Q1. Created in Author.java

Q2. CRUD OPERATIONS:

In hibernate.cfg.xml set the property "**hibernate.hbm2ddl.auto**" as create

CRUD (CREATE)

```
SessionFactory sessionFactory= new
Configuration().configure().buildSessionFactory();
Session session = sessionFactory.openSession();
session.beginTransaction();


Author author1 =new Author();

author1.setAuth_id(1);
author1.setFirstname("payal");
author1.setLastname("nigam");
author1.setAge(22);
session.save(author1);

Author author2 =new Author();
author2.setAuth_id(2);
author2.setFirstname("shreyansh ");
author2.setLastname("sahu");
author2.setAge(21);
session.save(author2);

Author author3 =new Author();
author3.setAuth_id(3);
author3.setFirstname("pushkar");
author3.setLastname("singh");
author3.setAge(23);
session.save(author3);

Author author4 =new Author();
author4.setAuth_id(4);
author4.setFirstname("archit");
author4.setLastname("chauhan");
author4.setAge(20);
session.save(author4);

session.getTransaction().commit();

session.close();
sessionFactory.close();
```

CRUD (READ)

```
In hibernate.cfg.xml set the property "hibernate.hbm2ddl.auto"  as
create. (when no date is there in the database.)
```

In hibernate.cfg.xml set the property "**hibernate.hbm2ddl.auto**" as update. (when some date is there in the database.)

(Here lets assume that some data is there in database)


```
SessionFactory sessionFactory= new
Configuration().configure().buildSessionFactory();
Session session = sessionFactory.openSession();
session.beginTransaction();

Author author= session.get(Author.class,1);

session.getTransaction().commit();

session.close();
sessionFactory.close();
```


CRUD(UPDATE)

In hibernate.cfg.xml set the property "**hibernate.hbm2ddl.auto**" as create. (when no date is there in the database.)

In hibernate.cfg.xml set the property "**hibernate.hbm2ddl.auto**" as update. (when some date is there in the database.)

(Here lets assume some data is there in database)

```
SessionFactory sessionFactory= new
Configuration().configure().buildSessionFactory();
Session session = sessionFactory.openSession();
session.beginTransaction();

Author author5 =session.get(Author.class, 1);

author5.setFirstname("Pia");
session.update(author5);

session.getTransaction().commit();

session.close();
sessionFactory.close();
```


CRUD(DELETE)

In hibernate.cfg.xml set the property "**hibernate.hbm2ddl.auto**" as create. (when no date is there in the database.)

In hibernate.cfg.xml set the property "**hibernate.hbm2ddl.auto**" as update. (when some date is there in the database.)

(Here lets assume some data is there in database)

```java
SessionFactory sessionFactory= new
Configuration().configure().buildSessionFactory();
Session session = sessionFactory.openSession();
session.beginTransaction();

Author author5 =session.get(Author.class, 1);

session.delete(author5);



session.getTransaction().commit();

session.close();
sessionFactory.close();
```

Q3.

In Author.java make changes such as:

```java
Date dob;
```

Include java.util.date in Auhtor.java and java.sql.date in Application.java

Q4.

In hibernate.cfg.xml set the property "**hibernate.hbm2ddl.auto**" as update.

```java
Author author7 =new Author();

author7.setAuth_id(5);
author7.setFirstname("Himanshi");
author7.setLastname("gupta");
author7.setAge(26);
author7.setDob("18-12-1996");
session.save(author7);
```

```java
Author author8 =new Author();

author8.setAuth_id(6);
author8.setFirstname("Payal");
author8.setLastname("Nigam");
author8.setAge(22);
author8.setDob("22-06-1996");
session.save(author8);

Author author9 =new Author();

author9.setAuth_id(6);
author9.setFirstname("abcd");
author9.setLastname("efdd");
author9.setAge(28);
author9.setDob("22-01-1996");
session.save(author9);

Author author10 =new Author();

author10.setAuth_id(6);
author10.setFirstname("xyzz");
author10.setLastname("uuyt");
author10.setAge(23);
author10.setDob("02-06-1996");
session.save(author10);
```

Q5. In hibernate.cfg.xml set the property "**hibernate.hbm2ddl.auto**" as create-drop.

Q6. done in Author.java

Q7. In Author.java make changes such as:

   @Transient

   String **lastname**;

Q8. In Author.java make changes such as:

@Temporal(TemporalType.*DATE*)

Date **dob**;

Q9. In Author.java make changes such as:

FOR ID GENERATION BY IDENTITY STRATEGY

@Id @GeneratedValue(strategy = GenerationType.*IDENTITY*)

int auth_id ;

FOR ID GENERATION BY TABLE STRATEGY

@Id @GeneratedValue(strategy = GenerationType.*TABLE*)

int auth_id ;

Q10. Changes done in address.java

 and changes to be done in Author.java is :

Q11. @Embedded

address **address1**;

Q12. Make changes in Author.java as:

 @ElementCollection

List<String> **subject**=**new** ArrayList<>();

Q13. Changes done in Application.java

```
List<String> list1=new ArrayList<>();

list1.add("languages");
list1.add("fiction");
list1.add("classics");
author.setSubject(list1);

session.save(author);
```

Q14. Changes done in Book.java

Q15. In Author.java make changes such as :

 @OneToOne

 @JoinColumn(name = **"Book"**)
 Book **book**;

 Also in application.java make changes as :

 Author author= session.get(Author.**class**,1);

 Book book = session.get(Book.**class**, 1);
 author.setBook(book);
 session.update(author);

Also In hibernate.cfg.xml set the property "**hibernate.hbm2ddl.auto**" as update.

Implemented in ques15.java

Q16. **In uniderectional**

implemented in ques16a.java

In Bidirectional

implemented in ques16b.java

Without Additional Table:

implemented in ques16c.java

Q17. Implemented in ques17.java