**Metadata for Creation of Utilisation and Footfall Data for OCBC Arena**

**Preparation of Excel Report**

Data Cleaning and Preparation

1. Deletion of “cancelled” entries from column “Status”
2. Filtering out facilities used for the following sports using column “Zone”:
   1. Badminton: Courts 1-12
   2. Basketball: Courts 1-3
   3. Table Tennis: Courts 1-10
   4. Volleyball: 2 regular volleyball court
   5. Netball: 1 netball court
3. Duration of hours to be calculated from the difference in end and start booking time (“Start date” and “End date”)
4. Insert a sport filter to group the zones (new column)

Steps for Categorising Data

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Categorisation** | **Search Term** | **Column Searched From** | **Assumed Footfall** | **Comments** |
| Advance/Concession | Advance | Full Name | Public Usage | No differentiation between advance and concession; some details in comments, but too inefficient to filter manually |
| Public (Online) | Online | Created By | Public Usage | Largest segment of the bookings; checked that the “Full Name” column are all people’s names |
| Events | Event | Comments | To use actual attendance (but to divide across the different venues for tracking of footfall in each venue) | While this can be searched from “Full Name” as well, there are events that are identified as events in “Comments”, but tagged as other categories in “Full Name”. Propose to search using “Comments” which seem to be more accurate since abovementioned mention booking is likely an event. |
| Programme | Programme | Full Name | Dependent on prog (see below) | Although this can be generated from “Comments” but there are some programmes that have comments as block booking. Propose to search using “Full Name” which seems to be more comprehensive. |
| NSA | NSA | Full Name | To use actual attendance | Remember to remove any personal names that might be generated. |
| Others (Maintenance) | Maintenance; Fixing | Comments | Nil | Due diligence as this should not account for any footfall |
| Public (Online) | Migrated | Full Name | Public Usage | Detailed customer records must be checked to ascertain mode of original booking. For simplicity, suggest classifying as online for the following reasons:   * Majority of the bookings appear to be done online * Should a booking have to be rescheduled, an email will be sent to customer for information, so the correspondence does not happen OTC per se |
| Public (OTC) | - | - | Public Usage | This would comprise all other bookings that are not captured above. One key group is staff booking (clarified that these are done OTC) |

For future reference, the column “Used products” lists the hourly rate of the booked facility, but the data might not be complete.

Calculation of Footfall

1. Events – stripped out from footfall calculation
2. Programmes
   1. Basketball Academy is calculated based on 6 pax/hour (same calculation used for Slingers event without attendance)
   2. Netball Academy (Afterschool, Social Netball and NEtforMums) is calculated based on 6 pax/hour (same calculation used for SGNA programme)
   3. Multi-Activity Camp is calculated based on 6 pax/hour for each facility
3. NSA – stripped out from footfall calculation
4. Public usage
   1. Badminton is calculated based on 4pax/hour
   2. Basketball is calculated based on 10pax/hour
   3. Table Tennis is calculated based on 4pax/hour
   4. Volleyball is calculated based on 12pax/hour
   5. Netball is calculated based on 14pax/hour

**PowerBI Report Creation**

Create two separate tables based on manually gathered information:

Table 1: No of days

|  |  |  |
| --- | --- | --- |
| **Name of Column** | **Description** | **Pseudo Excel Formula (if any)** |
| MM-YY [A] | MMYYYY format for matching month data with main datafile |  |
| Start Date [B] | Start date of month |  |
| End Date [C] | End date of month |  |
| Total No. of Days [D] | No. of days in a month | [C] – [B] +1 |
| Total No. of Hours [E] | Total number of bookable hours in a month | [D] \* 15 |
| Total No. of Non-Peak Weekdays [F] | Number of weekdays in a month that are not public holidays | =NETWORKDAYS([B],[C],[I]) |
| No. of Non-Peak Hours [G] | Number of non-peak hours in a month | [F] \* 11 |
| No. of Peak Hours [H] | Number of peak hours in a month | [E] – [G] |
| Public Holidays [I] | List of public holidays |  |

There is some hard coding involved. The reason is that there is no easy way to generate peak and non-peak booking information, since there can be bookings that include both peak and non-peak hours. The hard coding here basically limits the analysis to monthly data, since the total number of bookable hours are calculated at the month level. However, this is reasonable since reports are typically generated on a monthly basis.

Table 2: Public Holidays

This file contains a list of public holidays for matching, to provide public holiday indicator in the main datafile. This is stored separately for two reasons. First, ease of format matching with the main datafile. Second, should we decide to change the peak and non-peak charging mechanisms, e.g. consider certain dates which are not public holidays as “peak”, we can amend the above file without touching the public holiday indicator.

Create the following columns in the main “Facility Booking Details” file:

|  |  |  |
| --- | --- | --- |
| **Name of Column** | **Description** | **DAX Formula** |
| Category | Identify categories of facility usage based on booking information | Category = IF(      CONTAINSSTRING('Facility Booking Details'[Full name], "Advance"),"Advance/Concession",      IF(         CONTAINSSTRING('Facility Booking Details'[Created By], "Online"),"Public (Online)",         IF(             CONTAINSSTRING('Facility Booking Details'[Comments], "Event"),"Events",             IF(                 CONTAINSSTRING('Facility Booking Details'[Full name], "Programme"),"Programme",                 IF(                     CONTAINSSTRING('Facility Booking Details'[Full name], "NSA"),"NSA",                     IF(                         CONTAINSSTRING('Facility Booking Details'[Comments], "Maintenance"),"Others (Maintenance)",                         IF(                             CONTAINSSTRING('Facility Booking Details'[Full name], "Migrated"),"Public (Online)",                             "Public (OTC)"                             )                      )                 )             )         )      )  ) |
| Duration in Hour | Calculate the duration of booking in hours. If the booking is cancelled, it will be 0. | Duration in Hour = IF(      'Facility Booking Details'[Status] = "Cancelled", 0, HOUR('Facility Booking Details'[End date]) - HOUR('Facility Booking Details'[Start date])) |
| Footfall per hour | Estimated footfall per hour based on the category of usage and the type of facility booked. Assumptions are based on metadata above. | Footfall per hour = IF(      'Facility Booking Details'[Category] = "Programme", 6,      IF(         'Facility Booking Details'[Category] = "NSA", 0,         IF(             'Facility Booking Details'[Category] = "Events", 0,             IF(                 'Facility Booking Details'[Category] = "Others (Maintenance)", 0,                 IF(                     'Facility Booking Details'[Sport] = "Badminton (Arena)", 4,                     IF(                         'Facility Booking Details'[Sport] = "Basketball (Arena)", 10,                         IF(                             'Facility Booking Details'[Sport] = "Table Tennis (Arena)", 4,                             IF(                                 'Facility Booking Details'[Sport] = "Volleyball (Arena)", 12,                                 IF(                                     'Facility Booking Details'[Sport] = "Netball (Arena)", 14,                                  0)                             )                         )                     )                 )             )         ) |
| Day of Booking | Day of the week indicator. This is used for identification of peak/non-peak hours. | Day of Booking = WEEKDAY('Facility Booking Details'[Start date], 2) |
| Sport | Groups the facilities together based on the sport | Sport = IF(      CONTAINSSTRING('Facility Booking Details'[Zone], "Basketball"),"Basketball (Arena)",      IF(         CONTAINSSTRING('Facility Booking Details'[Zone], "Netball"),"Netball (Arena)",         IF(             CONTAINSSTRING('Facility Booking Details'[Zone], "Table Tennis"),"Table Tennis (Arena)",             IF(                 CONTAINSSTRING('Facility Booking Details'[Zone], "(2."),"Volleyball (Arena)",                 IF(                     CONTAINSSTRING('Facility Booking Details'[Zone], "Badminton"),"Badminton (Arena)",                     IF(                         CONTAINSSTRING('Facility Booking Details'[Zone], "Lawn"),"Lawn Bowl",                         IF(                              CONTAINSSTRING('Facility Booking Details'[Zone], "Beach"),"Beach Volleyball",                              IF(                                  CONTAINSSTRING('Facility Booking Details'[Zone], "Lane"),"Swimming",                                  IF(                                      CONTAINSSTRING('Facility Booking Details'[Zone], "Hard"),"Basketball (FSP)",                                      "Others")                              )                          )                      )                  )              )          ) |
| Booking footfall | Estimated footfall for the booking, based on duration of booking and estimated footfall per hour based on category of usage | Booking Footfall = 'Facility Booking Details'[Footfall per hour] \* 'Facility Booking Details'[Duration in Hour] |
| Peak footfall | Estimated footfall during peak hours, based on duration of booking and estimated footfall per hour based on category of usage | Peak Footfall = 'Facility Booking Details'[Peak Hours Booked]\*'Facility Booking Details'[Footfall per hour] |
| Non-Peak Footfall | Estimated footfall during non-peak hours, based on duration of booking and estimated footfall per hour based on category of usage | Non-Peak Footfall = 'Facility Booking Details'[Footfall per hour]\*'Facility Booking Details'[Non-Peak Hours Booked] |
| Public Holidays | Public holiday indicator for analysis and identifying weekdays that are considered “peak” | Public Holidays = LOOKUPVALUE(      'Public Holidays'[Days],'Public Holidays'[Days],'Facility Booking Details'[Date],0) |
| Time of Booking | Hour indicator of the start time of booking for analysis | Time of Booking = HOUR('Facility Booking Details'[Start date]) |
| Month of Booking | Month indicator of the start date of booking for analysis | Month of Booking = month('Facility Booking Details'[Start date]) |
| Year of Booking | Year indicator of the start date of booking for analysis | Year = year('Facility Booking Details'[Start date]) |
| MM-YY | MMYYYY format to match month information with separate “No of days” table | MM-YY = CONCATENATE(MONTH('Facility Booking Details'[Date]),YEAR([Date])) |
| Non-Peak Hours Booked | Number of non-peak hours within the booking, for generation of utilisation during non-peak hours | Non-Peak Hours Booked =  IF(      'Facility Booking Details'[Public Holidays]>0,      0,      IF(          'Facility Booking Details'[Day of Booking] < 6 && 'Facility Booking Details'[Time of Booking] + 'Facility Booking Details'[Duration in Hour] < 19,           'Facility Booking Details'[Duration in Hour],           IF(               'Facility Booking Details'[Day of Booking] < 6 && 'Facility Booking Details'[Time of Booking] + 'Facility Booking Details'[Duration in Hour] >= 19,                MAX('Facility Booking Details'[Duration in Hour] - HOUR('Facility Booking Details'[End date]) + 18,0),                0)       )       ) |
| Peak Hours Booked | Number of peak hours within the booking, for generation of utilisation during peak hours | Peak Hours Booked = 'Facility Booking Details'[Duration in Hour] - 'Facility Booking Details'[Non-Peak Hours Booked] |
| Max Non-Peak Hours | Maximum number of non-peak hours in the month, as matched with “No of days” table, for generation of utilisation during non-peak hours | Max Non-Peak Hours = LOOKUPVALUE('No. of Days'[No. of Non-Peak Hours],'No. of Days'[MM-YY],'Facility Booking Details'[MM-YY]) |
| Max Peak Hours | Maximum number of peak hours in the month, as matched with “No of days” table, for generation of utilisation during peak hours | Max Peak Hours = LOOKUPVALUE('No. of Days'[No. of Peak Hours],'No. of Days'[MM-YY],'Facility Booking Details'[MM-YY]) |
| Utilisation by Sport | Total utilisation of facilities broken down by sports (formula essentially takes into consideration the total number of bookable facilities for each sport); hardcoded to be used only for monthly analysis | Utilisation by Sport = IF(      'Facility Booking Details'[Sport] = "Badminton (Arena)", 'Facility Booking Details'[Utilisation by Zone]/12,      IF(         'Facility Booking Details'[Sport] = "Basketball (Arena)", 'Facility Booking Details'[Utilisation by Zone]/3,          IF(              'Facility Booking Details'[Sport] = "Table Tennis (Arena)", 'Facility Booking Details'[Utilisation by Zone]/10,              IF(                  'Facility Booking Details'[Sport] = "Volleyball (Arena)", 'Facility Booking Details'[Utilisation by Zone]/2,                  IF(                      'Facility Booking Details'[Sport] = "Netball (Arena)", 'Facility Booking Details'[Utilisation by Zone],                      IF(                          'Facility Booking Details'[Sport] = "Basketball (FSP)", 'Facility Booking Details'[Utilisation by Zone]/3,                          IF(                              'Facility Booking Details'[Sport] = "Lawn Bowl", 'Facility Booking Details'[Utilisation by Zone]/4,                              IF(                                  'Facility Booking Details'[Sport] = "Beach Volleyball", 'Facility Booking Details'[Utilisation by Zone]/2,0                  )))))))) |
| Utilisation by Sport (Non-Peak) | Total utilisation of facilities during non-peak hours broken down by sports (formula essentially takes into consideration the total number of bookable facilities for each sport); hardcoded to be used only for monthly analysis | Utilisation by Sport (Non-Peak) = IF(      'Facility Booking Details'[Sport] = "Badminton (Arena)", 'Facility Booking Details'[Utilisation by Zone (Non-Peak)]/12,      IF(         'Facility Booking Details'[Sport] = "Basketball (Arena)", 'Facility Booking Details'[Utilisation by Zone (Non-Peak)]/3,          IF(              'Facility Booking Details'[Sport] = "Table Tennis (Arena)", 'Facility Booking Details'[Utilisation by Zone (Non-Peak)]/10,              IF(                  'Facility Booking Details'[Sport] = "Volleyball (Arena)", 'Facility Booking Details'[Utilisation by Zone (Non-Peak)]/2,                  IF(                      'Facility Booking Details'[Sport] = "Netball (Arena)", 'Facility Booking Details'[Utilisation by Zone (Non-Peak)],                      IF(                          'Facility Booking Details'[Sport] = "Basketball (FSP)", 'Facility Booking Details'[Utilisation by Zone (Non-Peak)]/3,                          IF(                              'Facility Booking Details'[Sport] = "Lawn Bowl", 'Facility Booking Details'[Utilisation by Zone (Non-Peak)]/4,                              IF(                                  'Facility Booking Details'[Sport] = "Beach Volleyball", 'Facility Booking Details'[Utilisation by Zone (Non-Peak)]/2,0                  )))))))) |
| Utilisation by Sport (Peak) | Total utilisation of facilities during peak hours broken down by sports (formula essentially takes into consideration the total number of bookable facilities for each sport); hardcoded to be used only for monthly analysis | Utilisation by Sport (Peak) = IF(      'Facility Booking Details'[Sport] = "Badminton (Arena)", 'Facility Booking Details'[Utilisation by Zone (Peak)]/12,      IF(         'Facility Booking Details'[Sport] = "Basketball (Arena)", 'Facility Booking Details'[Utilisation by Zone (Peak)]/3,          IF(              'Facility Booking Details'[Sport] = "Table Tennis (Arena)", 'Facility Booking Details'[Utilisation by Zone (Peak)]/10,              IF(                  'Facility Booking Details'[Sport] = "Volleyball (Arena)", 'Facility Booking Details'[Utilisation by Zone (Peak)]/2,                  IF(                      'Facility Booking Details'[Sport] = "Netball (Arena)", 'Facility Booking Details'[Utilisation by Zone (Peak)],                      IF(                          'Facility Booking Details'[Sport] = "Basketball (FSP)", 'Facility Booking Details'[Utilisation by Zone (Peak)]/3,                          IF(                              'Facility Booking Details'[Sport] = "Lawn Bowl", 'Facility Booking Details'[Utilisation by Zone (Peak)]/4,                              IF(                                  'Facility Booking Details'[Sport] = "Beach Volleyball", 'Facility Booking Details'[Utilisation by Zone (Peak)]/2,0                  )))))))) |
| Utilisation by Zone | Utilisation of facility; hardcoded to be used only for monthly analysis | Utilisation by Zone = ('Facility Booking Details'[Peak Hours Booked] + 'Facility Booking Details'[Non-Peak Hours Booked])/('Facility Booking Details'[Max Peak Hours]+'Facility Booking Details'[Max Non-Peak Hours]) |
| Utilisation by Zone (Non-Peak) | Utilisation of facility during non-peak hours; hardcoded to be used only for monthly analysis | Utilisation by Zone (Non-Peak) = 'Facility Booking Details'[Non-Peak Hours Booked]/'Facility Booking Details'[Max Non-Peak Hours] |
| Utilisation by Zone (Peak) | Utilisation of facility during peak hours; hardcoded to be used only for monthly analysis | Utilisation by Zone (Peak) = 'Facility Booking Details'[Peak Hours Booked]/'Facility Booking Details'[Max Peak Hours] |