**Appendix A**

**UNF**

Carnival(date, location, director)

Carnival\_Event( event\_name, \*date)

Sponsor(s\_name, isNaming, amount, contact, phone)

**1NF**

Carnival(date, location, director)

Carnival\_Event( area, \*date)

Sponsor(s\_name, isNaming, amount, contact, phone)

**2NF**

Carnival(date, location, director)

Carnival\_Event( area, \*date)

Sponsor(s\_name, isNaming, amount, contact, phone)

**3NF**

Carnival(date, location, director)

Carnival\_Event( area, \*date)

Sponsor(s\_name, isNaming, amount, contact, phone)

**Appendix B**

**UNF**

Competitor(c\_number, name, gender, birthday, email, isStudent, mobile, Medicial(condition, area), Emergency(name, phone\_number, relationship),Guardian(name, phone\_number))

**1NF**

Competitor(c\_number, name, gender, birthday, email, isStudent, mobile, condition, area, ename, ephone\_number, relationship, gname, gphone\_number)

c\_number -> condition TRANSITIVE

c\_number -> ename TRANSITIVE

c\_number -> relationship TRANSITIVE

c\_number -> gname TRANSITIVE

**2NF**

Competitor(c\_number, name, gender, birthday, email, isStudent, mobile, condition, area, ename, ephone\_number, relationship, gname, gphone\_number)

**3NF**

Competitor(c\_number,\*area, \*ephone\_number, \*gphone\_number, cname, gender, birthday, email, isStudent, mobile)

Medical(area, condition)

Emergency(ephone\_number, ename, relationship)

Guardian(gphone\_number, gname)

**Appendix C**

**UNF**

Entry(e\_number, \*cnumber, \*event\_name, cname, \*t\_name)

Team(t\_name, \*date)

Charity(ch\_name)

**1NF**

Entry(enumber, \*cnumber, cname, event\_name, \*t\_name)

Team(t\_name, \*date)

Charity(ch\_name)

cnumber -> cname TRANSITIVE

**2NF**

Entry(enumber,\* cnumber, cname, \*event\_name,\* t\_name)

Team(t\_name, \*date)

Charity(ch\_name)

**3NF**

Entry(enumber,\* cnumber, \*event\_name, \*t\_name)

Team(t\_name, \*date)

Charity(ch\_name)

**Appendix D**

**UNF**

Order(order\_number, order\_date, date, location, competitor(number, name), merchandise(good1, good2), total\_cost)

**1NF**

Order(order\_number, order\_date, date, location, cnumber, cname, total\_cost, delivery)

Merchandise(order\_number, \*item\_code, item\_description, cost, qty,line\_cost)

date -> location TRANSITIVE

cnumber -> cname TRANSITIVE

order\_number, item\_code -> item\_description, cost PARTIAL

**2NF**

Order(order\_number, order\_date, date, location, cnumber, cname, total\_cost, delivery)

Buy(\*order\_number, \*item\_code ,line\_cost)

Merchandise (item\_code, item\_description, cost)

**3NF**

Order(order\_number, order\_date, date, cnumber, total\_cost, delivery)

Buy(\*order\_number, \*item\_code ,line\_cost)

Merchandise (item\_code, item\_description, cost)

**Appendix E**

**UNF**

Order(order\_number, order\_date, date, location, volunteer(volunteer\_id, vname), merchandise(good1, good2), total\_cost)

**1NF**

Order(order\_number, order\_date, date, location, volunteer\_id, vname, total\_cost, delivery)

Merchandise(order\_number, \*item\_code, item\_description, cost, qty,line\_cost)

date -> location TRANSITIVE

vnumber -> vname TRANSITIVE

order\_number, item\_code -> item\_description, cost PARTIAL

**2NF**

Order(order\_number, order\_date, date, location, vnumber, vname, total\_cost, delivery)

Buy(\*order\_number, \*item\_code ,line\_cost)

Merchandise (item\_code, item\_description, cost)

**3NF**

Order(order\_number, order\_date, date, vnumber, total\_cost, delivery)

Buy(\*order\_number, \*item\_code ,line\_cost)

Merchandise (item\_code, item\_description, cost)

Volunteer(vnumber, vname)

**Final Relations:**

Carnival(date, location, director)

Carnival\_Event( area, \*date)

Sponsor(s\_name, isNaming, amount, contact, phone)

Competitor(c\_number,\*area, \*ephone\_number, \*gphone\_number, cname, gender, birthday, email, isStudent, mobile)

Medical(area, condition)

Emergency(ephone\_number, ename, relationship)

Guardian(gphone\_number, gname)

Entry(enumber,\* cnumber, \*event\_name, \*t\_name)

Team(t\_name, \*date)

Charity(ch\_name)

Order(order\_number, order\_date, date, \*cnumber,\*vnumber, total\_cost, delivery)

Buy(\*order\_number, \*item\_code ,line\_cost)

Merchandise (item\_code, item\_description, cost)

Volunteer(vnumber, vname)