**Solutions-**

1. **IF Function**:
   * Determine if employees are earning above or below $50,000. Use the IF function to display "Above" or "Below".

**=IF(F2>50000, "Above","Below")**

1. **IFS Function**:
   * Assign a performance rating based on the number of project hours: "Excellent" for 50 or more hours, "Good" for 40-49 hours, "Average" for 30-39 hours, and "Poor" for below 30 hours.

**=IFS(J2<30,"Poor",J2<=39,"Average",J2<=49,"Good",J2>=50,"Excellent")**

1. **AND Function**:
   * Check if employees from the HR department and North region have sales above $15,000.

**=IF(AND(E2="HR",I2="North",H2>15000),"Yes","No")**

1. **OR Function**:
   * Identify employees who are either in the IT department or have a salary above $60,000.

**=IF(OR(E2="IT",F2>60000),"Yes","No")**

1. **NOT Function**:
   * Determine if employees are not from the Marketing department.

**=IF(NOT(E2="Marketing"),"No","Yes")**

1. **SUMIF Function**: o Calculate the total salary of employees from the Sales department.

**=SUMIF($E$2:$E$201,"Sales",$F$2:$F$201)**

1. **SUMIFS Function**:
   * Calculate the total salary of employees in the IT department who have more than 35 project hours.

**=SUMIFS($F$2:$F$201,$E$2:$E$201,"IT",$J$2:$J$201,">35")**

1. **COUNTIF Function**:

* Count the number of employees in the HR department.

**=COUNTIF($E$2:$E$201,"HR")**

1. **COUNTIFS Function**:

* Count the number of female employees in the Finance department.

**=COUNTIFS($D$2:$D$201,"F",$E$2:$E$201,"Finance")**

1. **AVERAGEIF Function**: o Find the average salary of employees in the Marketing department.

**=AVERAGEIF($E$2:$E$201,"Marketing",$F$2:$F$201)**

1. **AVERAGEIFS Function**:
   * Find the average sales for employees in the North region with project hours above 40.

**=AVERAGEIFS($H$2:$H$201,$I$2:$I$201,"North",$J$2:$J$201,">40")**

1. **MAXIFS Function**:
   * Determine the maximum salary among employees in the South region.

**=MAXIFS($F$2:$F$201,$I$2:$I$201,"South")**

1. **MINIFS Function**:
   * Find the minimum number of project hours for employees in the Finance department.

**=MINIFS($J$2:$J$201,$E$2:$E$201,"Finance")**

1. **VLOOKUP Function**: o Use VLOOKUP to find the salary of an employee based on their ID.

**=VLOOKUP(A2,Sheet1!$A$2:$O$201,6,TRUE)**

1. **HLOOKUP Function**: o Use HLOOKUP to find the joining date of employees based on their department.

**=HLOOKUP(G1,$G$1:$G$201,MATCH(L225,$E$1:$E$201,0),FALSE)**

1. **INDEX and MATCH Functions**:

o Use INDEX and MATCH to find the sales amount for a specific employee.

**=INDEX($H$2:$H$201,MATCH(108,$A$2:$A$201,0))**

1. **Conditional Formatting**:
   * Highlight cells in the Salary column that are above $60,000.

**Done(Workbook, sheet no.1)**

1. **Pivot Table**:
   * Create a pivot table to summarize average sales by region and department.

**Done(workbook, sheet no.2)**

1. **Data Validation**:
   * Set up data validation to allow only dates after 2015-01-01 in the Joining Date column.

**Done(Workbook, sheet no.1)**

1. **Chart Creation**:
   * Create a bar chart to visualize the total sales by department.

**Done(Workbook, sheet no.2)**