Project Name: BarCode

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**Team Members:**

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# THE REFERENCE GUIDE

BarCode model performs the analysis by incorporating the data, which is entered in the Input Worksheet, into the rest of the workbook.

* The Inputs for **Hiring Stream Analysis Worksheet** are:

# Number of part time workers

Salary per hour

# Working Hours per day

# Number of full time workers

# Monthly Salary for full time workers

The daily hiring capacities for part time workers are calculated with the following formula:

 =ROUNDUP (MMULT (Number of Part-Time Personnel, Occupancy Rate), 0)

Then, the salaries for each category of part time workers are calculated as:

=Part Time Daily Hiring \* Part Time Working Hours Per Day \* Part Time SalaryPerHour

Once, the weekly salaries are computed for part time workers, the model converts the total amount into a monthly part time salary figure. However, in order to reflect the differences in the monthly performances of the bar, the model calculates the performance-based part-time salaries on a monthly basis, by multiplying the average monthly salaries with the monthly performance rates. The model than adds this amount with the monthly salaries of full time workers, to generate the performance based total salaries.

* The Inputs for **Equipment** **Analysis Worksheet** are:

Costs *per item* of related machinery and equipment items

Quantity of related machinery and equipment items

Useful Life of related machinery and equipment items

In order to calculate the Depreciation Base it is necessary to figure out the total costs of machinery and equipment per item and monthly depreciation rates related to them. The Costs of machinery and equipment items are calculated with the following formula:

=Cost Per Equipment \* Quantity Per Equipment

Depreciation Rates Per Month are calculated as follows:

=1/UsefulLifePerEquipment\*12/100

Depreciation base is computed with the help of costs and monthly depreciation rates:

=Equipment Cost \* Depreciation Rate

The total depreciation expense for all machinery and equipment items are computed by summing up all the items depreciation expense for each month of the year.

* The Inputs for **Utilities Worksheet** are:

Electricity

Water

Heating

Cleaning

The analysis initiates with the calculation of cost associated with each utility item (electricity, water, heating, and cleaning). The formula for this calculation is:

=Electricity Rate \* Total Revenue

=Water Rate \* Total Revenue

=Heating Rate \* Total Revenue

=Cleaning Rate \* Total Revenue

Then the total utility cost is computed monthly by taking the sum of each utility item for each month of the year.

* The Inputs for **Other Cash Generating Items Worksheet** are:

# Entrance Fee

Percentage of customers paying entrance fees

From the daily expected number of customers stream, the model computes the number of customers those paying the entrance fee. This is performed by multiplying the number of customers with the percentage of customers paying entrance fees. Once the model generates the weekly revenue, it converts this into a monthly revenue figure. Performance based entrance fee revenue is calculated by using the following equation:

=Monthly Entrance Fee Revenue \* Monthly Performance Rate

* The Inputs for **Beverage Analysis Worksheet** are:

Cost Per Bottle (Barrel)

Serving Per Bottle (Barrel)

## Price per serving

## Average Number of Serving per Customer

Consumption Rates for each Beverage Category

The analysis initiates with the calculation of cost per serving for each beverage. The formula for this calculation is:

 Cost per Bottle

Serving per Bottle

Then for monthly consumption analysis, the total number of expected customers is found by multiplying the weekly-expected customer number (from the Input Worksheet) by 4. The total number of servings per month is calculated by the following formula:

Expected Number of Customers per Month \* Average Serving Per Customer

Monthly consumption of each beverage is computed by multiplying the consumption rates for each category (from the Inputs Worksheet) by the total number of servings per month. The consumption amounts in serving units for each beverage category is converted into consumption amounts in bottles by the use of the following excel calculation:

=ROUNDUP (Beverage Consumption Per Month / Serving Per Bottle, 0)

Taking the serving units as the basis, the monthly revenues from and monthly costs of each beverage is calculated. However, the total revenue from these beverages is just an average. In order to reflect the real life scenarios, we multiplied the revenue from beverages with the monthly performance rate (from the Inputs Worksheet). The result is the performance-based revenues from beverage sales.

* The inputs for **Inventory Control Worksheet** are:

Beginning Inventory

Threshold Amounts in Bottles for Each Beverage Category

Reorder Amounts in Bottles for Each Beverage Category

The analysis considers the inventory control for each beverage category independently. Each analysis initiates with a beginning inventory amount, which should be entered by the user in the Input Worksheet. Then, the monthly consumption amount is subtracted from the beginning inventory levels, generating the ending inventory value. Based on the ending inventory levels and the threshold levels (those set by the user in the Input Worksheet), the model automatically detects, whether the bar needs to reorder the beverages from suppliers or not. If reordering is required, the amount of reorder is added to the beginning inventory of the following month. The amount of reorder is also stated in the Input Worksheet. This calculation is performed using the following functional equation of Excel:

=IF (Beer Ending Inventory <= Beer Threshold, Beer Order Amount, 0)

Once the reorder levels are calculated, the model presents the costs associated with the reorder by multiplying the required amounts with the costs of the beverages.

Then the total of the monthly reordering costs for all beverage categories are multiplied with the monthly performance rates, in order to obtain the performance-based costs of beverages.

* The inputs for **Income Statement Worksheet** are:

Employee Benefits as a percentage of Salaries

Building Rent Cost

Others

Tax rate

The Income Statement Worksheet incorporates all the cost and revenue streams from other worksheets. Initially, the total revenue from the bar is calculated as a sum of entrance fee revenues and beverage sales. Then, the model deducts the beverage costs from the total revenue to obtain the gross profit. Operating Expenses are categorized as salaries, employee benefits, rent expense, utility services, depreciation and others. Employee benefits stream is calculated using the following equation:

=Performance Based Salaries \* Employee Benefit Ratio

Income before tax is calculated by subtracting the total operating expense from the gross profit. Taxes paid are computed by multiplying the income before tax with the tax rate (which is stated on the Inputs Worksheet). Finally the model presents the income after taxes on a monthly basis. A chart is also generated to view the monthly net profits.