**1 TABLE**: reservation

reservation\_id-> reader\_id, book\_id, reservation\_date, rsrv\_status\_id

**2 TABLE:** book\_category

book\_id->category\_name

**3 TABLE:** person

person\_id->place\_of\_work

**4 TABLE**: author

author\_id->first\_name, last\_name

**5 TABLE**: reader\_inf

reader\_id-> book\_id, last\_name, first\_name, status\_id, joined\_date, issued\_by

**6 TABLE**: reader\_phone\_number

reader\_id->phone\_number

**7 TABLE**: loan

loan\_id->book\_id, reader\_id, returned\_date, loan\_date

**8 TABLE:** fine

fine\_id-> fine\_date, reader\_id, fine\_amount, loan\_id

**9 TABLE**: fine\_payment

payment\_id -> , payment\_date, reader\_id, payment\_amount

**10 TABLE**: reservation\_status

status\_id->value

**11 TABLE**: staff\_contacts

staff\_id -> telephone, city, address

**12 TABLE**:author\_book

author\_id->book\_id

book\_id->author\_id

**13 TABLE**: student

student\_id->place\_of\_study, year\_of\_graduate, gender, student\_class, student\_name, student\_surname

**14 TABLE**:member\_status

m\_status\_id->value

**15 TABLE**:book\_inf

book\_id-> shelf\_id, book\_title, language, copies

**16 TABLE:**staff

staff\_id -> staff\_name, gender

**17 TABLE:**shelf

shelf\_id->floor, bookshelf

**18 TABLE**:data\_of\_receipt

Book\_id->come\_date

**19 TABLE**:blacklist

Reader\_id->delete\_date

**20 TABLE:** archive

Reader\_name->reader\_surname, book\_title, joined\_date

NORMAZILATION

**1 TABLE**: reservation

reservation\_id->book\_id, reader\_id, reservation\_date, rsrv\_status\_id

Old Scheme: { reservation\_id ,book\_id, reader\_id, reservation\_date, rsrv\_status\_id}

2 NF New Scheme: { reservation\_id, reservation\_date, rsrv\_status\_id }

New Scheme: { reservation\_id, book\_id, reader\_id }

3 NF: reservation\_id-> rsrv\_status\_id , rsrv\_status\_id-> reservation\_date

reader\_id-> book\_id, book\_id-> reservation\_id

BCNF: reservation\_id-> rsrv\_status\_id , rsrv\_status\_id-> reservation\_date,**DURATION**

reader\_id-> book\_id, book\_id-> reservation\_id, **FOR HOW MANY DAYS**

**4 TABLE**: author

author\_id->first\_name, last\_name

Old Scheme: { author\_id, first\_name, last\_name }

2 NF New Scheme:{ author\_id, first\_name }

New Scheme: { author\_id, last\_name }

**5 TABLE**: reader\_inf

reader\_id-> book\_id, last\_name, first\_name, status\_id, joined\_date, issued\_by

Old Scheme: { reader\_id, book\_id, last\_name, first\_name, status\_id, joined\_date, issued\_by}

2 NF New Scheme:{ reader\_id, book\_id, last\_name, first\_name }

New Scheme: { reader\_id, status\_id, joined\_date, issued\_by }

3 NF: reader\_id->book\_id, book\_id-> last\_name, first\_name

reader\_id->status\_id, status\_id-> joined\_date, issued\_by

BCNF: reader\_id->book\_id, book\_id-> last\_name, first\_name, UNIVERSITY EMAIL

reader\_id->status\_id, status\_id-> joined\_date, issued\_by, HAVE A FINE?

**7 TABLE**: loan

loan\_id->book\_id, reader\_id, returned\_date, loan\_date

Old Scheme: { loan\_id, book\_id, reader\_id, returned\_date, loan\_date}

2 NF New Scheme:{ loan\_id, reader\_id }

New Scheme: { loan\_id, book\_id, returned\_date, loan\_date }

3 NF: loan\_id-> book\_id, returned\_date, returned\_date->loan\_date

BCNF: loan\_id-> book\_id, returned\_date, returned\_date->loan\_date, HOW MANY DAY LOAN

**8 TABLE:** fine

fine\_id-> fine\_date, reader\_id, fine\_amount, loan\_id

Old Scheme: { fine\_id, fine\_date, reader\_id, fine\_amount, loan\_id}

2 NF New Scheme: { fine\_id, fine\_date, fine\_amount }

New Scheme: { fine\_id, reader\_id, loan\_id}

3 NF: fine\_id->fine\_date, fine\_date ->fine\_amount

fine\_id->reader\_id, fine\_id->loan\_id

BCNF: fine\_id->fine\_date, fine\_date ->fine\_amount, PHONE NUMBER

fine\_id->reader\_id, fine\_id->loan\_id, LOAN\_DATE

**9 TABLE**: fine\_payment

payment\_id -> payment\_date, reader\_id, payment\_amount

Old Scheme: { payment\_id, payment\_date, reader\_id, payment\_amount}

2 NF New Scheme:{payment\_id, payment\_date, payment\_amount }

New Scheme: { payment\_id, reader\_id }

3 NF: payment\_id->payment\_date, payment\_date->payment\_amount

BCNF: payment\_id->payment\_date, payment\_date->payment\_amount, BONUS

**11 TABLE**: staff\_contacts

staff\_id -> telephone, city, address

Old Scheme: { staff\_id, telephone, city, address}

2 NF New Scheme:{ staff\_id, telephone }

New Scheme: { staff\_id, city, address }

3 NF: staff\_id->city, city->address

BCNF: staff\_id->city, city->address, INDEX

**13 TABLE**: student

student\_id->place\_of\_study, year\_of\_graduate, gender, student\_class, student\_name, student\_surname

Old Scheme: { student\_id,place\_of\_study, year\_of\_graduate, gender, student\_class, student\_name, student\_surname}

2 NF New Scheme:{ student\_id, place\_of\_study, year\_of\_graduate, student\_class}

New Scheme: { student\_id, student\_name, student\_surname, gender}

3NF: student\_id->place\_of\_study, year\_of\_graduate, year\_of\_graduate->student\_class;

student\_id->student\_name, student\_surname, student\_id->gender

BCNF: student\_id->place\_of\_study, year\_of\_graduate, year\_of\_graduate->student\_class, DEGREE

student\_id->student\_name, student\_surname, STUDENT\_EMAIL, student\_id->gender

**15 TABLE**:book\_inf

book\_id-> shelf\_id, book\_title, language, copies

Old Scheme: { book\_id, shelf\_id, book\_title, language, copies}

2 NF New Scheme:{ book\_id, shelf\_id, copies }

New Scheme: { book\_id , book\_title, language }

3 NF: book\_id->shelf\_id, book\_id-> copies

book\_id->book\_title, book\_title->language

BCNF: book\_id->shelf\_id,NUMBER\_OF\_SHELF, book\_id-> copies

book\_id->book\_title, book\_title->language, NUMBER PAGE

**16 TABLE:**staff

staff\_id -> staff\_name, gender

Old Scheme: { staff\_id, staff\_name, gender}

2 NF New Scheme:{ staff\_id, staff\_name }

New Scheme: { staff\_name, gender }

**17 TABLE:**shelf

shelf\_id->floor, bookshelf

Old Scheme: { shelf\_id, floor, bookshelf}

2 NF New Scheme:{ shelf\_id, bookshelf }

New Scheme: {floor, bookshelf }

**20 TABLE:** archive

Reader\_name->reader\_surname, book\_title, joined\_date

Old Scheme: { reader\_name, reader\_surname, book\_title, joined\_date}

2 NF New Scheme:{ reader\_name, reader\_surname }

New Scheme: { reader\_name, book\_title, joined\_date }

3 NF: reader\_name-> book\_title, book\_title->joined\_date

BCNF: reader\_name-> book\_title, book\_title->joined\_date, ISSUED DATE