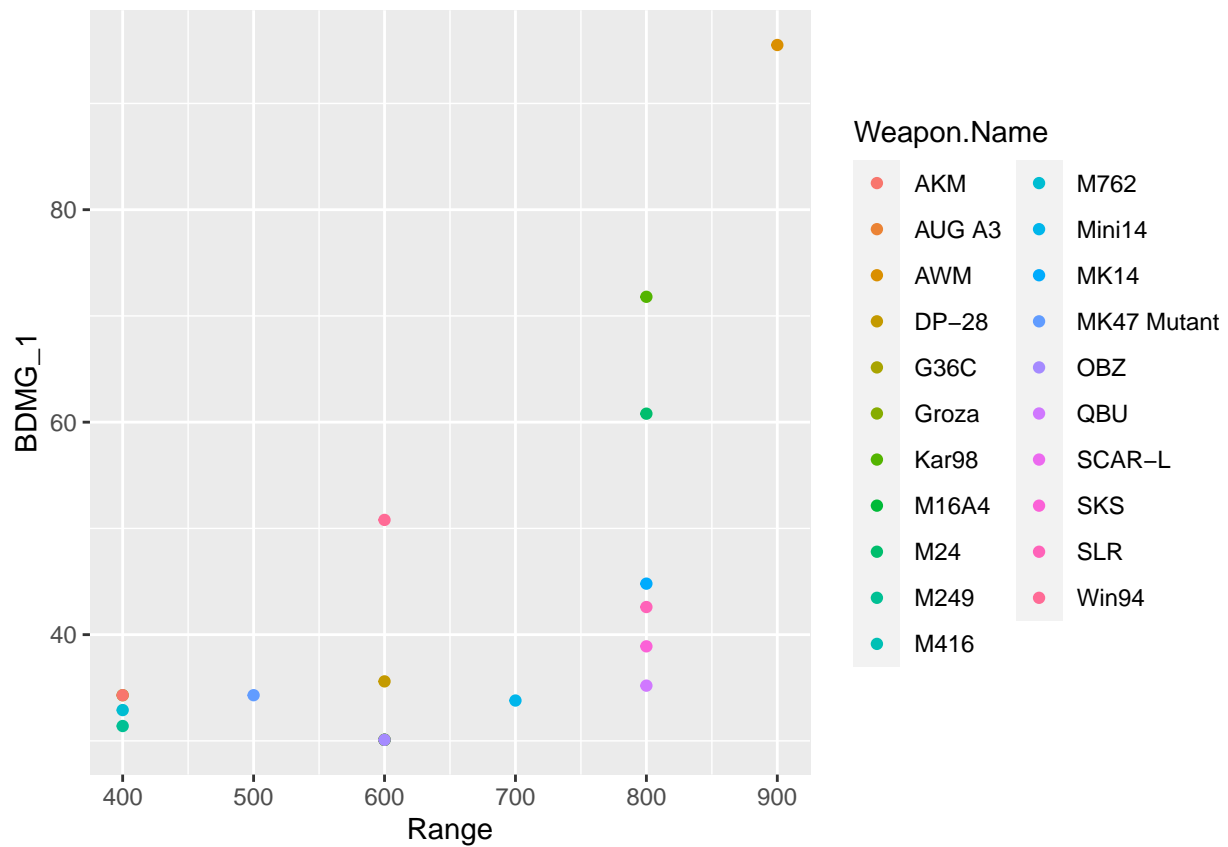


BDMG(Body Damage) and Range Comparison

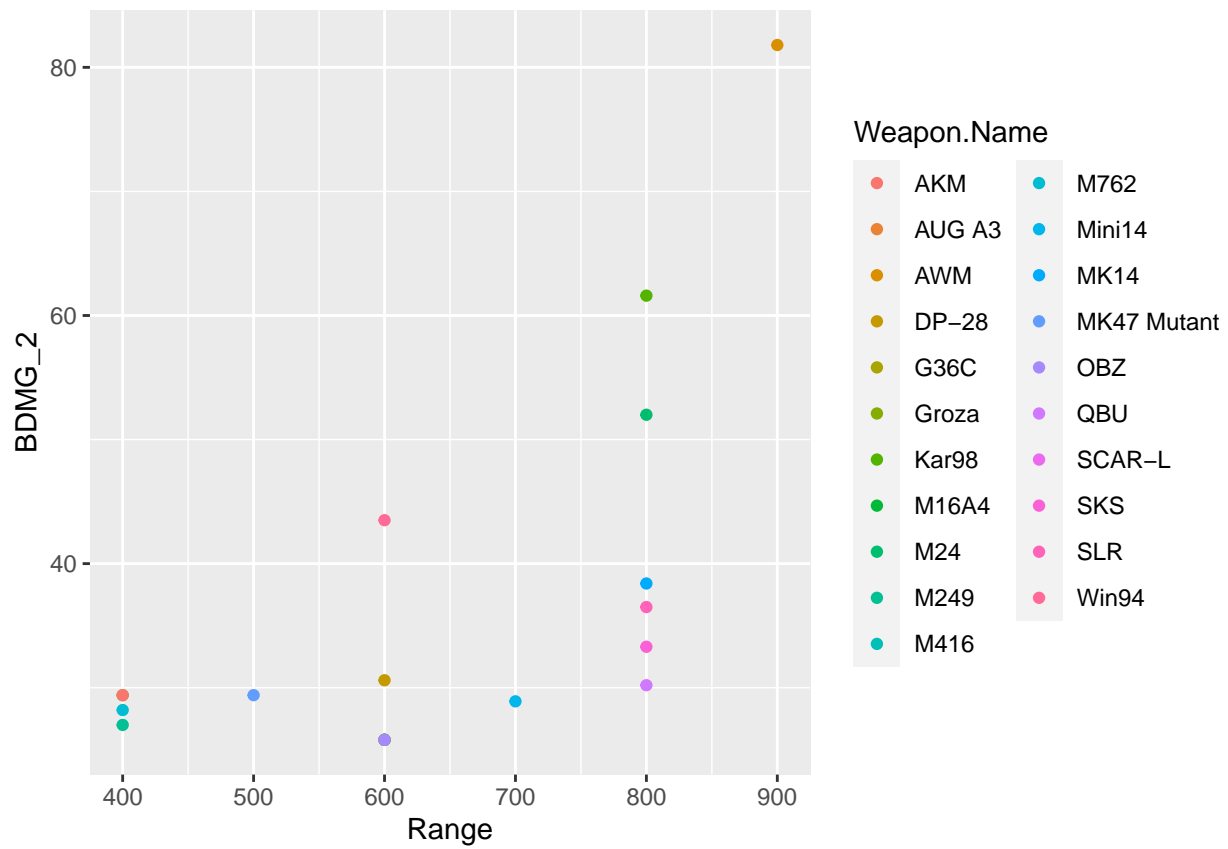
```
Best_BS%>%
  ggplot(aes(x=Range, y=BDMG_0, color = Weapon.Name)) +
  geom_point()
```



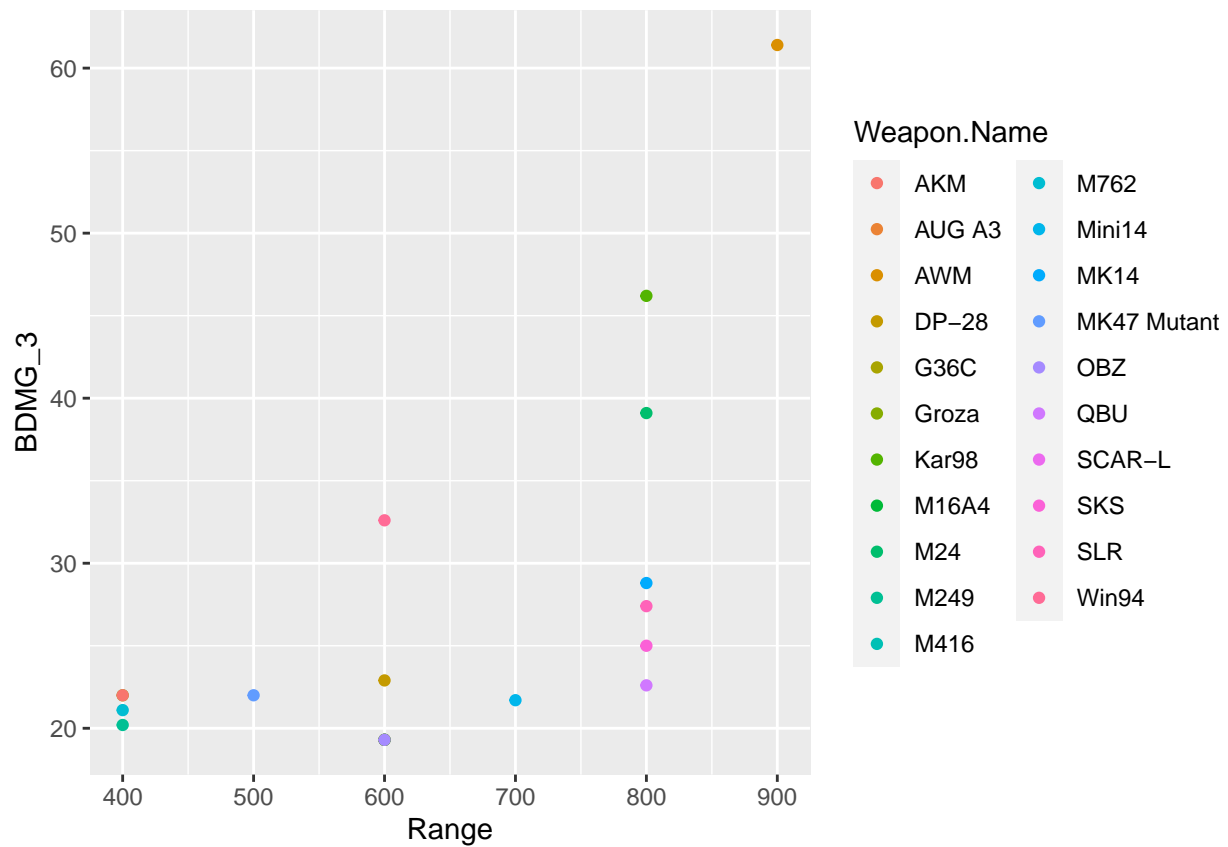
```
Best_BS%>%
  ggplot(aes(x=Range, y=BDMG_1, color = Weapon.Name)) +
  geom_point()
```



```
Best_BS%>%
  ggplot(aes(x=Range, y=BDMG_2, color = Weapon.Name)) +
  geom_point()
```

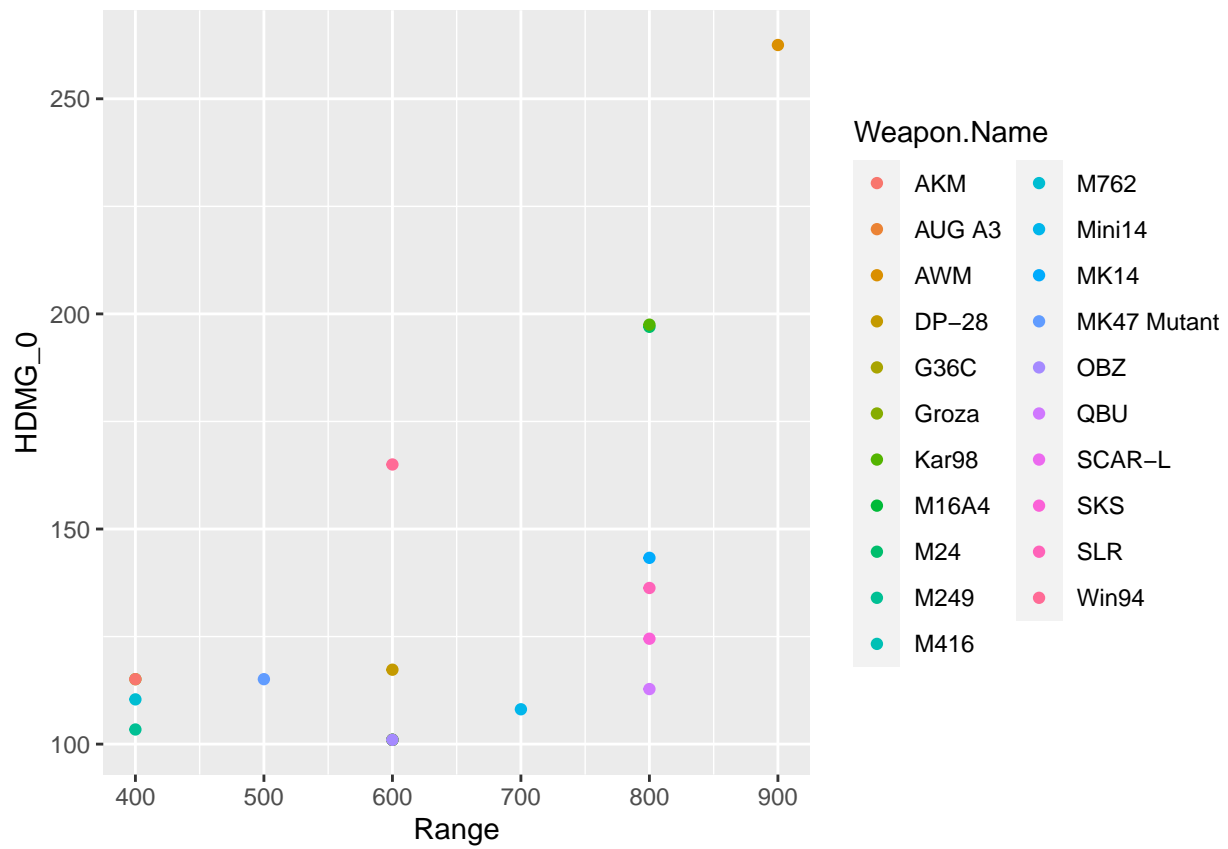


```
Best_BS%>%
  ggplot(aes(x=Range, y=BDMG_3, color = Weapon.Name)) +
  geom_point()
```

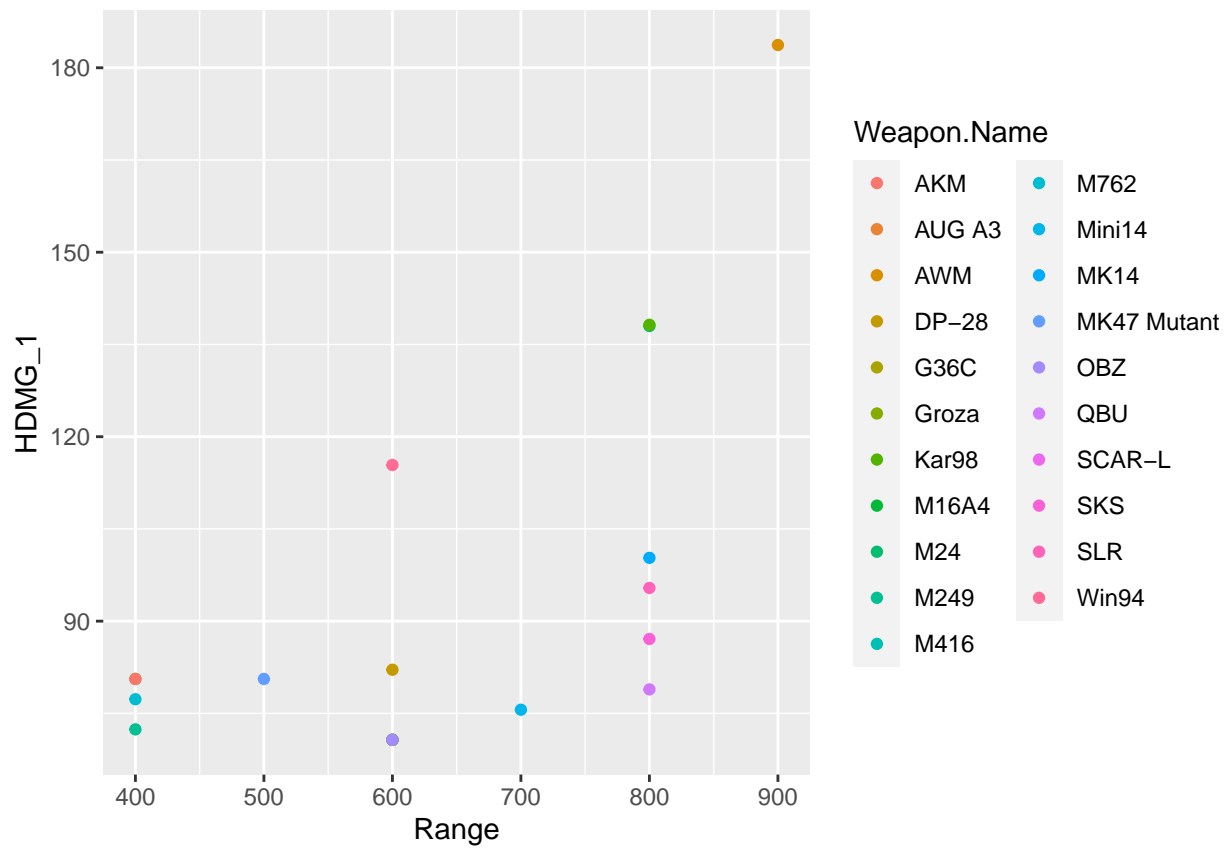



HDMG(Head Damage) and Range Comparison

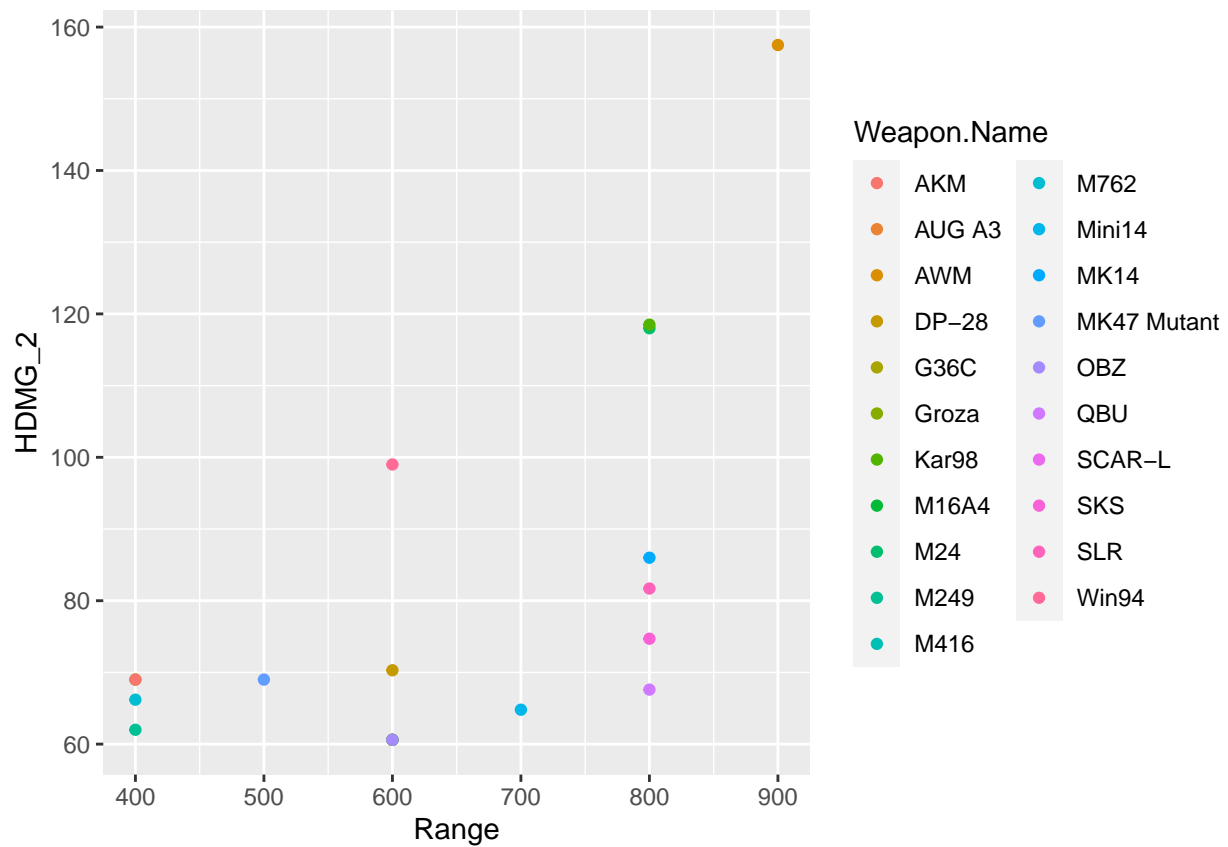
```
Best_BS%>%
  ggplot(aes(x=Range, y=HDMG_0, color = Weapon.Name)) +
  geom_point()
```



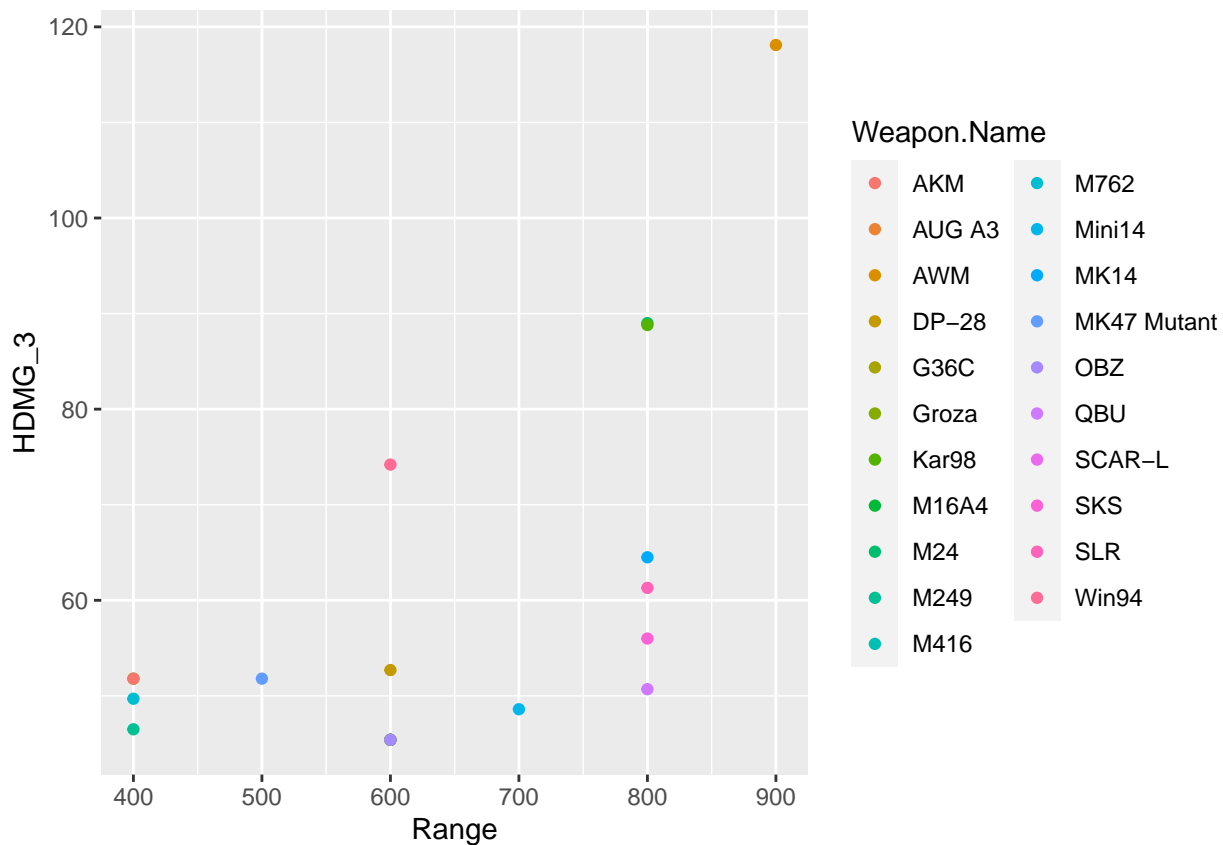
```
Best_BS%>%
  ggplot(aes(x=Range, y=HDMG_1, color = Weapon.Name)) +
  geom_point()
```



```
Best_BS%>%
  ggplot(aes(x=Range, y=HDMG_2, color = Weapon.Name)) +
  geom_point()
```



```
Best_BS%>%
  ggplot(aes(x=Range, y=HDMG_3, color = Weapon.Name)) +
  geom_point()
```



Filtering it down, out of the 21 weapons with best bullet speed to best damages.

```
Best_BS_DMG <- Best_BS%>%
  filter(HDMG_3 > 60, BDMG_3 > 30 )
```

Best_BS_DMG

##	Weapon.Name	Weapon.Type	Bullet.Type	Damage	Magazine.Capacity	Range
## 1	AWM	Sniper Rifle	0.30	105	5	900
## 2	M24	Sniper Rifle	7.62	79	5	800
## 3	Kar98	Sniper Rifle	7.62	75	5	800
## 4	Win94	Sniper Rifle	0.45	66	5	600

##	Bullet.Speed	Rate.of.Fire	Shots.to.Kill..Chest.	Shots.to.Kill..Head.
## 1	910	1.85	2	1
## 2	790	1.80	2	1
## 3	760	1.90	2	1
## 4	710	0.60	2	2

##	Damage.Per.Second	Fire.Mode	BDMG_0	BDMG_1	BDMG_2	BDMG_3	HDMG_0	HDMG_1	HDMG_2
## 1	65	Single	136.5	95.5	81.8	61.4	262.5	183.7	157.5
## 2	44	Single	86.9	60.8	52.0	39.1	197.0	138.0	118.0
## 3	39	Single	102.7	71.8	61.6	46.2	197.5	138.2	118.5
## 4	110	Single	72.6	50.8	43.5	32.6	165.0	115.4	99.0

##	HDMG_3
## 1	118.1
## 2	89.0
## 3	88.8
## 4	74.2