**DOMAIN OF ATTRIBUTES:**

**Passenger:** (full name, phone number, CNIC, gender, seat number, age)

1. **full name : (**simple , single valued , not derived)
2. **Name :** full name
3. **Meaning:** name of passenger who booked ticket
4. **Data type:** short text
5. **Length :** -
6. **Format :** upper case letters
7. **Range:**  -
8. **Allowable value: -**
9. **Uniqueness:** no
10. **Null support**: no
11. **Phone number:** (simple , single valued , not derived)
12. **Name :** phone number
13. **Meaning:** phone number of passenger that is in use.
14. **Data type:** number
15. **Length :** 12
16. **Format :** 0000-0000000
17. **Range:**  -
18. **Allowable value:**  -
19. **Uniqueness:** unique
20. **Null support**: no
21. **CNIC:** (simple , single , not derived)
22. **Name:** CNIC
23. **Meaning:** id number of the passenger
24. **Data type:** number
25. **Length:** 15
26. **Format:** 00000-0000000-0
27. **Range:** -
28. **Allowable value:** -
29. **Uniqueness:** yes
30. **Null support:** yes
31. **Gender:** (simple , single , not derived)
32. **Name:** gender
33. **Meaning:** male / female (type of passenger)
34. **Data type:** short text
35. **Length:** -
36. **Format:** -
37. **Range:** -
38. **Allowable value:** male or female
39. **Uniqueness:** no
40. **Null support:** yes
41. **Seat number:**( composite , single value , not derived)
42. **Name:** seat number
43. **Meaning:** number of seat allotted to passenger
44. **Data type:** text
45. **Length: 6**
46. **Format:** L-00000
47. **Range:** 0-9 / a-c
48. **Allowable value:**  -
49. **Uniqueness:**  yes
50. **Null support:** no
51. **Age:** (simple , single value , not derived)
52. **Name:** age
53. **Meaning:** age of passenger
54. **Data type:** numbe**r**
55. **Length:** -
56. **Format:** -
57. **Range: -**
58. **Allowable value: -**
59. **Uniqueness:** no
60. **Null support:** yes

**TRAIN: (**train name, **train id**, from station, to station, arrival time, departure time, arrival date, departure date, no of seats)

**Train name:** secondary key (candidates) (alternative key)

**Train id:** primary key(candidates)

**From station:** secondary key

**To station:** secondary key

**Arrival time:** secondary key

**Departure time:** secondary key

**Arrival date:** secondary key

**Departure date:** secondary key

**No of Seats:** secondary key

1. **Train name: (**simple , single , not derived)
2. **Name :**train name
3. **Meaning: every** train in the station have the specific name we usually specify by it.
4. **Data type :**character
5. **Length:** 255
6. **Format:** N/A
7. **Range :**A-Z character
8. **Allowable values:** N/A
9. **Uniqueness :**yes
10. **Null support:** No
11. **From station (**simple , single , not derived)
12. **Name :**from station
13. **Meaning:** arrival or departure of train from the station
14. **Data type :**text
15. **Length:** N/A
16. **Format:** N/A**.**
17. **Range:-** N/A
18. **Allowable values:-** N/A
19. **Uniqueness :**yes
20. **Null support :**no
21. **To station (**simple , multi value , not derived)
22. **Name :**to station
23. **Meaning :**departure and arrival of train from the station
24. **Data type :**text
25. **Length:-** N/A
26. **Format:-** N/A
27. **Range:-** N/A
28. **Allowable values:-** N/A
29. **Uniqueness :**yes
30. **Null support :**no
31. **Train id:** (composite , single valued , not derived)
32. **Name :**train id
33. **Meaning :**every train have the specific id from which we usually secify it
34. **Data type :**,number
35. **Length:**12
36. **Format:**999-999999-999
37. **Range:**0-9
38. **Allowable values**:{0,1,2,3,4,5,6,7,8,9}
39. **Uniqueness :**yes
40. **Null support :**no
41. **No of Seats (**composite , multi value , not derived)
42. **Name :**no of seats
43. **Meaning :**the number of seats in train let people know about the seating structure
44. **Data type :**text
45. **Length:**6
46. **Format:**L-00000
47. **Range:**0-9,A-Z character
48. **Allowable values :** N/A
49. **Uniqueness :** yes
50. **Null support :**no
51. **Arrival time (**simple , single , derived from to station and from station)
52. **Name :**arrival time
53. **Meaning :**the time in which the train arrives
54. **Data type :**text
55. **Length:**4
56. **Format:**00:00
57. **Range:**0-9
58. **Allowable values**: N/A
59. **Uniqueness :**no
60. **Null support :**no
61. **Departure time (**composite , single , derived from to station and from station)
62. **Name :**departure time
63. **Meaning :**time in which train depart the station
64. **Data type :**text
65. **Length:**4
66. **Format:**00:00
67. **Range**:0-9
68. **Allowable values**: N/A
69. **Uniqueness :**no
70. **Null support :**no
71. **Arrival date (**composite , multi value , not derived)
72. **Name :**Arrival date
73. **Meaning :**date in which train arrives the station
74. **Data type :**text
75. **Length:**8
76. **Format:**09/09/0000
77. **Range:**0-9
78. **Allowable values**: N/A
79. **Uniqueness :**no
80. **Null support :**no
81. **Departure date (**composite , multi value , not derived)
82. **Name :**departure date
83. **Meaning :**date in which train depart at the station
84. **Data type :**text
85. **Length:**8
86. **Format:**09/09/0000
87. **Range:**0-9
88. **Allowable values**: N/A
89. **Uniqueness :**no
90. **Null support :**no

**TICKET:** (Ticket id, Seat No, Passenger Name, from station, To Station, class)

1. **ID:** (composite , single value , not derived)
2. **Name :**Ticket id
3. **Meaning :"**every ticket will have its own ID**"**
4. **Datatype** :number
5. **Length**:12
6. **Forma**t: 999-999999-999(station from no. - 000000- station To no.)
7. **Range**:0-9
8. **Allowable valu**e:-----
9. **Uniqueness** :yes
10. **Null support**: no

1. **Seat no:** (composite , single value , not derived)
2. **Name** :Seat No
3. **Meaning**: seat no of a passenger will be mention on ticket"
4. **Datatype** :text
5. **Length**: 6
6. **Format**:L-00000(class-00000)
7. **Range**:0-9,A-C
8. **Allowable Value**:----
9. **Uniqueness** : "yes"
10. **Null Support** :"No"

1. **Passenger Name:** (composite , single value , not derived)
2. **Name** :Pass name
3. **Meaning** :"passengers name on ticket"
4. **Datatype** : Long text
5. **Length**:---
6. **format**: First name middle name last name)
7. **Range**: A-Z
8. **Allowable values**:-----
9. **Uniqueness** :No
10. **Null support**: No

1. **From station**: (simple , single , not derived)
2. **Name**: From station
3. **Meaning** :"departure of train from which station"
4. **Datatype** :Text
5. **Length**:----
6. **Format**: station No-station name
7. **Range**:-----
8. **Allowable values**:-----
9. **Uniqueness** :yes
10. **Null support**: yes

1. **To station**: (simple , multi value , not derived)
2. **Name** : To station
3. **Meaning** :"Arrival of train from which station"
4. **Datatype** :Text
5. **Length**:----
6. **Format**: station No-station name
7. **Range**:-----
8. **Allowable values**:-----
9. **Uniqueness** :yes
10. **Null support**: yes

1. **CLASS** : (simple , multi value , derived from seat no)
2. **Name**: ticket class
3. **Meaning** :"which type of ticket a passenger will take"
4. **Datatype** :text
5. **Length**: ---
6. **Format** : L
7. **Range** :A-C
8. **Allowable values**:{economy, business, first}
9. **Uniqueness** : yes
10. **Null support** :yes

**Employees:**

1. **First Name: (**Simple**,** Single Valued, Derived)
2. Name: First name
3. Meaning: Every employee will have his name recorded in database
4. Data Type: Short Text
5. Length: 10
6. Format: ??????????
7. Range: A-Z
8. Allowable values: N/A
9. Uniqueness: “No”
10. Null Support: “No”
11. **Last Name: (**Simple**,** Single Valued**,** Derived)

1. Name: Last name
2. Meaning: Every employee will have his name recorded in database
3. Data Type: Short Text
4. Length: 10
5. Format: ??????????
6. Range: A-Z
7. Allowable values: N/A
8. Uniqueness: “No”
9. Null Support: “No”
10. **CNIC: (**Simple**,** Single Valued**,** Not Derived\_
11. Name: The Computerized National Identity card number (CNIC)
12. Meaning: Every employee will have his own unique Id number
13. Data Type: Number
14. Length: 15
15. Format: 99999-9999999-9
16. Range: 1-15
17. Allowable values: N/A
18. Uniqueness: “Yes”
19. Null Support: “No”
20. **Qualification:** (Simple, Single Valued, Not Derived)
21. Name: Qualification
22. Meaning: Every employee should meet the qualification requirement for his particular job
23. Data Type: Short Text
24. Length: 15
25. Format: N/A
26. Range: A-Z
27. Allowable values: N/A
28. Uniqueness: “No”
29. Null Support: “No”
30. **Experience: (**Simple**,** Single Valued**,** Not Derived)
31. Name: Experience
32. Meaning: Every employee should have the experience required for his particular job
33. Data Type: Short Text
34. Length: 7
35. Format: 99LLLLL
36. Range: N/A
37. Allowable values: N/A
38. Uniqueness: “No”
39. Null Support: “No”
40. **Designation: (**Simple**,** Single Valued**,** Not Derived)
41. Name : Designation
42. Meaning : For letting know employee’s status at work
43. Data Type: Short Text
44. Length: 20
45. Format: N/A
46. Range: A-Z
47. Allowable values: N/A
48. Uniqueness: “No”
49. Null Support: “No”
50. **Mobile Number: (**Composite**,** Single Valued**,** Not Derived)
51. Name : Mobile Number
52. Meaning: This will be required for contact purpose
53. Data Type: Number
54. Length: 13
55. Format: 00-9999999999
56. Range: 0-9
57. Allowable values: N/A
58. Uniqueness: “Yes”
59. Null Support: “No”
60. **E-mail:** (Composite, Multi Valued, Not Derived)
61. Name : Email
62. Meaning: This will be required for contact purpose
63. Data Type: Short Text
64. Length: 50
65. Format: N/A
66. Range: N/A
67. Allowable values: N/A
68. Uniqueness: “Yes”
69. Null Support: “Yes”
70. **Gender: (**Simple**,** Single Valued**,** Not Derived)
71. Name : Gender
72. Meaning :Employee’s Type
73. Data Type: Short Text
74. Length: 6
75. Format: ??LLLL OR LLLL
76. Range: N/A
77. Allowable values: {female, Male}
78. Uniqueness: “No”
79. Null Support: “Yes”
80. **Age: (**Simple**,** Single Valued**,** Derived)
81. Name : Age
82. Meaning : For Employee’s Info
83. Data Type: Number
84. Length: 3
85. Format: 999
86. Range: 0-9
87. Allowable values: {0,1,2,3,4,5,6,7,8,9}
88. Uniqueness: “No”
89. Null Support: “No”
90. **Serial Number: (**Simple**,** Single Valued**,** Not Derived)
91. Name : Serial Number
92. Meaning :Unique serial number is assigned to each employee so we can identify him easily
93. Data Type: Number
94. Length: 5
95. Format: 99999
96. Range: 0-9
97. Allowable values: N/A
98. Uniqueness: “Yes”
99. Null Support: “No”
100. **D.O.B: (**Composite**,** Multi Valued**,** Not Derived)
101. Name : D.O.B
102. Meaning : For Employee’s additional info
103. Data Type: Short Text
104. Length: 20
105. Format: N/A
106. Range: 0-9 , A-Z
107. Allowable values: N/A
108. Uniqueness: “No”
109. Null Support: “No”
110. **Address: (**Composite**,** Multi Valued**,** Not Derived)
111. Name : Address
112. Meaning : For Employee’s contact information
113. Data Type: Short Text
114. Length: 50
115. Format: N/A
116. Range: N/A
117. Allowable values: N/A
118. Uniqueness: “No”
119. Null Support: “No”

Employee( First name, Last Name, CNIC, Qualification, Experience, Serial Number Age, Gender, E-mail, Address, Designation, Mobile Number)

Secondary: Age, Gender, Designation, First Name, Last Name

**Candidates:**

Primary (Alternate): CNIC

Primary: Serial Number

**Station:**

1. **Name of station: (**Simple, Single valued, Not derived)

|  |  |
| --- | --- |
| 1. **Name:** | Name of station |
| 1. **Meaning:** | To list name of stations because we usually identify stations by their names. |
| 1. **Data Type:** | Characters |
| 1. **Length:** | 255 |
| 1. **Format:** | N/A |
| 1. **Range:** | All Upper case letters |
| 1. **Allowable Values:** | N/A |
| 1. **Uniqueness:** | Yes |
| 1. **Null Support:** | No |

1. **No of train’s starts: (**Simple, Single valued, Not derived)

|  |  |
| --- | --- |
| 1. **Name:** | No of trains starts |
| 1. **Meaning:** | How many trains will start from this station to begin their journey every day. |
| 1. **Data Type:** | Numbers |
| 1. **Length:** | 3 |
| 1. **Format:** | 099 |
| 1. **Range:** | 0 to 999 |
| 1. **Allowable Values:** | N/A |
| 1. **Uniqueness:** | No |
| 1. **Null Support:** | yes |

1. **No of trains halt: (**Simple**,** Single valued**,** Not derived)

|  |  |
| --- | --- |
| 1. **Name:** | No of trains halt |
| 1. **Meaning:** | How many station will halt/stop on that station every day and then continue their journey. |
| 1. **Data Type:** | Number |
| 1. **Length:** | 3 |
| 1. **Format:** | 099 |
| 1. **Range:** | 0 to 999 |
| 1. **Allowable Values:** | N/A |
| 1. **Uniqueness:** | No |
| 1. **Null Support:** | Yes |
|  |  |

1. **No of employee: (**Simple**,** Single valued**,** Not derived)

|  |  |
| --- | --- |
| 1. **Name:** | No of employee |
| 1. **Meaning:** | Total number of employees working on one specific station (this includes all status employee). |
| 1. **Data Type:** | Number |
| 1. **Length:** | 5 |
| 1. **Format:** | 09999 |
| 1. **Range:** | 1 to 99999 |
| 1. **Allowable Values:** | N/A |
| 1. **Uniqueness:** | No |
| 1. **Null Support:** | No |

1. **No of booths: (**Simple, Single valued**,** Not derived)

|  |  |
| --- | --- |
| 1. **Name:** | No of booths |
| 1. **Meaning:** | Number of booths in one station (example: ticket booth, helping booth or security booth etc.) |
| 1. **Data Type:** | Number |
| 1. **Length:** | 3 |
| 1. **Format:** | 099 |
| 1. **Range:** | 1 to 999 |
| 1. **Allowable Values:** | N/A |
| 1. **Uniqueness:** | No |
| 1. **Null Support:** | No |

1. **Address: (**Simple, Multi valued, not derived)

|  |  |
| --- | --- |
| 1. **Name:** | Address |
| 1. **Meaning:** | Address of the station where station is located exactly so that anyone can reach there. |
| 1. **Data Type:** | Characters, numbers |
| 1. **Length:** | 85 |
| 1. **Format:** | District, city, province |
| 1. **Range:** | N/A |
| 1. **Allowable Values:** | N/A |
| 1. **Uniqueness:** | Yes |
| 1. **Null Support:** | No |

1. **City: (**Simple**,** Single valued**,** Derived (from address attribute))

|  |  |
| --- | --- |
| 1. **Name:** | City |
| 1. **Meaning:** | City in which station is located |
| 1. **Data Type:** | Characters |
| 1. **Length:** | 50 |
| 1. **Format:** | N/A |
| 1. **Range:** | All lower case letters |
| 1. **Allowable Values:** | N/A |
| 1. **Uniqueness:** | No |
| 1. **Null Support:** | No |

1. **Province: (**Simple**,** Single valued**,** Derived (from address attribute))

|  |  |
| --- | --- |
| 1. **Name:** | Province |
| 1. **Meaning:** | Province in which station is located |
| 1. **Data Type:** | Characters |
| 1. **Length:** | 50 |
| 1. **Format:** | N/A |
| 1. **Range:** | All lower case letters |
| 1. **Allowable Values:** | N/A |
| 1. **Uniqueness:** | No |
| 1. **Null Support:** | No |

1. **No of tracks: (**Simple**,** Single valued**,** Not derived)

|  |  |
| --- | --- |
| 1. **Name:** | No of tracks |
| 1. **Meaning:** | Number of total tracks present in one station on which trains can park. |
| 1. **Data Type:** | Numbers |
| 1. **Length:** | 3 |
| 1. **Format:** | 099 |
| 1. **Range:** | 1 to 999 |
| 1. **Allowable Values:** | N/A |
| 1. **Uniqueness:** | No |
| 1. **Null Support:** | No |

1. **Owner: (**Simple**,** Single valued**,** Not derived)

|  |  |
| --- | --- |
| 1. **Name:** | Owner |
| 1. **Meaning:** | Who is the owner of specific station |
| 1. **Data Type:** | Characters |
| 1. **Length:** | 225 |
| 1. **Format:** | N/A |
| 1. **Range:** | All lower case letters |
| 1. **Allowable Values:** | {ministry of railway, government of Pakistan} |
| 1. **Uniqueness:** | No |
| 1. **Null Support:** | No |

1. **Inquiry phone number: (**Simple, Single valued, Not derived)

|  |  |
| --- | --- |
| 1. **Name:** | Inquiry phone number |
| 1. **Meaning:** | The phone number on which any person can call to get detail about the train timings or station or complain or any other kind of information. |
| 1. **Data Type:** | Numbers |
| 1. **Length:** | 11 |
| 1. **Format:** | 000-99999999 |
| 1. **Range:** | 000-00000000 to 999-99999999 |
| 1. **Allowable Values:** | N/A |
| 1. **Uniqueness:** | Yes |
| 1. **Null Support:** | No |

1. **No of platform in use: (**Simple, Single valued, Not derived)

|  |  |
| --- | --- |
| 1. **Name:** | No of platform in use |
| 1. **Meaning:** | The number of platform in use from which passengers can get into or get out of the train and can have convenient access to train easily. |
| 1. **Data Type:** | number |
| 1. **Length:** | 3 |
| 1. **Format:** | 099 |
| 1. **Range:** | 1 to 999 |
| 1. **Allowable Values:** | N/A |
| 1. **Uniqueness:** | No |
| 1. **Null Support:** | No |

**Keys:**

STATION(Name of station, No of train’s starts, No of trains halt, No of employee, No of booths, Address, City, Province, No of tracks, Owner, Inquiry phone number, No of platform in use)

|  |  |
| --- | --- |
| **Name of station** | Primary key |
| **No of train’s starts** | Secondary key |
| **No of trains halt** | Secondary key |
| **No of employee** | Secondary key |
| **No of booths** | Secondary key |
| **Address** | Secondary key |
| **City** | Secondary key |
| **Province** | Secondary key |
| **No of tracks** | Secondary key |
| **Owner** | Secondary key |
| **Inquiry phone number** | Secondary key |
| **No of platform in use** | Secondary key |