1. Explain the situation Billy Beane and the Oaklands A’s are in at the time of the case. Evaluate the strategy he uses to address the situation. Do you think it is successful? (10 marks)

2. Moneyball breaks down each player’s performance on a mathematical basis. What other positive or negative impacts might a player have upon the team that would not show up in this formula? How can you extrapolate this to evaluating a salesperson solely based on hers or his financial performance? (10 marks)

3. Use the data in Module 10 to answer the following. Note: SAL – salary in millions of dollars (20 marks)

You will build a team of 15 players based on the following criteria.

Teams must have:

- at least one of shortstop, second base, third base, and first base

- at least three middle infielders (shortstop and second base)

- at least three corner infielders (first base and third base)

- at least four outfielders (rightfield, centerfield, leftfield)

- at least two catchers

**a) Based on the criteria above and from your group (slide 12), which players are on your team?**

**Ans.)** Based on the above criteria and from slide 12 (Salary cap of $250 Million and at least 2 Canadian Players on the team), our team consists of:

|  |
| --- |
| 1. Alex Bregman |
| 1. Anthony Rendon |
| 1. Christian Yelich |
| 1. Cody Bellinger |
| 1. DJ LeMahieu |
| 1. Freddie Freeman |
| 1. J.T. Realmuto |
| 1. Javier Baez |
| 1. Josh Donaldson |
| 1. Max Muncy |
| 1. Mike Trout |
| 1. Mookie Betts |
| 1. Rafael Devers |
| 1. Russell Martin |
| 1. Trevor Story |
|  |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Batters | NAME | POA | GP | [R](https://www.espn.com/mlb/stats/player/_/view/batting/season/2019/seasontype/2/table/batting/sort/runs/dir/desc) | [H](https://www.espn.com/mlb/stats/player/_/view/batting/season/2019/seasontype/2/table/batting/sort/hits/dir/desc) | [AVG](https://www.espn.com/mlb/stats/player/_/view/batting/season/2019/seasontype/2/table/batting/sort/avg/dir/asc) | [HR](https://www.espn.com/mlb/stats/player/_/view/batting/season/2019/seasontype/2/table/batting/sort/homeRuns/dir/desc) | [WAR](https://www.espn.com/mlb/stats/player/_/view/batting/season/2019/seasontype/2/table/batting/sort/WARBR/dir/desc) | SAL | CAN |
| 3 | Alex BregmanHOU | 3B | 156 | 122 | 164 | 0.296 | 41 | 8.4 | 5.7 | 0 |
| 7 | Anthony RendonWSH | 3B | 146 | 117 | 174 | 0.319 | 34 | 6.3 | 10 | 0 |
| 19 | Christian YelichMIL | LF | 130 | 100 | 161 | 0.329 | 44 | 7.1 | 12.5 | 0 |
| 20 | Cody BellingerLAD | CF | 156 | 121 | 170 | 0.305 | 47 | 9 | 16.1 | 0 |
| 26 | DJ LeMahieuNYY | 2B | 145 | 109 | 197 | 0.327 | 26 | 6 | 15 | 0 |
| 34 | Freddie FreemanATL | 1B | 158 | 113 | 176 | 0.295 | 38 | 4.4 | 8 | 1 |
| 40 | J.T. RealmutoPHI | C | 145 | 92 | 148 | 0.275 | 25 | 4.4 | 20 | 0 |
| 43 | Javier BaezCHC | SS | 138 | 89 | 149 | 0.281 | 29 | 4.8 | 11.7 | 0 |
| 48 | Josh DonaldsonATL | 3B | 155 | 96 | 142 | 0.259 | 37 | 6.1 | 21 | 0 |
| 61 | Max MuncyLAD | 1B | 141 | 101 | 122 | 0.251 | 35 | 5.7 | 7.5 | 0 |
| 63 | Mike TroutLAA | CF | 134 | 110 | 137 | 0.291 | 45 | 8.3 | 36 | 0 |
| 64 | Mookie BettsBOS | RF | 150 | 135 | 176 | 0.295 | 29 | 6.8 | 27 | 0 |
| 66 | Rafael DeversBOS | 3B | 156 | 129 | 201 | 0.311 | 32 | 5.3 | 4.6 | 0 |
| 70 | Russell MartinTOR | C | 127 | 58 | 101 | 0.233 | 20 | 0 | 20 | 1 |
| 78 | Trevor StoryCOL | SS | 145 | 111 | 173 | 0.294 | 35 | 6.4 | 17.5 | 0 |
|  |  |  | **2182** | **1603** | **2391** | **0.290733** | **517** | **89** | **232.6** | **2** |

**b) What is the total WAR for your team?**

**Ans.)** The total WAR of our team is **89.**

**c) What is the total salary of your team?**

**Ans.)** The total salary of our team is **$232.6 Million.**

**d) how many of the fifteen highest paid available players (from the complete data set) are on your team?**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Batters | NAME | POA | GP | [R](https://www.espn.com/mlb/stats/player/_/view/batting/season/2019/seasontype/2/table/batting/sort/runs/dir/desc) | [H](https://www.espn.com/mlb/stats/player/_/view/batting/season/2019/seasontype/2/table/batting/sort/hits/dir/desc) | [AVG](https://www.espn.com/mlb/stats/player/_/view/batting/season/2019/seasontype/2/table/batting/sort/avg/dir/asc) | [HR](https://www.espn.com/mlb/stats/player/_/view/batting/season/2019/seasontype/2/table/batting/sort/homeRuns/dir/desc) | [WAR](https://www.espn.com/mlb/stats/player/_/view/batting/season/2019/seasontype/2/table/batting/sort/WARBR/dir/desc) | SAL |
| 32 | Francisco LindorCLE | SS | 143 | 101 | 170 | 0.284 | 32 | 4.7 | 43.3 |
| 63 | Mike TroutLAA | CF | 134 | 110 | 137 | 0.291 | 45 | 8.3 | 36 |
| 36 | George SpringerHOU | CF | 122 | 96 | 140 | 0.292 | 39 | 6.2 | 32 |
| 13 | Bryce HarperPHI | RF | 157 | 98 | 149 | 0.260 | 35 | 4.2 | 30 |
| 59 | Manny MachadoSDP | 3B | 156 | 81 | 150 | 0.256 | 32 | 3.1 | 30 |
| 2 | Albert PujolsLAA | 1B | 131 | 55 | 120 | 0.244 | 23 | 0.4 | 28 |
| 64 | Mookie BettsBOS | RF | 150 | 135 | 176 | 0.295 | 29 | 6.8 | 27 |
| 39 | J.D. MartinezBOS | LF | 146 | 98 | 175 | 0.304 | 36 | 3.3 | 23.8 |
| 31 | Eric HosmerSDP | 1B | 160 | 72 | 164 | 0.265 | 22 | -0.3 | 21 |
| 48 | Josh DonaldsonATL | 3B | 155 | 96 | 142 | 0.259 | 37 | 6.1 | 21 |
| 40 | J.T. RealmutoPHI | C | 145 | 92 | 148 | 0.275 | 25 | 4.4 | 20 |
| 70 | Russell MartinTOR | C | 127 | 58 | 101 | 0.233 | 20 | 0 | 20 |
| 84 | Xander BogaertsBOS | SS | 155 | 110 | 190 | 0.309 | 33 | 5.2 | 20 |
| 54 | Kris BryantCHC | 3B | 147 | 108 | 153 | 0.282 | 31 | 3.6 | 19.5 |
| 87 | Yasmani GrandalMIL | C | 153 | 79 | 126 | 0.246 | 28 | 2.5 | 18.2 |

**Ans.) Five of the Fifteen highest paid available players are on our team. They are:**

Mike Trout, Mookie Betts, Josh Donaldson, J.T. Realmuto, Russell Martin

**e) Rank the positions from top to bottom based on average salary (from the complete data set).**

**Ans.)**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Rank | Position | Count of Players | | Salary $M | | Average Salary $M | |
| 1 | **CF** | 10 | 128.75 | | 12.875 | |
| 2 | **C** | 9 | 107.8 | | 11.978 | |
| 3 | **SS** | 14 | 161.5 | | 11.536 | |
| 4 | **RF** | 10 | 99.85 | | 9.985 | |
| 5 | **1B** | 10 | 96.8 | | 9.680 | |
| 6 | **3B** | 13 | 123.5 | | 9.500 | |
| 7 | **LF** | 13 | 92.45 | | 7.112 | |
| 8 | **2B** | 8 | 50.5 | | 6.313 | |
| 9 | **DH** | 3 | 14.2 | | 4.733 | |
|  |  |  |  | |  | |
| Total |  | 90 | 875.35 | |  | |

**f)** **What is the minimum salary of a team that meets all the original criteria (not including slide 11), What is the WAR for this team? Note: you may need to let this run overnight depending on your code and processing speed.**

**Ans.)** The minimum salary of a team that meets all the original criteria is found out to be **$22.8 Million.** The WAR of this team turns out to be **29.5**

**POS Ranking**