

## **Port-Tour Available Report**

### **UNF**

PORT(port\_code, port\_name, country\_code, country\_name, (month, avg\_high, avg\_low), (tour\_num, tour\_name, tour\_descrip, hours\_req, tour\_cost\_per\_person, wheel\_chair\_access, tour\_avil, start\_time))

### **1NF**

PORT(port\_code, port\_name, country\_code, country\_name )

PORT\_TEMPERATURE(port\_code, month, avg\_high, avg\_low)

PORT\_TOUR(tour\_num, port\_code, tour\_name, tour\_descrip, hours\_req, tour\_cost\_per\_person, wheel\_chair\_access, tour\_avil, start\_time)

Partial Dependencies:

No Partial Dependencies

### **2NF**

PORT(port\_code, port\_name, country\_code, country\_name )

PORT\_TEMPERATURE(port\_code, month, avg\_high, avg\_low)

PORT\_TOUR(tour\_num, port\_code, tour\_name, tour\_descrip, hours\_req, tour\_cost\_per\_person, wheel\_chair\_access, tour\_avil, start\_time)

Transitive Dependencies:

tour\_name → tour\_descrip

country\_code → country\_name

### 3NF

PORT(port\_code, port\_name, country\_code)

PORT\_TEMPERATURE(port\_code, month, avg\_high, avg\_low)

PORT\_TOUR(tour\_num, port\_code, tour\_name, hours\_req,  
tour\_cost\_per\_person, wheel\_chair\_access, tour\_avil, start\_time)

TOUR(tour\_name, tour\_descrip)

COUNTRY(country\_code, country\_name)

Full Dependencies:

port\_code → port\_name, country\_code

port\_code, month → avg\_high, avg\_low

tour\_num, port\_code → tour\_name, hours\_req, tour\_cost\_per\_person,  
wheel\_chair\_access, tour\_avil, start\_time

tour\_name → tour\_descrip

country\_code → country\_name

## **Port-Tour Participant Report**

### **UNF**

PORT\_TOUR(port\_code, tour\_num, tour\_name, tour\_date, start\_time,  
(pas\_id,pas\_fname, pas\_lname , principal\_spoken\_language, cruise\_id,  
cruise\_name, payment\_received ))

### **1NF**

PORT\_TOUR (port\_code, tour\_num, tour\_name, tour\_date, start\_time)

TOUR\_REPORT( pas\_id,pas\_fname, pas\_lname,  
principal\_spoken\_language, cruise\_id, cruise\_name, payment\_received,  
port\_code, tour\_num, tour\_date)

Partial dependencies :

$\text{pas\_id} \rightarrow \text{pas\_fname}, \text{pas\_lname}$

### **2NF**

PORT\_TOUR(port\_code, tour\_num, tour\_name, tour\_date, start\_time)

TOUR\_REPORT( pas\_id ,principal\_spoken\_language, cruise\_id,  
cruise\_name, payment\_received,port\_code, tour\_num, tour\_date)

PASSENGER(pas\_id, pas\_fname,pas\_lname)

Transitive dependencies :

$\text{cruise\_id} \rightarrow \text{cruise\_name}$

### **3NF**

PORT\_TOUR(port\_code, tour\_num, tour\_name, tour\_date, start\_time)

TOUR\_REPORT( pas\_id ,principal\_spoken\_language, cruise\_id,  
payment\_received, port\_code, tour\_num, tour\_date)

PASSENGER(pas\_id, pas\_fname, pas\_lname)

CRUISE(cruise\_id , cruise\_name )

Full dependencies :

port\_code, tour\_num, tour\_date → tour\_name, tour\_start\_time

pas\_id , port\_code , tour\_num , tour\_date → principal\_spoken\_language,

payment\_received , cruise\_id

pas\_id → pas\_fname, pas\_lname

cruise\_id → cruise\_name

Attribute Synthesis:

Collected 3NF

1. PORT\_TOUR(port\_code, tour\_num, tour\_name, tour\_date, start\_time)
2. TOUR\_REPORT( pas\_id , principal\_spoken\_language, cruise\_id, payment\_received, port\_code, tour\_num, tour\_date)
3. PASSENGER(pas\_id, pas\_fname, pas\_lname)
4. CRUISE(cruise\_id , cruise\_name )
5. PORT(port\_code, port\_name, country\_code)
6. PORT\_TEMPERATURE(port\_code, month, avg\_high, avg\_low)
7. PORT\_TOUR(tour\_num, port\_code, tour\_name, hours\_req, tour\_cost\_per\_person, wheel\_chair\_access, tour\_avil, start\_time)
8. TOUR(tour\_name, tour\_descrip)
9. COUNTRY(country\_code, country\_name)

Combine 1 and 7

Final 3NF

PORT\_TOUR(port\_code,tour\_num, tour\_date, tour\_name, pt\_hours\_req,  
pt\_start\_time, tour\_cost\_per\_person, pt\_wheel\_chair\_access )

COUNTRY(country\_code, country\_name)

TOUR(tour\_name, tour\_descrip)

PORT\_TEMPERATURE(port\_code, month, port\_temp\_avg\_high,  
port\_temp\_avg\_low)

PORT(port\_code, port\_name, country\_code)

CRUISE(cruise\_id , cruise\_name )

PASSENGER(pas\_id, pas\_fname,pas\_lname)