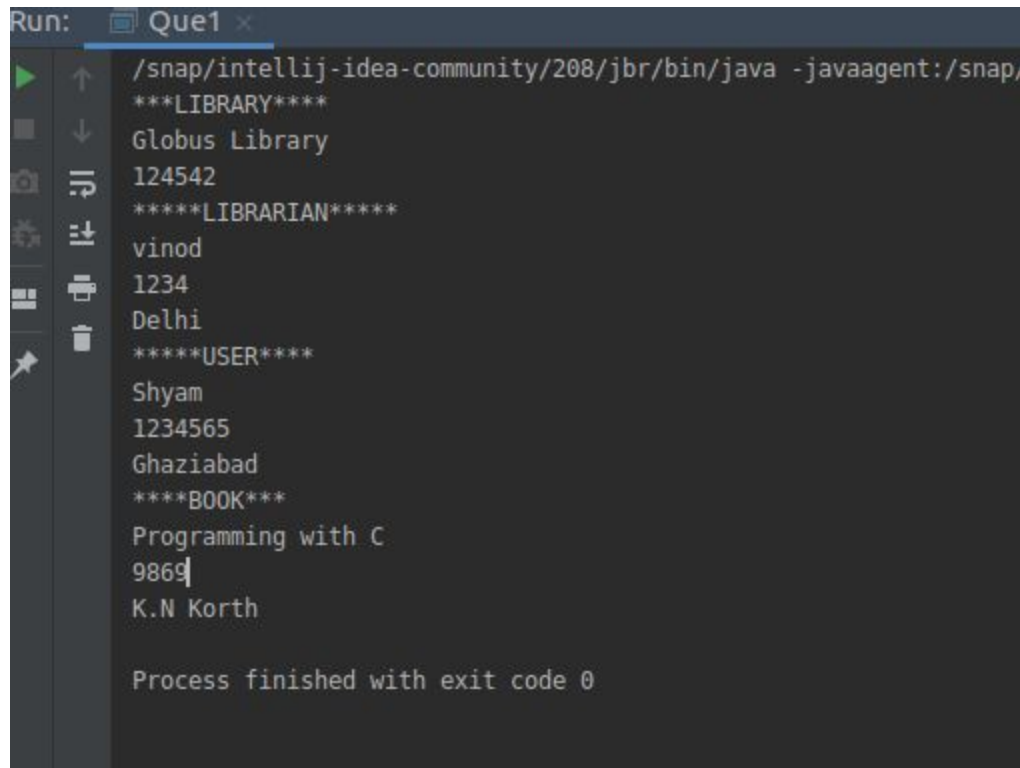


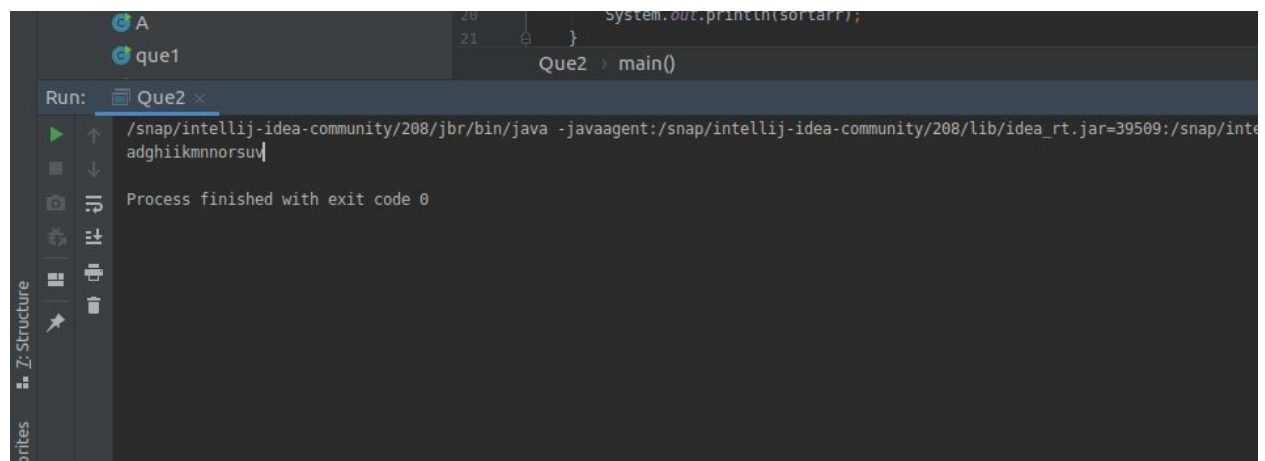
1. Create Java classes having suitable attributes for Library management system. Use OOPs concepts in your design. Also try to use interfaces and abstract classes.



```
Run: Que1 x
/snap/intellij-idea-community/208/jbr/bin/java -javaagent:/snap/
***LIBRARY***
Globus Library
124542
*****LIBRARIAN*****
vinod
1234
Delhi
*****USER*****
Shyam
1234565
Ghaziabad
****BOOK****
Programming with C
9869
K.N Korth

Process finished with exit code 0
```

2. WAP to sorting string without using string Methods?.



```
Run: Que2 x
/snap/intellij-idea-community/208/jbr/bin/java -javaagent:/snap/intellij-idea-community/208/lib/idea_rt.jar=39509:/snap/inte
adghikmnnorsuv

Process finished with exit code 0
```

3. WAP to produce NoClassDefFoundError and ClassNotFoundException exception.

```
ERROR: Could not find or load main class ErrorGeneration
vinod@Vinod-Singh:~/Desktop$ javac exist.java
vinod@Vinod-Singh:~/Desktop$ java ErrorGeneration
Error: Could not find or load main class ErrorGeneration
vinod@Vinod-Singh:~/Desktop$ javac Que3.java
vinod@Vinod-Singh:~/Desktop$ java ErrorGeneration
java.lang.ClassNotFoundException: ClassDoesNotExist
    at java.net.URLClassLoader.findClass(URLClassLoader.java:382)
    at java.lang.ClassLoader.loadClass(ClassLoader.java:419)
    at sun.misc.Launcher$AppClassLoader.loadClass(Launcher.java:352)
    at java.lang.ClassLoader.loadClass(ClassLoader.java:352)
    at java.lang.Class.forName0(Native Method)
    at java.lang.Class.forName(Class.java:264)
    at ErrorGeneration.main(Que3.java:10)
vinod@Vinod-Singh:~/Desktop$ java ErrorGeneration
java.lang.ClassNotFoundException: ClassDoesNotExist
    at java.net.URLClassLoader.findClass(URLClassLoader.java:382)
    at java.lang.ClassLoader.loadClass(ClassLoader.java:419)
    at sun.misc.Launcher$AppClassLoader.loadClass(Launcher.java:352)
    at java.lang.ClassLoader.loadClass(ClassLoader.java:352)
    at java.lang.Class.forName0(Native Method)
    at java.lang.Class.forName(Class.java:264)
    at ErrorGeneration.main(Que3.java:10)
Exception in thread "main" java.lang.NoClassDefFoundError: exist
    at ErrorGeneration.main(Que3.java:16)
```

```
    at ErrorGeneration.main(Que3.java:10)
Exception in thread "main" java.lang.NoClassDefFoundError: exist
    at ErrorGeneration.main(Que3.java:16)
```

4. WAP to create singleton class.

```
Que4 (1) x
/snap/intellij-idea-community/208/jbr/bin/java -javaagent:/snap/intellij-idea-community/208/jbr/bin/javaagent.jar
Hey.... it is working!!!

Process finished with exit code 0
```

5. WAP to show object cloning in java using cloneable and copy constructor both.

```
Ques x
/snap/intellij-idea-community/208/jbr/bin/java -javaagent:/snap/intellij-idea-community/208/jbr/bin/javaagent.jar
101 vinod
101 vinod
Copy Constructor Invoked
121 kumar
121 kumar

Process finished with exit code 0
```

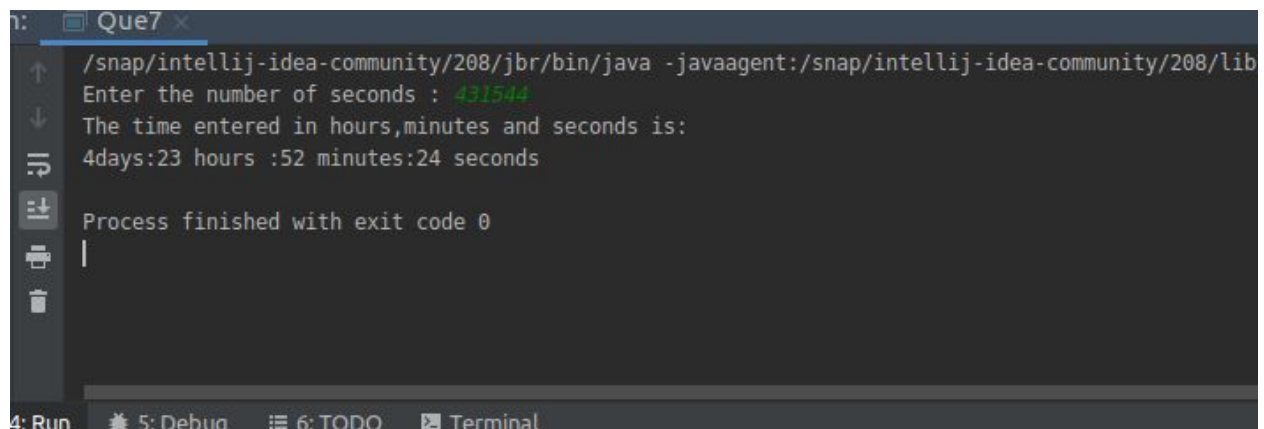
6. WAP showing try, multi-catch and finally blocks.



```
Run: Que6 x
/snap/intellij-idea-community/208/jbr/bin/java -javaagent:/snap/intellij-idea-community/
Arithmetic Exception occurs
finally block execute

Process finished with exit code 0
```

7. WAP to convert seconds into days, hours, minutes and seconds.



```
Run: Que7 x
/snap/intellij-idea-community/208/jbr/bin/java -javaagent:/snap/intellij-idea-community/208/lib
Enter the number of seconds : 431544
The time entered in hours,minutes and seconds is:
4days:23 hours :52 minutes:24 seconds

Process finished with exit code 0
```

8. WAP to read words from the keyboard until the word done is entered. For each word except done, report whether its first character is equal to its last character. For the required loop, use a

a)while statement

b)do-while statement

```
Un: Que8 x
/snap/intellij-idea-community/208/jbr/bin/java -javaagent:/snap/intellij-idea-community/
By While loop
Enter your words:
vinod
Enter your words:
vinodv
first and last char are same
Enter your words:
done
By do While loop
Enter your words:
kumark
first and last char are same
Enter your words:
done

Process finished with exit code 0
```

9. Design classes having attributes for furniture where there are wooden chairs and tables, metal chairs and tables. There are stress and fire tests for each products.

```
Ques 9
/snap/intellij-idea-community/208/jbr/bin/java -javaagent:/snap/intellij-idea-community/208/lib/idea_r
fire test failed for woodenchair
stress test passed for woodenchair
fire test failed for woodenchair
stress test passed for woodenchair
fire test passed for metal chair
stress test failed for metal chair
fire test passed for metal chair
stress test failed for metal chair

Process finished with exit code 0
|
```

10. Design classes having attributes and method(only skeleton) for a coffee shop. There are three different actors in our scenario and i have listed the different actions they do also below

* Customer

- Pays the cash to the cashier and places his order, get a token number back
- Waits for the intimation that order for his token is ready
- Upon intimation/notification he collects the coffee and enjoys his drink

(Assumption: Customer waits till the coffee is done, he wont timeout and cancel the order. Customer always likes the drink served. Exceptions like he not liking his coffee, he getting wrong coffee are not considered to keep the design simple.)

* Cashier

- Takes an order and payment from the customer

- Upon payment, creates an order and places it into the order queue
 - Intimates the customer that he has to wait for his token and gives him his token
- (Assumption: Token returned to the customer is the order id. Order queue is unlimited. With a simple modification, we can design for a limited queue size)

* Barista

- Gets the next order from the queue
- Prepares the coffee
- Places the coffee in the completed order queue
- Places a notification that order for token is ready

ANS> git

11. Convert the following code so that it uses nested while statements instead of for statements:

```
int s = 0;

int t = 1;

for (int i = 0; i < 10; i++)

{

s = s + i;

for (int j = i; j > 0; j--)
```

```

{

t = t * (j - i);

}

s = s * t;

System.out.println("T is " + t);

}

System.out.println("S is " + s);

```

```

/snap/intellij-idea-community/208/jbr/bin/java -javaagent:/snap/intellij-idea-community/208/lib/idea_rt.jar
BY for Loop
T is 1
T is 0
T is 0
T is 0
T is 0
T is 0
T is 0
T is 0
T is 0
T is 0
T is 0
T is 0
T is 0
S is 0
BY While LOOP
T is 1
T is 0
T is 0
T is 0
T is 0
T is 0
T is 0
T is 0
T is 0
T is 0
T is 0
T is 0
S is 0

Process finished with exit code 0

```

12.What will be the output on new Child(); ?


```
class Parent extends Grandparent {

    {

        System.out.println("instance - parent");

    }

    public Parent() {

        System.out.println("constructor - parent");

    }

    static {

        System.out.println("static - parent");

    }

}

class Grandparent {

    static {

        System.out.println("static - grandparent");

    }

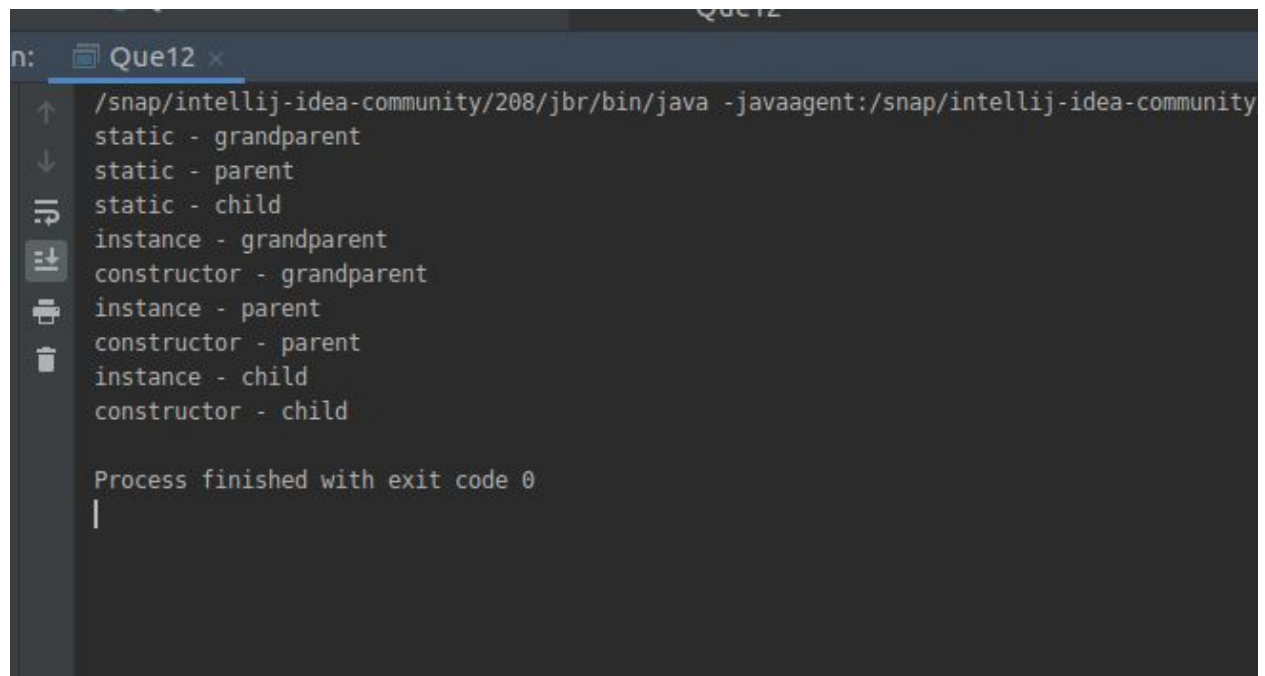
    {

        System.out.println("instance - grandparent");

    }

}
```

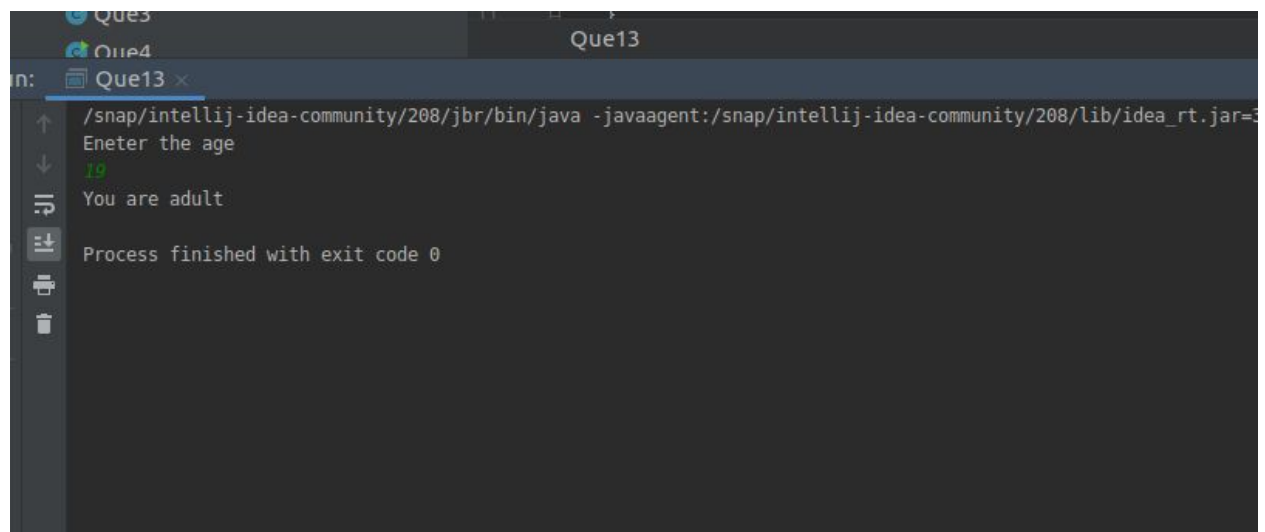
```
}  
  
public Grandparent() {  
    System.out.println("constructor - grandparent");  
}  
}  
  
class Child extends Parent {  
    public Child() {  
        System.out.println("constructor - child");  
    }  
  
    static {  
        System.out.println("static - child");  
    }  
  
    {  
        System.out.println("instance - child");  
    }  
}
```



```
Que12 x
/snap/intellij-idea-community/208/jbr/bin/java -javaagent:/snap/intellij-idea-community
static - grandparent
static - parent
static - child
instance - grandparent
constructor - grandparent
instance - parent
constructor - parent
instance - child
constructor - child

Process finished with exit code 0
|
```

Q13. Create a custom exception that do not have any stack trace.



```
Que13 x
/snap/intellij-idea-community/208/jbr/bin/java -javaagent:/snap/intellij-idea-community/208/lib/idea_rt.jar=3
Enter the age
19
You are adult

Process finished with exit code 0
```