**Appendix A**

**UNF**

Carnival(carnival\_date, director, location, event(event1, event2, event3...), sponsors(sponsor1, sponsor2...))

**1NF**

Carnival(carnival\_date, location, director)

Event( event\_name, \*carnival\_date)

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

**2NF**

Carnival(carnival\_date,, director)

Event( event\_name, \*carnival\_date)

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

**3NF**

Carnival(carnival\_date,, director)

Event( event\_name, \*carnival\_date)

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

**Appendix B**

**UNF**

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

**1NF**

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

**2NF**

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

**3NF**

Competitor(cnumber, cname, gender, birthday, email, isStudent, mobile, condition, area, ename, ephone, relationship, gname, gphone)

**Appendix C**

**UNF**

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

**1NF**

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

**2NF**

enumber, cnumber -> cname PARTIAL

Entry(enumber,\* cnumber, event, teamname)

**3NF**

Entry(enumber,\* cnumber, event, teamname)

**Appendix D**

**UNF**

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

**1NF**

Order(order\_number, order\_date, carnival\_date, carnival\_location, cnumber, cname, total\_cost, delivery)

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

Carnival\_date -> carnival\_location TRANSITIVE

Cnumber -> cname TRANSITIVE

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

**2NF**

Order(order\_number, order\_date, carnival\_date, carnival\_location, cnumber, cname, total\_cost, delivery)

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

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

**3NF**

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

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

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

**Appendix E**

**UNF**

Order(order\_number, order\_date, carnival\_date, carnival\_location, volunteer(number, name), merchandise(good1, good2), total\_cost)

**1NF**

Order(order\_number, order\_date, carnival\_date, carnival\_location, vnumber, vname, total\_cost, delivery)

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

carnival\_date -> carnival\_location TRANSITIVE

vnumber -> vname TRANSITIVE

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

**2NF**

Order(order\_number, order\_date, carnival\_date, carnival\_location, vnumber, vname, total\_cost, delivery)

Merchandise(order\_number, item\_code ,line\_cost)

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

**3NF**

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

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

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

Volunteer(vnumber, vname)

**Final Relations:**

Carnival(carnival\_date, location, director)

Event( event\_name, \*carnival\_date)

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

Competitor(cnumber, cname, gender, birthday, email, isStudent, mobile, condition, area, ename, ephone, relationship, gname, gphone)

Entry(enumber,\* cnumber, event, teamname)

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

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

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

Volunteer(vnumber, vname)