

CS23333-Object Oriented Programming Using Java-2023

Quiz navigation

1	2	3	4	5	6	7	8	9	10
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
11	12	13	14	15	16	17	18	19	20
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
21	22	23	24	25	26	27	28	29	30
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
31	32	33	34	35					
✓	✓	✓	✓						

Show one page at a time

[Finish review](#)

Status Finished
Started Thursday, 19 September 2024, 12:05 PM
Completed Thursday, 19 September 2024, 12:49 PM
Duration 43 mins 46 secs
Grade 26.00 out of 35.00 (74.29%)

Question 1

Correct

Mark 1.00 out of 1.00

[Flag question](#)

What command in Java 2 SDK should be used to compile the following code contained in a file called HelloWorld.java?

```
public class HelloWorld {  
    public static void main(String[] args) {  
        System.out.println("Hello World!");  
    }  
}  
  
a. java HelloWorld.java  
b. javac HelloWorld  
c. java HelloWorld  
d. javac HelloWorld.java ✓
```

The correct answer is:
javac HelloWorld.java

Question 2

Correct

Mark 1.00 out of 1.00

[Flag question](#)

Which of the following is correct?

- a. 2 << 1 gives 2
- b. 8 >> 2 gives 2 ✓
- c. 4 << 2 gives 2
- d. 16 >>> 2 gives 2

The correct answer is:
8 >> 2 gives 2

Question 3

Correct

Mark 1.00 out of
1.00[Flag question](#)

Suppose you have four int variables: x, y, z, and result.

Which expression sets the value of z to x if result has a value of 1, and the value of y to x otherwise?

- a. `x = (result == 1) : z ? y;`
- b. `x = (result == 1) : y ? z;`
- c. `x = (result == 1) ? y : z;`
- d. `x = (result == 1) ? z : y; ✓`

The correct answer is:

`x = (result == 1) ? z : y;`

Question 4

Correct

Mark 1.00 out of
1.00[Flag question](#)

Which primitive type ranges from -2^{15} to $(2^{15})-1$?

- a. short ✓
- b. byte
- c. int
- d. char

The correct answer is:

short

Question 5

Incorrect

Mark 0.00 out of
1.00[Flag question](#)

Given:

`int a = 4;`

`byte b = 0;`

Which line assigns the value of a to b?

- a. `b = a;`
- b. `b = byte(a); ✗`
- c. `b = (byte) a;`
- d. `b = byte a;`

The correct answer is:
`b = (byte) a;`

Question 6

Correct

Mark 1.00 out of
1.00

[Flag question](#)

Which range of values is valid for all integral types, where n is the number of bits?

- a. $-2^{(n-1)}$ to $2^{(n-1)}-1$ ✓
- b. $-2^{(n-1)}$ to $2^{(n-1)}+1$
- c. $-2^{(n-1)}$ -1 to $2^{(n-1)}-1$
- d. $2^{(n-1)}$ to $2^{(n+1)}+1$

The correct answer is:
 $-2^{(n-1)}$ to $2^{(n-1)}-1$

Question 7

Incorrect

Mark 0.00 out of
1.00

[Flag question](#)

Which one of these lists contains only Java programming language keywords?

- a. strictfp, constant, super, implements, do ✗
- b. goto, instanceof, native, finally, default, throws
- c. class, if, void, long, int, continue
- d. byte, break, assert, switch, include

The correct answer is:
`goto, instanceof, native, finally, default, throws`

Question 8

Correct

Mark 1.00 out of
1.00

[Flag question](#)

What is the value of $-32 \% 6$?

- a. -2 ✓
- b. -5
- c. 5
- d. 2

The correct answer is:
-2

Question 9

Correct

Mark 1.00 out of
1.00

Flag question

Which one of the following is a short-circuit operator?

- a. ^
- b. && ✓
- c. &
- d. |

The correct answer is:

&&

Question 10

Correct

Mark 1.00 out of
1.00

Flag question

Which of the following variable initialization is invalid?

- a. byte myByte=254; ✓
- b. double myDouble=12341.509D;
- c. long myLong=45678L;
- d. int myInt = 0xFACE;

The correct answer is:

byte myByte=254;

Question 11

Correct

Mark 1.00 out of
1.00

Flag question

Which of the following is a non-primitive data type in Java?

- a. int
- b. float
- c. String ✓
- d. double

The correct answer is:

String

Question 12

Correct

Mark 1.00 out of
1.00

Flag question

Which of the following primitive data type is an integer type?

- a. double
- b. boolean
- c. float
- d. byte ✓

The correct answer is:

byte

Question 13

Incorrect

Mark 0.00 out of
1.00

Flag question

Given `char c = 'A';`

What is the simplest way to convert the character value in `c` into an int?

- a. `int i = (int) c;`
- b. `int i = Character.getNumericValue(c);` ✗
- c. `int i = int (c);`
- d. `int i = c;`

The correct answer is:

`int i = c;`

Question 14

Correct

Mark 1.00 out of
1.00

Flag question

What is the numerical range of a char?

- a. 0 to 65535 ✓
- b. 0 to 32767
- c. -(2^{15}) to (2^{15}) - 1
- d. -128 to 127

The correct answer is:

0 to 65535

Question 15

Correct

Mark 1.00 out of
1.00[Flag question](#)

What will happen if you try to compile and run the following code?

```
int a = 200;  
byte b = a;  
  
System.out.println("The value of b is " + b);  
  
○ a. It will compile but cause an error at runtime  
○ b. It will compile and print The value of b is -56  
○ c. It will compile and print The value of b is 200  
● d. Compile-time error ✓
```

The correct answer is:

Compile-time error

Question 16

Correct

Mark 1.00 out of
1.00[Flag question](#)

Which one of the following primitive type conversion is permitted implicitly without using casting?

- a. long to int
- b. float to double ✓
- c. double to long
- d. double to float

The correct answer is:

float to double

Question 17

Correct

Mark 1.00 out of
1.00[Flag question](#)

Why is the main() method special in Java program?

- a. The main() method must be the only static method in a program.
- b. It is where the execution of a Java program starts. ✓
- c. Every class must have a main() method.
- d. Only the main() method may create objects.

The correct answer is:

It is where the execution of a Java program starts.

Question 18

Correct

Mark 1.00 out of
1.00[Flag question](#)

Given the following code snippet:

```
double sum = 10.0, price=100;  
sum += price>=100 ? price*1.1 : price;
```

What value is placed in sum? Choose the most appropriate answer.

- a. 90
- b. 100
- c. 110
- d. 120 ✓

The correct answer is:

120

Question 19

Correct

Mark 1.00 out of
1.00[Flag question](#)

Which is a reserved word in the Java programming language?

- a. native ✓
- b. subclasses
- c. method
- d. reference

The correct answer is:

native

Question 20

Correct

Mark 1.00 out of
1.00[Flag question](#)

Which of the following keywords is reserved but not used in Java?

- a. unsigned
- b. constant
- c. const ✓
- d. delete

The correct answer is:

const

const

Question 21

Incorrect

Mark 0.00 out of
1.00

Flag question

Which of the following is a valid declaration of String?

- a. String S2=null;
- b. String S3 = (String) 'face';
- c. String S4=(String)\ufeed;
- d. String S1='null';

The correct answer is:

String S2=null;

Question 22

Correct

Mark 1.00 out of
1.00

Flag question

The primitive type char in Java consists of:

- a. 16 bits
- b. 8 bits
- c. 24 bits
- d. 32 bits

The correct answer is:

16 bits

Question 23

Correct

Mark 1.00 out of
1.00

Flag question

Which of the following is a valid declaration of boolean?

- a. boolean b2 = no;
- b. boolean b3 = yes;
- c. boolean b4 = false;
- d. boolean b5 = Boolean.false();

The correct answer is:

boolean b4 = false;

Question 24

Incorrect

Mark 0.00 out of
1.00[Flag question](#)

What is the default data type of the literal represented as 48.0?

- a. float ✗
- b. int
- c. double
- d. byte

The correct answer is:

double

Question 25

Incorrect

Mark 0.00 out of
1.00[Flag question](#)

If x, y, and z are all integers, which expression will produce a runtime error?

NOTE: The expressions are always evaluated with all the integers having a value of 1.

- a. $z = y \% --x$
- b. $z = y / x--;$ ✗
- c. $z = x / y--;$
- d. $z = -x / x;$

The correct answer is:

$z = y \% --x$

Question 26

Correct

Mark 1.00 out of
1.00[Flag question](#)

Which of the following is correct?

$128 >> 1$ gives

- a. 64 ✓
- b. -32
- c. -64
- d. 32

The correct answer is:

64

Question 27

Correct

Mark 1.00 out of
1.00[Flag question](#)

Which of the following is a valid Java identifier?

- a. 3numbers
- b. @attherate
- c. _underscore ✓
- d. %percent

The correct answer is:

_underscore

Question 28

Correct

Mark 1.00 out of
1.00[Flag question](#)

If i is an int and s is a short, how do you assign i to s?

- a. s = i;
- b. i = (int) s;
- c. s = (short) i; ✓
- d. i = s;

The correct answer is:

s = (short) i;

Question 29

Correct

Mark 1.00 out of
1.00[Flag question](#)

Which of the following is a valid initialization?

- a. int i = 0xDEadCafe; ✓
- b. boolean b = TRUE;
- c. long l = 79,653;
- d. float f = 27.893;

The correct answer is:

int i = 0xDEadCafe;

Question 30

Which one of the below conversion is equivalent to 12×2^3 ?

Question 30

Correct

Mark 1.00 out of
1.00[Flag question](#)

Which one of the below expression is equivalent to $16 >> 2$?

- a. $16 * 4$
- b. $16 / 4$ ✓
- c. $16 * 2$
- d. $16 / 2$

The correct answer is:

$16 / 4$

Question 31

Correct

Mark 1.00 out of
1.00[Flag question](#)

What is the value of x after this code is run?

```
int x = 3;  
int y = 3;  
x += (y + x * 2);
```

- a. 12 ✓
- b. 9
- c. 11
- d. 10

The correct answer is:

12

Question 32

Incorrect

Mark 0.00 out of
1.00[Flag question](#)

Given a variable x of type int (which can contain a negative value), which of these expressions always gives a positive number irrespective of the value of x?

- a. $x >> 1;$ ✗
- b. $x >>> 1;$
- c. $x << 1;$
- d. $x << 2;$

The correct answer is:

$x >>> 1;$

Question 33

Incorrect

Mark 0.00 out of
1.00[Flag question](#)

Which primitive type ranges from -2^{31} to $(2^{31}-1)$?

- a. byte
- b. int
- c. short ✗
- d. long

The correct answer is:

int

Question 34

Incorrect

Mark 0.00 out of
1.00[Flag question](#)

Given:

```
int x = 7;  
x <<= 2;
```

What best describes the second line of code?

- a. It assigns the value to x after shifting 2 to x places left.
- b. It is invalid because there is no such operator as <<=.
- c. It assigns the value of 2 to x, and shifts it to left by one place. ✗
- d. It assigns the value to x after shifting x to 2 places left.

The correct answer is:

It assigns the value to x after shifting x to 2 places left.

Question 35

Correct

Mark 1.00 out of
1.00[Flag question](#)

Given a variable x of type int (which contains a positive value), which is the correct way of doubling the value of x, barring any wrapping of out-of-range intermediate values?

- a. `x >> 1;`
- b. `x << 1;` ✓
- c. `x << -1;`
- d. `x >>> 1;`

The correct answer is:

`x << 1;`

Status Finished**Started** Sunday, 29 September 2024, 11:21 AM**Completed** Sunday, 29 September 2024, 12:31 PM**Duration** 1 hour 10 mins**Question 1**

Correct

Marked out of 5.00

Write a program to find whether the given input number is Odd.

If the given number is odd, the program should return 2 else It should return 1.

Note: The number passed to the program can either be negative. positive or zero. Zero should NOT be treated as Odd.

For example:

Input	Result
123	2
456	1

Answer: (penalty regime: 0 %)

```

1 import java.lang.System;
2 import java.util.Scanner;
3 public class odd{
4
5     public static void main(String args[]){
6         Scanner scan=new Scanner(System.in);
7         int a=scan.nextInt();
8         if(a%2==0){
9             System.out.println("1");
10        }
11        else{
12            System.out.println("2");
13        }
14        scan.close();
15    }
16}
17
18

```

	Input	Expected	Got	
✓	123	2	2	✓
✓	456	1	1	✓

Passed all tests! ✓

Question 2

Correct

Marked out of 5.00

Write a program that returns the last digit of the given number. Last digit is being referred to the least significant digit i.e. the digit in the ones (units) place in the given number.

The last digit should be returned as a positive number.

For example,

if the given number is 197, the last digit is 7

if the given number is -197, the last digit is 7

For example:

Input	Result
197	7
-197	7

Answer: (penalty regime: 0 %)

```

1 import java.util.Scanner;
2 public class digit{
3     public static void main(String args[])
4     {
5         Scanner scan=new Scanner(System.in);
6         int a=scan.nextInt();
7         if(a>0)
8         {
9             System.out.println(a%10);
10        }
11        else
12        {
13            System.out.println(-(a%10));
14        }
15    }
16 }
```

	Input	Expected	Got	
✓	197	7	7	✓
✓	-197	7	7	✓

Passed all tests! ✓

Question 3

Correct

Marked out of 5.00

Rohit wants to add the last digits of two given numbers.

For example,

If the given numbers are 267 and 154, the output should be 11.

Below is the explanation:

Last digit of the 267 is 7

Last digit of the 154 is 4

Sum of 7 and 4 = 11

Write a program to help Rohit achieve this for any given two numbers.

Note: Tile sign of the input numbers should be ignored.

i.e.

if the input numbers are 267 and 154, the sum of last two digits should be 11

if the input numbers are 267 and -154, the slim of last two digits should be 11

if the input numbers are -267 and 154, the sum of last two digits should be 11

if the input numbers are -267 and -154, the sum of last two digits should be 11

For example:

Input	Result
267	11
154	
267 -154	11
-267 154	11
-267 -154	11

Answer: (penalty regime: 0 %)

```

1 import java.util.Scanner;
2 public class one
3 {
4     public static void main(String args[])
5     {
6         Scanner m=new Scanner(System.in);
7         int x=m.nextInt();
8         int y=m.nextInt();
9         int a,b;
10        if(x<0 && y<0)
11        {
12            a=-(x%10);
13            b=-(y%10);
14        }
15        else if(x<0 && y>0){
16            a=-(x%10);
17            b=(y%10);
18        }
19        else if(x>0 && y<0){
20            a=(x%10);
21            b=-(y%10);
22        }
23        else{
24            a=(x%10);
25            b=(y%10);
26        }
27        System.out.println(a+b);
28
29

```

30		}
31		}

	Input	Expected	Got	
✓	267 154	11	11	✓
✓	267 -154	11	11	✓
✓	-267 154	11	11	✓
✓	-267 -154	11	11	✓

Passed all tests! ✓

◀ Lab-01-MCQ

Jump to...

Is Even? ►



CS23333-Object Oriented Programming Using Java-2023

Quiz navigation

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35					

Show one page at a time

Finish review

Status: Finished
Started: Sunday, 29 September 2024, 12:32 PM
Completed: Sunday, 29 September 2024, 1:11 PM
Duration: 38 mins 57 secs

Question 1

Complete

Marked out of 1.00

Flag question

What will be the output of the program?

```
boolean bool = true;
if(bool = false) /* Line 2 */
{
    System.out.println("a");
}
else if(bool) /* Line 6 */
{
    System.out.println("b");
}
else if(!bool) /* Line 10 */
{
    System.out.println("c"); /* Line 12 */
}
else
{
    System.out.println("d");
}
```

- a. d
- b. a
- c. c
- d. b
- e.

Question 2
Complete
Marked out of
1.00
[Flag question](#)

Examine the following code:

```
int count = -2;  
while ( count < 3 )  
{  
    System.out.print( count + " " );  
    count = count + 1;  
}  
System.out.println( );
```

What does this code print on the monitor?

- a. -2 -1 1 2 3
- b. -2 -1 0 1 2
- c. -2 -1 1 2 3 4
- d. -25

Question 3
Complete
Marked out of
1.00
[Flag question](#)

Which of the following is most likely to use a sentinel loop?

- a. Checking if a particular integer is even or odd.
- b. Trying various letter substitution combinations until a message in a secret code can be read.
- c. Asking the user at the end of a game if the user wants to play again.
- d. Checking that each price in a list of items offered for sale is less than \$125.

Question 4
Complete
Marked out of
1.00
[Flag question](#)

Which option completes the code to print the message as long as number is greater than 20?

```
int number = 100;  
MISSING CODE {  
    System.out.println("The number = " + number);  
    number --;  
}
```

- a.
- b. do while (number > 20)
- c. while (number > 20)
- d. if (number > 20)

Question 5
Complete
Marked out of
1.00
[Flag question](#)

What is the output of the below program?

```
public class IfExample {  
    public static void main(String[] args) {  
        int var1;  
        if (var1) {  
            System.out.println("Inside If Condition");  
        }  
    }  
}
```

- a. Successfully compiled
- b. Compilation error
- c. Runtime error
- d. Inside If Condition

Question 6
Complete
Marked out of
1.00
[Flag question](#)

Given:

```
switch( i )  
{  
    default :  
        System.out.println("Hello");  
}
```

What is the acceptable type for the variable i?

- a. float
- b. Object
- c. byte
- d. double

Question 7
Complete
Marked out of
1.00
[Flag question](#)

Choose the correct expressions which satisfy the given table for both X and Y

X Y Result

28 -44 true

20 17 false

Question 7

Complete

Marked out of
1.00[Flag question](#)

Choose the correct expressions which satisfy the given table for both X and Y

X Y Result

28 -44 true

58 17 false

47 59 true

30 72 true

63 -12 false

37 33 false

- a. $(x < 35) \ || \ (y > 35)$
- b.
- c. $(x == 0) \ \&\& \ (y > 35)$
- d. $(x < 25) \ || \ (y > 35)$
- e. $(x < 75) \ || \ (y > -100)$

Question 8

Complete

Marked out of
1.00[Flag question](#)

Another word for "looping" is:

- a. iteration
- b. tintinabulation
- c. reiteration
- d. recapitulation

Question 9

Complete

Marked out of
1.00[Flag question](#)

Given the following code:

```
public class TestForSwitch {  
    public static void main(String[] args) {  
        for (int i = 0; i < 3; i++) {  
            switch (i) {  
                default:  
                    System.out.print("D");  
                case 0:
```

Question 9

Complete

Marked out of
1.00[Flag question](#)

Given the following code:

```
public class TestForSwitch {  
    public static void main(String[] args) {  
        for (int i = 0; i < 3; i++) {  
            switch (i) {  
                default:  
                    System.out.print("D");  
                case 0:  
                    System.out.print("0");  
                case 1:  
                    System.out.print("1");  
            }  
        }  
    }  
}
```

What is the result of attempting to compile and run the program?

- a. Prints: 01D01
- b. Prints: 01D
- c. Prints 011D01
- d. Prints: DDD
- e.

Question 10

Complete

Marked out of
1.00[Flag question](#)

Which of the following is a legal loop definition?

- a. do { /* whatever */ } while (int a = 0);
- b. for (int a=0; a<100; a++) { /* whatever */ }
- c.
- d. do { /* whatever */ } while (int a == 0);
- e. while (int a == 0) { /* whatever */ }

Question 11

Complete

Marked out of
1.00[Flag question](#)

```
public class If1
{
    static boolean b;
    public static void main(String [] args)
    {
        short hand = 42;
        if ( hand < 50 && !b ) /* Line 7 */
            hand++;
        if ( hand > 50 ); /* Line 9 */
        else if ( hand > 40 )
        {
            hand += 7;
            hand++;
        }
        else
            --hand;
        System.out.println(hand);
    }
}
```

Choose the correct answer(s) from the following:

- a. 42
- b. 41
- c. 50
- d. 51

Question 12

Complete

Marked out of
1.00[Flag question](#)

Which of the following is legal?

- a. for (int i=0, float j=1.0; i++, j++) {}
- b. for (int i=0, j=1; i<10; i++;j++) {}
- c. for (int i=0, j=1; i<10; i++,j++) {}
- d. for (int i=0, j=1; i<10j<10; i++,j++) {}

Question 13

Complete

Marked out of
1.00[Flag question](#)

Given the following code:

```
public class TestSwitch {  
    public static void main(String args[]) {  
        byte b = -1;  
        switch (b) {  
            case -1:  
                System.out.print("-1");  
                break;  
            case 127:  
                System.out.print("127");  
                break;  
            case 126:  
                System.out.print("126");  
                break;  
            default:  
                System.out.print("Default ");  
        }  
    }  
}
```

What is the result of attempting to compile and run the program?

- a. Prints: Default
- b. Prints: -1
- c. Compile-time error
- d.
- e. Prints: 128

Question 14

Complete

Marked out of
1.00[Flag question](#)

```
public void foo( boolean a, boolean b )  
{  
    if( a )  
    {  
        System.out.println("A"); /* Line 5 */  
    }  
    else if(a && b) /* Line 7 */  
}
```

```
else if(a && b) /* Line 7 */  
{  
    System.out.println( "A && B");  
}  
else /* Line 11 */  
{  
    if ( !b )  
    {  
        System.out.println( "notB");  
    }  
    else  
    {  
        System.out.println( "ELSE" );  
    }  
}  
}  
}
```

Choose the correct answer(s) from the following:

- a. If a is false and b is true then the output is "ELSE"
- b. If a is false and b is false then the output is "ELSE"
- c. If a is true and b is true then the output is "A && B"
- d. If a is true and b is false then the output is "notB"

Question 15

Complete

Marked out of
1.00

[Flag question](#)

Which flow control mechanism determines when a block of code should run more than once?

- a. iteration
- b.
- c. sequence
- d. selection
- e. exceptions

Question 16

Complete

Marked out of
1.00

Given the following code:

```
public class Testif {  
    public static void main(String[] args) {
```

Question 16

Complete

Marked out of
1.00[Flag question](#)

Given the following code:

```
public class TestIf {  
    public static void main(String[] args) {  
        boolean bFlag = true;  
        if (bFlag = false) {  
            System.out.print("X");  
        } else if (bFlag) {  
            System.out.print("Y");  
        } else {  
            System.out.print("Z");  
        }  
    }  
}
```

What is the result of attempting to compile and run the program?

- a. Prints: X
- b. Compile-time error
- c. Prints: Y
- d. Prints: Z

Question 17

Complete

Marked out of
1.00[Flag question](#)

Choose the correct expressions which satisfy the given table for X

X Result

42 true

79 false

27 false

30 false

- a. $x < 79$
- b. $x == 0$
- c. $x < 42$
- d.
- e. $x == 42$

Question 18

Complete

Marked out of
1.00[Flag question](#)

Given the following,

```
11. int l = 0;  
12. outer:  
13.     while (true) {  
14.         l++;  
15.         inner:  
16.             for (int j = 0; j < 10; j++) {  
17.                 l += j;  
18.                 if (j == 3)  
19.                     continue inner;  
20.                 break outer;  
21.             }  
22.             continue outer;  
23.         }  
24.         System.out.println(l);  
25.  
26.
```

What is the result?

- a. 2
- b.
- c. 3
- d. 4
- e. 1

Question 19

Complete

Marked out of
1.00[Flag question](#)

What makes a loop a counting loop?

- a. A loop control variable is tested in the while statement, and is changed each time the loop body executes
- b. A counter is counted downwards by one until it hits zero.
- c. No loop control variables are used.
- d. A counter is counted upwards by one until it hits a particular limit.

Question 20

Complete

Marked out of
1.00[Flag question](#)

Given the following:

```
public class DoTest {  
    public static void main(String[] args) {  
        boolean flag;  
        int index = 3;  
        do {  
            flag = false;  
            System.out.print(index);  
            index--;  
            flag = (index > 0);  
            continue;  
        } while ((flag) ? true : false);  
    }  
}
```

What will be the output of above code?

- a. 3210
- b. Will go into an infinite loop
- c. Compilation error
- d. 321

Question 21

Complete

Marked out of
1.00[Flag question](#)

Choose the correct expressions which satisfy the given table for X

X Result

40 true

95 true

63 false

9 true

- a. $x \neq 9$
- b. $x == 40$
- c. $x < 63$
- d. $x \neq 63$

Question 22

Complete

Marked out of
1.00[Flag question](#)

Given the following,

```
1. public class While {  
2.     public void loop0 {  
3.         int x= 0;  
4.         while ( 1 ) {  
5.             System.out.print("x plus one is " + (x + 1));  
6.         }  
7.     }  
8. }
```

Which statement is true?

- a. There are syntax errors on lines 1, 4, and 5.
- b. There are syntax errors on lines 4 and 5.
- c. There is a syntax error on line 1.
- d. There are syntax errors on lines 1 and 4.
- e. There is a syntax error on line 4.

Question 23

Complete

Marked out of
1.00[Flag question](#)

```
public void test(int x)  
{  
    int odd = 1;  
    if(odd) /* Line 4 */  
    {  
        System.out.println("odd");  
    }  
    else  
    {  
        System.out.println("even");  
    }  
}
```

Which statement is true?

- a. "odd" will be output for odd values of x, and "even" for even values.
- b. Compilation fails.
- c. "even" will always be output.
- d. "odd" will always be output.
- e.

Question 24

Complete

Marked out of
1.00[Flag question](#)

Given the following,

```
1. int j = 7;  
2. label:  
3. if (j > 5) {  
4.     System.out.print("j is " + j);  
5.     j--;  
6.     continue label;  
7. }
```

What is the result?

- a.
- b. Produces no output
- c. Compilation fails
- d. j is 7 j is 6
- e. j is 7

Question 25

Complete

Marked out of
1.00[Flag question](#)

Which statement is true about the following code fragment?

```
1. int j = 2;  
2. switch (j) {  
3.     case 2:  
4.         System.out.println("value is two");  
5.     case 2 + 1:  
6.         System.out.println("value is three");  
7.     break;  
8.     default:  
9.         System.out.println("value is " + i);
```

```
9.     System.out.println("value is " + j);
10.    break;
11. }
```

- a. The output would be
value is two
value is three
value is 2
- b. The code is illegal because of the expression at line 5
- c. The output would be
value is two
value is three
- d. The output would be
value is two

Question 26

Complete

Marked out of
1.00[Flag question](#)

Given the following,

```
1. int i = 0;
2. label:
3. if (i < 2) {
4.     System.out.print(" i is " + i);
5.     i++;
6.     continue label;
7. }
```

What is the result?

- a. i is 0
- b. i is 0 i is 1
- c. Compilation fails
- d. Produces no output

Question 27

Complete

Marked out of
1.00[Flag question](#)

What is output of the following program?

```
class A {
    public static void main(String[] args) {
        float f = new Float(2.5);
```

Flag question

```
float f = new Float(2.5);
float f1 = 2.5f;
if (f == f1)
    System.out.println("cat");
else
    System.out.println("mouse");
}
```

- a. cat
- b. Compilation error
- c. Runtime error
- d. mouse
- e.

Question 28

Complete

Marked out of
1.00

Flag question

What will be the output of the program?

```
int x = 3;
int y = 1;
if (x == y) /* Line 3 */
{
    System.out.println("x =" + x);
}
```

- a. x = 3
- b. The code runs with no output.
- c. x = 1
- d. Compilation fails.

Question 29

Complete

Marked out of
1.00

Given the following code:

```
public class TestIf {
    public static void main(String[] args) {
        boolean bFlag = true;
```

 Flag question

```
boolean bFlag = true;  
if (bFlag = false) {  
    System.out.print("X");  
} else if (bFlag) {  
    System.out.print("Y");  
} else {  
    System.out.print("Z");  
}  
}  
}
```

What is the result of attempting to compile and run the program?

- a.
- b. Prints: Z
- c. Compile-time error
- d. Prints: X
- e. Prints: Y

Question **30**

Complete

Marked out of
1.00

 Flag question

For the code snippet:

```
int m = 0;  
while( ++m < 2 )  
    System.out.println( m );
```

What is printed to standard output?

- a. 1
- b. Nothing is printed
- c. 0
- d.
- e. 2

Question 31

Complete

Marked out of
1.00[Flag question](#)

What will be the output of the program?

```
int i = 1, j = -1;
switch (i)
{
    case 0, 1: j = 1; /* Line 4 */
    case 2: j = 2;
    default: j = 0;
}
System.out.println("j = " + j);
```

- a. j = 0
- b.
- c. j = -1
- d. j = 1
- e. Compilation fails.

Question 32

Complete

Marked out of
1.00[Flag question](#)

Given the following:

```
public class TestDoWhile {
    public static void main(String... args) {
        int count = 20;
        do {
            System.out.println(count);
        } while (count++ < 21);
    }
}
```

What is the output?

- a. Nothing is printed
- b. 20
- c. 21
- d. 20
21

Question 33

Complete

Marked out of
1.00[Flag question](#)

Which of the following is most likely to use a counting loop?

- a. Asking the user at the end of a game if the user wants to play again.
- b. Checking if a particular integer is even or odd.
- c. Trying various letter substitution combinations until a message in a secret code can be read.
- d. Checking that each price in a list of items offered for sale is less than \$125.

Question 34

Complete

Marked out of
1.00[Flag question](#)

Choose the correct expressions which satisfy the given table for X

X Result

-68 true

-31 false

-70 true

-60 false

- a. $x < -60$
- b. $x > -50$
- c. $x \neq -31$
- d. $x > 0$

Question 35

Complete

Marked out of
1.00[Flag question](#)

Examine the following code fragment:

```
int j = 1;
while ( j < 10 )
{
    System.out.println(j + " ");
    j = j + j%3;
}
```

What is output to the monitor?

- a. 1 2 5 8
- b. 1 4 7 10
- c. 1 4 7

Question 34

Complete

Marked out of
1.00[Flag question](#)

Choose the correct expressions which satisfy the given table for X

X Result

-68 true

-31 false

-70 true

-60 false

- a. $x < -60$
- b. $x > -50$
- c. $x \neq -31$
- d. $x > 0$

Question 35

Complete

Marked out of
1.00[Flag question](#)

Examine the following code fragment:

```
int j = 1;  
while ( j < 10 )  
{  
    System.out.println(j + " ");  
    j = j + j%3;  
}
```

What is output to the monitor?

- a. 1 2 5 8
- b. 1 4 7 10
- c. 1 4 7
- d.
- e. 1 2 4 5 7 8

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Status Finished

Started Sunday, 29 September 2024, 5:26 PM

Completed Sunday, 29 September 2024, 6:13 PM

Duration 46 mins 58 secs

Question 1

Correct

Marked out of 5.00

You have recently seen a motivational sports movie and want to start exercising regularly. Your coach tells you that it is important to get up early in the morning to exercise. She sets up a schedule for you:

On weekdays (Monday - Friday), you have to get up at 5:00. On weekends (Saturday & Sunday), you can wake up at 6:00. However, if you are on vacation, then you can get up at 7:00 on weekdays and 9:00 on weekends.

Write a program to print the time you should get up.

Input Format

Input containing an integer and a boolean value.

The integer tells you the day it is (1-Sunday, 2-Monday, 3-Tuesday, 4-Wednesday, 5-Thursday, 6-Friday, 7-Saturday). The boolean is true if you are on vacation and false if you're not on vacation.

You have to print the time you should get up.

Example Input:

1 false

Output:

6:00

Example Input:

5 false

Output:

5:00

Example Input:

1 true

Output:

9:00

For example:

Input	Result
1 false	6:00
5 false	5:00
1 true	9:00

Answer: (penalty regime: 0 %)

```

1 import java.util.Scanner;
2 public class wake{
3     public static void main(String args[]){
4         Scanner scan=new Scanner(System.in);
5         int a=scan.nextInt();
6         boolean b=scan.nextBoolean();
7         if(b==false){
8             boolean t=false;
9             if(a==1 || a==7){
10                 System.out.println("6:00");
11             }
12             else{
13                 System.out.println("5:00");
14             }
15         }
16         if(b==true){
17             if(a==1 || a==7){
18                 System.out.println("9:00");
19             }
20             else{
21                 System.out.println("7:00");
22             }
23         }
24     }
25 }
```

```
24 |
25 |
26 | }
```

	Input	Expected	Got	
✓	1 false	6:00	6:00	✓
✓	5 false	5:00	5:00	✓
✓	1 true	9:00	9:00	✓

Passed all tests! ✓

1/1

Question 2

Correct

Marked out of 5.00

Consider a sequence of the form 0, 1, 1, 2, 4, 7, 13, 24, 44, 81, 149...

Write a method program which takes as parameter an integer n and prints the nth term of the above sequence. The nth term will fit in an integer value.

Example Input:

5

Output:

4

Example Input:

8

Output:

24

Example Input:

11

Output:

149

For example:

Input	Result
5	4
8	24
11	149

Answer: (penalty regime: 0 %)

```

1 import java.util.Scanner;
2 public class seq{
3     public static void main(String[] args){
4         Scanner scan=new Scanner(System.in);
5         int n=scan.nextInt();
6         int a=0,b=1,c=1,i;
7         int d;
8         for(i=4;i<=n;i++){
9             d=a+b+c;
10            a=b;
11            b=c;
12            c=d;
13        }
14        System.out.println(c);
15    }
16 }
```

	Input	Expected	Got	
✓	5	4	4	✓
✓	8	24	24	✓
✓	11	149	149	✓

Passed all tests! ✓

Question 3

Correct

Marked out of 5.00

You and your friend are movie fans and want to predict if the movie is going to be a hit!

The movie's success formula depends on 2 parameters:

the acting power of the actor (range 0 to 10)

the critic's rating of the movie (range 0 to 10)

The movie is a hit if the acting power is excellent (more than 8) or the rating is excellent (more than 8). This holds true except if either the acting power is poor (less than 2) or rating is poor (less than 2), then the movie is a flop. Otherwise the movie is average.

Write a program that takes 2 integers:

the first integer is the acting power

second integer is the critic's rating.

You have to print Yes if the movie is a hit, Maybe if the movie is average and No if the movie is flop.

Example input:

9 5

Output:

Yes

Example input:

1 9

Output:

No

Example input:

6 4

Output:

Maybe

For example:

Input	Result
9 5	Yes
1 9	No
6 4	Maybe

Answer: (penalty regime: 0 %)

```

1 import java.util.Scanner;
2 public class movie{
3     public static void main(String args[]){
4         Scanner scan=new Scanner(System.in);
5         int a=scan.nextInt();
6         int b=scan.nextInt();
7         if(a<2 || b<2){
8             System.out.println("No");
9         }
10        else if(a>8|| b>8){
11            System.out.println("Yes");
12        }
13        else{
14            System.out.println("Maybe");
15        }
16    }
17 }
```

	Input	Expected	Got	
✓	9 5	Yes	Yes	✓
✓	1 9	No	No	✓
✓	6 4	Maybe	Maybe	✓

Passed all tests! ✓

◀ Lab-02-MCQ

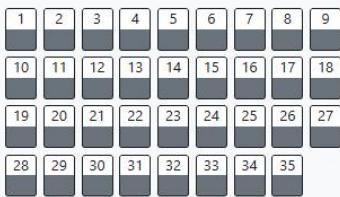
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Lab-03-MCQ ► //

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CS23333-Object Oriented Programming Using Java-2023

Quiz navigation



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Status	Finished
Started	Sunday, 6 October 2024, 11:58 PM
Completed	Monday, 7 October 2024, 12:28 AM
Duration	29 mins 33 secs

Question 1

Complete

Marked out of
1.00[Flag question](#)

Which of the following statements assigns the letter S to the third row and first column of a two-dimensional array named strGrid (assuming row-major order).

- a. strGrid[0][0] = "S";
- b. strGrid[3][1] = "S";
- c. strGrid[0][2] = "S";
- d. strGrid[2][0] = "S";
- e. strGrid[1][3] = "S";

Question 2

Complete

Marked out of
1.00[Flag question](#)

Given the following:

```
double[][] things =  
{ {1.2, 9.0},  
  {9.2, 0.5, 0.0},  
  {7.3, 7.9, 1.2, 3.9} };
```

What is the value of things.length ?

- a. 2
- b. 9
- c. 4
- d. 3

Question 3

Complete

Marked out of
1.00

Flag question

Given the following code snippet:

```
float average[] = new float[6];
```

Assuming the above declaration is a local variable in a method of a class, after the above statement is executed, which of the following statement is false?

- a. average[0] is 0.0
- b. average[6] is undefined
- c. average.length is 6
- d. average[5] is undefined

Question 4

Complete

Marked out of
1.00

Flag question

An array elements are always stored in _____ memory locations.

- a. Sequential and Random
- b. Binary search
- c. Random
- d. Sequential

Question 5

Complete

Marked out of
1.00

Flag question

Because Java does not support pointers, Java array elements are accessed only through indexes.

- a. False
- b.
- c.
- d. True

Question 6

Complete

Marked out of
1.00

Flag question

Analyze the following code and choose the correct answer.

```
int[] arr = new int[5];
arr = new int[6];
```

Question 6

Complete

Marked out of
1.00[Flag question](#)

Analyze the following code and choose the correct answer.

```
int[] arr = new int[5];
arr = new int[6];
```

- a. The code has runtime errors because the variable arr cannot be changed once it is assigned.
- b. The code has compile errors because we cannot assign a different size array to arr.
- c. The code can compile and run fine. The second line assigns a new array to arr.
- d. The code has compile errors because the variable arr cannot be changed once it is assigned.

Question 7

Complete

Marked out of
1.00[Flag question](#)

What will be output for the following code?

```
class array_output
{
    public static void main(String args[])
    {
        int array_variable[][] = {{ 1, 2, 3}, { 4 , 5, 6}, { 7, 8, 9}};
        int sum = 0;
        for (int i = 0; i < 3; ++i)
            for (int j = 0; j < 3 ; ++j)
                sum = sum + array_variable[i][j];
        System.out.print(sum / 5);
    }
}
```

- a. 11
- b. 8
- c. 10
- d. 9

Question 8

Complete

Marked out of
1.00

Flag question

What is the output of the following code fragment:

```
int[] y = new int[5];
y[0] = 34;
y[1] = 88;
System.out.println(y[0] + " " + y[1] + " " + y[5]);
```

- a. The program is defective and will not compile
- b. 34 88 0
- c. 0 34 88
- d. 34 88 88

Question 9

Complete

Marked out of
1.00

Flag question

The following code prints:

```
for(int i =0; i<Arr[0].length;i++)
{
    System.out.print(Arr[Arr.length-1][i]+ " ");
}
```

- a. None of the mentioned
- b. Last row elements
- c. Middle row elements
- d. First row elements

Question 10

Complete

Marked out of
1.00

Flag question

Which of the following declares an array of int named img?

- a. int[] img;
- b. int img = int[];
- c.

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Question 10

Complete

Marked out of
1.00

Flag question

Which of the following declares an array of int named img?

- a. int[] img;
- b. int img = int[];
- c.
- d. int img;
- e. new int img[];

Question 11

Complete

Marked out of
1.00

Flag question

How many columns does a have if it is created as follows int[][] a = {{2, 4, 6, 8}, {1, 2, 3, 4}};?

- a. 8
- b. 2
- c.
- d. 4
- e. 6

Question 12

Complete

Marked out of
1.00

Flag question

The following code prints:

```
for(int i = 0; i < Arr[0].length; i++)  
{  
    System.out.print(Arr[0][i] + " ");  
}
```

- a. Middle row elements
- b. None of the mentioned
- c. First row elements
- d. Last row elements

Question 13

Although we use the term multidimensional arrays, a multidimensional array is really an array of

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- c. First row elements
- d. Last row elements

Question 13

Complete

Marked out of
1.00

Flag question

Although we use the term multidimensional arrays, a multidimensional array is really an array of

- a. Arrays
- b. Integers
- c. Loops
- d. Fields

Question 14

Complete

Marked out of
1.00

Flag question

In Java arrays are:

- a. None of the mentioned
- b. objects
- c. object references
- d. primitive data type

Question 15

Complete

Marked out of
1.00

Flag question

Java array indices start at

- a.
- b. 1
- c. 0
- d.

Question 16

Complete

Marked out of
1.00

Flag question

Which of the following will declare an array and initialize it?

- a. int a[] = new int(5);
- b. Array a = new Array(5);

Question 16

Complete

Marked out of
1.00

Flag question

Which of the following will declare an array and initialize it?

- a. int a[] = new int(5);
- b. Array a = new Array(5);
- c. int [5] array;
- d. int array[] = new int [5];

Question 17

Complete

Marked out of
1.00

Flag question

If an index value is less than 0 or greater than or equal to 'array name'.length in an array element access expression, an ____ is thrown.

- a. ArrayIndexOutOfBoundsException
- b. ArrayOutOfBoundsException
- c. ArraysIndexOutOfBoundsException
- d. ArrayIndexOutOfBoundsException

Question 18

Complete

Marked out of
1.00

Flag question

Which of the following is an illegal declaration of array?

- a. Dog mydogs[7];
- b. char [] mychars;
- c. int [] myscore[];
- d. Dog mydogs[];

Question 19

Complete

Marked out of
1.00

Flag question

The ith element in the array has an index:

- a. i
- b. i+1
- c. None of the mentioned
- d. i-1

Question 20

Complete

Marked out of
1.00

Flag question

Which will legally declare, construct, and initialize an array?

- a. int myList [] = {4, 3, 7};
- b. int [] myList = (5, 8, 2);
- c. int [] myList = {};
- d. int myList [] [] = {4,9,7,0};

Question 21

Complete

Marked out of
1.00

Flag question

Which of the following is FALSE about arrays on Java?

- a. None of the mentioned
- b. A java array is always an object
- c. Arrays in Java are always allocated on heap
- d. Length of array can be changed after creation of array

Question 22

Complete

Marked out of
1.00

Flag question

What would be the result of attempting to compile and run the following code?

```
public class HelloWorld{  
    public static void main(String[] args){  
        double[] x = new double[]{1, 2, 3};  
        System.out.println("Value is " + x[1]);  
    }  
}
```

- a. The program has a compile error because the syntax new double[]{1, 2, 3} is wrong and it should be replaced by {1, 2, 3}.
- b. The program compiles and runs fine and the output
- c. The program has a compile error because the syntax new double[]{1, 2, 3} is wrong and it should be replaced by new double[]{1.0, 2.0, 3.0};
- d. The program has a compile error because the syntax new double[]{1, 2, 3} is wrong and it should be replaced by new double[3]{1, 2, 3};

Question 23

Complete

Marked out of
1.00[Flag question](#)

What is the output of the following code fragment:

```
int[] ar = {2, 4, 6, 8};  
ar[0] = 23;  
ar[3] = ar[1];  
System.out.println( ar[0] + " " + ar[3] );
```

- a. 23 4
- b. 2 8
- c. 21
- d. 23 2

Question 24

Complete

Marked out of
1.00[Flag question](#)

Examine the following:

```
double[][] values =  
{ {1.2, 9.0, 3.2},  
  {9.2, 0.5, 1.5, -1.2},  
  {7.3, 7.9, 4.8} };
```

What is in values[3][0] ?

- a. 7.3
- b. 7.9
- c. There is no such array element
- d. 9.2

Question 25

Complete

Marked out of
1.00

Which of the following constructs and assigns to array a 2D array with 7 rows, but does not yet construct the rows?

- a. int[] array[7] = new int[];
- b. int[] array[7] = new int[7];

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Question 25

Complete

Marked out of
1.00

Flag question

Which of the following constructs and assigns to array a 2D array with 7 rows, but does not yet construct the rows?

- a. int[] array[7] = new int[];
- b. int[][] array = new int[7];
- c. int[] array = new int[0][7];
- d. int[][] array = new int[7][0];

Question 26

Complete

Marked out of
1.00

Flag question

Which of these operators is used to allocate memory to array variable in Java?

- a. new
- b. malloc
- c. alloc
- d. new malloc

Question 27

Complete

Marked out of
1.00

Flag question

In Java, each array object has a final field named ____ that stores the size of the array.

- a. width
- b. length
- c. distance
- d. size

Question 28

Complete

Marked out of
1.00

Flag question

```
int[][] Marks = new int[5][3]
```

This creates

- a. 2x4 2D Array
- b. 4x2 2D Array
- c. 5x3 2D Array

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Question 28

Complete

Marked out of
1.00

Flag question

`int[][] Marks = new int[5][3];`

This creates

- a. 2x4 2D Array
- b. 4x2 2D Array
- c. 5x3 2D Array
- d. 3x5 2D Array

Question 29

Complete

Marked out of
1.00

Flag question

What is output of the following code:

```
public class Test{  
    public static void main(String[] args){  
        int[] x = {120, 200, 016};  
        for(int i = 0; i < x.length; i++)  
            System.out.print(x[i] + " ");  
    }  
}
```

- a. 120 200 16
- b. 120 200 016
- c. 016 is a compile error. It should be written as 16.
- d. 120 200 14

Question 30

Complete

Marked out of
1.00

Flag question

Given:

```
int[][] items =  
{ { 0, 1, 3, 4},  
  { 4, 3, 99, 0, 7 },
```

Question 30

Complete

Marked out of
1.00

Flag question

Given:

```
int[][] items =  
{ { 0, 1, 3, 4 },  
  { 4, 3, 99, 0, 7 },  
  { 3, 2 } };
```

Which of the following fragments prints out every element of items?

- a.

```
for ( int row=0; row < items.length; row++ )  
{  
    System.out.println();  
    for ( int col=0; col < items[col].length; col++ )  
        System.out.print( items[row][col] + " " );  
}
```
- b.

```
for ( int row=0; row < items.length; row++ )  
{  
    System.out.println();  
    for ( int col=0; col < items.length; col++ )  
        System.out.print( items[row][col] + " " );  
}
```
- c.

```
for ( int row=0; row < items.length; row++ )  
{  
    System.out.println();  
    for ( int col=0; col < items[row].length; col++ )  
        System.out.print( items[row][col] + " " );  
}
```
- d.

```
for ( int row=0; row < items.length; row++ )  
{
```

Question 31

Complete

Marked out of
1.00

Flag question

What are the contents of arr after the following code has been executed?

```
int[][] arr = {{3,2,1},{1,2,3}};  
int value = 0;  
  
for (int row = 1; row < arr.length; row++) {  
    for (int col = 1; col < arr[0].length; col++) {  
        if (arr[row][col] % 2 == 1)  
        {  
            arr[row][col] = arr[row][col] + 1;  
        }  
        if (arr[row][col] % 2 == 0)  
        {  
            arr[row][col] = arr[row][col] * 2;  
        }  
    }  
}  
  
a. {{3, 2, 1}, {2, 4, 4}}  
b. {{6, 4, 2}, {2, 4, 6}}  
c. {{4, 4, 2}, {2, 4, 4}}  
d. {{3, 2, 1}, {1, 4, 8}}  
e. {{3, 2, 1}, {1, 4, 6}}
```

Question 32

Complete

Marked out of
1.00

Flag question

Given the following code segment, what is the value of sum after this code executes?

```
int[][] matrix = {{1,1,2,2},{1,2,2,4},{1,2,3,4},{1,4,1,2}};
```

Question 32

Complete

Marked out of
1.00

Flag question

Given the following code segment, what is the value of sum after this code executes?

```
int[] matrix = { {1,1,2,2},{1,2,2,4},{1,2,3,4},{1,4,1,2}};
```

```
int sum = 0;  
int col = matrix[0].length - 2;  
for (int row = 0; row < 4; row++)  
{  
    sum = sum + matrix[row][col];  
}  
  
a. 10  
b. 8  
c. 4  
d. 9  
e. 12
```

Question 33

Complete

Marked out of
1.00

Flag question

Which will legally declare, construct, and initialize an array?

- a. int [] myList = {"9", "6", "3"};
- b. int [3] myList = (9, 6, 3);
- c. int [] myList = {9, 6, 3};
- d. int myList[] [] = {9.6,3,0};

Question 34

Complete

Marked out of
1.00

Flag question

Arrays in Java are dynamically allocated using the ____ operator.

- a. arrayList
- b. dynamic
- c. new

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Complete

Marked out of
1.00[Flag question](#)

- a. int [] myList = {"9", "6", "3"};
- b. int [3] myList = (9, 6, 3);
- c. int [] myList = {9, 6, 3};
- d. int myList[] [] = {9,6,3,0};

Question 34

Complete

Marked out of
1.00[Flag question](#)

Arrays in Java are dynamically allocated using the ____ operator.

- a. arrayList
- b. dynamic
- c. new
- d. create

Question 35

Complete

Marked out of
1.00[Flag question](#)

Given the following:

```
double[][] things =  
{ {1.2, 9.0},  
  {9.2, 0.5, 0.0},  
  {7.3, 7.9, 1.2, 3.9} };
```

What is the value of things[[2].length ?

- a. 4
- b. 2
- c. 9
- d. 3

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Status Finished

Started Sunday, 29 September 2024, 6:48 PM

Completed Sunday, 29 September 2024, 7:59 PM

Duration 1 hour 10 mins

Question 1

Correct

Marked out of 5.00

Given an array of numbers, you are expected to return the sum of the longest sequence of POSITIVE numbers in the array.

If there are NO positive numbers in the array, you are expected to return -1.

In this question's scope, the number 0 should be considered as positive.

Note: If there are more than one group of elements in the array having the longest sequence of POSITIVE numbers, you are expected to return the total sum of all those POSITIVE numbers (see example 3 below).

input1 represents the number of elements in the array.

input2 represents the array of integers.

Example 1:

input1 = 16

input2 = {-12, -16, 12, 18, 18, 14, -4, -12, -13, 32, 34, -5, 66, 78, 78, -79}

Expected output = 62

Explanation:

The input array contains four sequences of POSITIVE numbers, i.e. "12, 18, 18, 14", "12", "32, 34", and "66, 78, 78". The first sequence "12, 18, 18, 14" is the longest of the four as it contains 4 elements. Therefore, the expected output = sum of the longest sequence of POSITIVE numbers = $12 + 18 + 18 + 14 = 63$.

Example 2:

input1 = 11

input2 = {-22, -24, 16, -1, -17, -19, -37, -25, -19, -93, -61}

Expected output = -1

Explanation:

There are NO positive numbers in the input array. Therefore, the expected output for such cases = -1.

Example 3:

input1 = 16

input2 = {-58, 32, 26, 92, -10, -4, 12, 0, 12, -2, 4, 32, -9, -7, 78, -79}

Expected output = 174

Explanation:

The input array contains four sequences of POSITIVE numbers, i.e. "32, 26, 92", "12, 0, 12", "4, 32", and "78". The first and second sequences "32, 26, 92" and "12, 0, 12" are the longest of the four as they contain 4 elements each. Therefore, the expected output = sum of the longest sequence of POSITIVE numbers = $(32 + 26 + 92) + (12 + 0 + 12) = 174$.

For example:

Input	Result
16 -12 -16 12 18 18 14 -4 -12 -13 32 34 -5 66 78 78 -79	62
11 -22 -24 -16 -1 -17 -19 -37 -25 -19 -93 -61	-1
16 -58 32 26 92 -10 -4 12 0 12 -2 4 32 -9 -7 78 -79	174

Answer: (penalty regime: 0 %)

```

1 import java.util.Scanner;
2 public class pos{
3     public static void main(String args[]){
4         Scanner scan=new Scanner(System.in);
5         int i;
6         int a=scan.nextInt();
7         int[] arr=new int[a];
8         for(i=0;i<a;i++){
9             arr[i]=scan.nextInt();

```

```

10     }
11     System.out.println(find(a,arr));
12
13 }
14 public static int find(int n,int[] arrr){
15     int maxlen=0;
16     int curlen=0;
17     int cursum=0;
18     int totalsum=0;
19     for(int num:arrr){
20         if(num>=0){
21             curlen++;
22             cursum+=num;
23         }
24         else{
25             if(curlen>maxlen){
26                 maxlen=curlen;
27                 totalsum=cursum;
28             }
29             else if(curlen==maxlen){
30                 totalsum+=cursum;
31             }
32             curlen=0;
33             cursum=0;
34         }
35     }
36     if(curlen>maxlen){
37         totalsum=cursum;
38     }
39     else if(curlen==maxlen){
40         totalsum+=cursum;
41     }
42     return maxlen>0 ? totalsum : -1;
43 }
44 }
```

	Input	Expected	Got	
✓	16 -12 -16 12 18 18 14 -4 -12 -13 32 34 -5 66 78 78 -79	62	62	✓
✓	11 -22 -24 -16 -1 -17 -19 -37 -25 -19 -93 -61	-1	-1	✓
✓	16 -58 32 26 92 -10 -4 12 0 12 -2 4 32 -9 -7 78 -79	174	174	✓

Passed all tests! ✓

Question 2

Correct

Marked out of 5.00

You are provided with a set of numbers (array of numbers).

You have to generate the sum of specific numbers based on its position in the array set provided to you.

This is explained below:

Example 1:

Let us assume the encoded set of numbers given to you is:

input1:5 and input2: {1, 51, 436, 7860, 41236}

Step 1:

Starting from the 0th index of the array pick up digits as per below:

0th index – pick up the units value of the number (in this case is 1).

1st index - pick up the tens value of the number (in this case it is 5).

2nd index - pick up the hundreds value of the number (in this case it is 4).

3rd index - pick up the thousands value of the number (in this case it is 7).

4th index - pick up the ten thousands value of the number (in this case it is 4).

(Continue this for all the elements of the input array).

The array generated from Step 1 will then be – {1, 5, 4, 7, 4}.

Step 2:

Square each number present in the array generated in Step 1.

{1, 25, 16, 49, 16}

Step 3:

Calculate the sum of all elements of the array generated in Step 2 to get the final result. The result will be = 107.

Note:

- 1) While picking up a number in Step1, if you observe that the number is smaller than the required position then use 0.
- 2) In the given function, input1[] is the array of numbers and input2 represents the number of elements in input1.

Example 2:

input1: 5 and input1: {1, 5, 423, 310, 61540}

Step 1:

Generating the new array based on position, we get the below array:

{1, 0, 4, 0, 6}

In this case, the value in input1 at index 1 and 3 is less than the value required to be picked up based on position, so we use a 0.

Step 2:

{1, 0, 16, 0, 36}

Step 3:

The final result = 53.

For example:

Input	Result
5 1 51 436 7860 41236	107
5 1 5 423 310 61540	53

Answer: (penalty regime: 0 %)

```

1 import java.util.Scanner;
2 import java.util.ArrayList;
3 public class sum{
4     public static void main(String[] args){
5         Scanner scan=new Scanner(System.in);

```

```

6     int a=scan.nextInt();
7     int[] arr=new int[a];
8     for(int i=0;i<a;i++){
9         arr[i]=scan.nextInt();
10    }
11    System.out.println(calcsum(a,arr));
12
13
14 }
15 public static int calcsum(int size,int[] numbers){
16     ArrayList<Integer> digitArray=new ArrayList<>();
17     for(int i=0;i<size;i++){
18         int num=numbers[i];
19         int digit=getDigit(num,i);
20         digitArray.add(digit);
21     }
22     int sumofsquares=0;
23     for(int digit:digitArray){
24         sumofsquares+=digit*digit;
25     }
26     return sumofsquares;
27 }
28 public static int getDigit(int number,int position){
29     return (number/(int) Math.pow(10,position))%10;
30 }
31 }
```

	Input	Expected	Got	
✓	5 1 51 436 7860 41236	107	107	✓
✓	5 1 5 423 310 61540	53	53	✓

Passed all tests! ✓

Question 3

Correct

Marked out of 5.00

Given an integer array as input, perform the following operations on the array, in the below specified sequence.

1. Find the maximum number in the array.
2. Subtract the maximum number from each element of the array.
3. Multiply the maximum number (found in step 1) to each element of the resultant array.

After the operations are done, return the resultant array.

Example 1:

`input1 = 4` (represents the number of elements in the `input1` array)

`input2 = {1, 5, 6, 9}`

Expected Output = `{-72, -36, 27, 0}`

Explanation:

Step 1: The maximum number in the given array is 9.

Step 2: Subtracting the maximum number 9 from each element of the array:

$\{(1 - 9), (5 - 9), (6 - 9), (9 - 9)\} = \{-8, -4, -3, 0\}$

Step 3: Multiplying the maximum number 9 to each of the resultant array:

$\{(-8 \times 9), (-4 \times 9), (3 \times 9), (0 \times 9)\} = \{-72, -36, -27, 0\}$

So, the expected output is the resultant array `{-72, -36, -27, 0}`.

Example 2:

`input1 = 5` (represents the number of elements in the `input1` array)

`input2 = {10, 87, 63, 42, 2}`

Expected Output = `{-6699, 0, -2088, -3915, -7395}`

Explanation:

Step 1: The maximum number in the given array is 87.

Step 2: Subtracting the maximum number 87 from each element of the array:

$\{(10 - 87), (87 - 87), (63 - 87), (42 - 87), (2 - 87)\} = \{-77, 0, -24, -45, -85\}$

Step 3: Multiplying the maximum number 87 to each of the resultant array:

$\{(-77 \times 87), (0 \times 87), (-24 \times 87), (-45 \times 87), (-85 \times 87)\} = \{-6699, 0, -2088, -3915, -7395\}$

So, the expected output is the resultant array `{-6699, 0, -2088, -3915, -7395}`.

Example 3:

`input1 = 2` (represents the number of elements in the `input1` array)

`input2 = {-9, 9}`

Expected Output = `{-162, 0}`

Explanation:

Step 1: The maximum number in the given array is 9.

Step 2: Subtracting the maximum number 9 from each element of the array:

$\{(-9 - 9), (9 - 9)\} = \{-18, 0\}$

Step 3: Multiplying the maximum number 9 to each of the resultant array:

$\{(-18 \times 9), (0 \times 9)\} = \{-162, 0\}$

So, the expected output is the resultant array `{-162, 0}`.

Note: The input array will contain not more than 100 elements

For example:

Input	Result
4 1 5 6 9	-72 -36 -27 0

Input	Result
5 10 87 63 42 2	-6699 0 -2088 -3915 -7395
2 -9 9	-162 0

Answer: (penalty regime: 0 %)

```

1 import java.util.Scanner;
2 public class ArrayOperations{
3     public static void main(String[] args){
4         Scanner scan=new Scanner(System.in);
5         int n=scan.nextInt();
6         int[] arr=new int[n];
7         for(int i=0;i<n;i++){
8             arr[i]=scan.nextInt();
9         }
10        int[] result=performOperations(arr);
11        for(int value:result){
12            System.out.print(value+" ");
13        }
14    }
15    public static int[] performOperations(int[] arr){
16        int max=findMax(arr);
17        for(int i=0;i<arr.length;i++){
18            arr[i]-=max;
19        }
20        for(int i=0;i<arr.length;i++){
21            arr[i]*=max;
22        }
23        return arr;
24    }
25    public static int findMax(int[] arr){
26        int max=Integer.MIN_VALUE;
27        for(int num:arr){
28            if(num>max){
29                max=num;
30            }
31        }
32        return max;
33    }
34 }
```

	Input	Expected	Got	
✓	4 1 5 6 9	-72 -36 -27 0	-72 -36 -27 0	✓
✓	5 10 87 63 42 2	-6699 0 -2088 -3915 -7395	-6699 0 -2088 -3915 -7395	✓
✓	2 -9 9	-162 0	-162 0	✓

Passed all tests! ✓

◀ Lab-03-MCQ

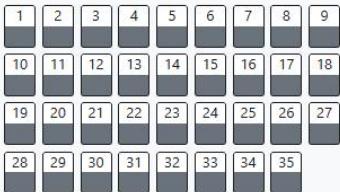
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Simple Encoded Array ►

REC-CIS

CS23333-Object Oriented Programming Using Java-2023

Quiz navigation



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Status Finished

Started Monday, 7 October 2024, 5:14 PM

Completed Monday, 7 October 2024, 5:20 PM

Duration 6 mins 13 secs

Question 1

Complete

Marked out of
1.00

Flag question

Here is a method definition:

```
int compute( int a, double y ){ ... }
```

Which of the following has a different signature?

- a. int compute(int a, int y){ ... }
- b. double compute(int sum, double y){ ... }
- c. int compute(int sum, double value){ ... }
- d. double compute(int a, double y){ ... }

Question 2

Complete

Marked out of
1.00

Flag question

What is a method's signature?

- a. The signature of a method is the name of the method and the names of its parameters.
- b. The signature of a method is the name of the method and the type of its return value.
- c. The signature of a method is the name of the method and the data types of its parameters.
- d. The signature of a method is the name of the method, its parameter list, and its return type.

Question 3

Complete

Marked out of
1.00

Flag question

Given the following,

```
1. long test( int x, float y ) {  
2.  
3. }
```

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1.00

Flag question

- b. The signature of a method is the name of the method and the type of its return value.
- c. The signature of a method is the name of the method and the data types of its parameters.
- d. The signature of a method is the name of the method, its parameter list, and its return type.

Question 3

Complete

Marked out of
1.00

Flag question

Given the following,

```
1. long test( int x, float y ) {  
2.  
3. }
```

Which one of the following line inserted at line 2 would not compile?

- a. return x / 7;
- b. return (int) 3.14d;
- c. return (long) y;
- d. return (y / x);

Question 4

Complete

Marked out of
1.00

Flag question

Which one of the following is generally a valid definition of an application's main() method ?

- a. public static void main(String args);
- b. public static void main(Graphics g);
- c. public static void main(String [] args);
- d. public static void main();

Question 5

Complete

Marked out of
1.00

Flag question

Which of the following is the general scheme for a class definition:

- a. class ClassName
- {

Question 5

Complete

Marked out of
1.00

Flag question

Which of the following is the general scheme for a class definition:

a. class ClassName
{
 public static void main (String[] args)
 {
 // entire program goes here
 }
}

b. class ClassName
{
 // Description of the instance variables.

 // Description of the constructors.

 // Description of the methods.
}

c. Class ClassName
{
 // Description of the instance variables.

 // Description of the constructors.

 // Description of the methods.
}

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```
}
```

d. ClassName
{
 // Description of the instance variables.

 // Description of the constructors.

 // Description of the methods.
}

Question 6

Complete

Marked out of
1.00

Flag question

Here is the general syntax for method definition:

```
accessModifier returnType methodName( parameterList )
{
    Java statements

    return returnValue;
}
```

What is true for the returnType and the returnValue?

- a. The returnValue can be any type, but will be automatically converted to returnType when the method returns to the caller.
- b. The returnValue must be the same type as the returnType, or be of a type that can be converted to returnType without loss of information.
- c. The returnValue must be exactly the same type as the returnType.
- d. If the returnType is void then the returnValue can be any type.

Question 7

What term is used for hiding the details of an object from the other parts of a program?

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Question 7

Complete

Marked out of
1.00

Flag question

What term is used for hiding the details of an object from the other parts of a program?

- a. Data Mining
- b. Compilation
- c. Obfuscation
- d. Encapsulation

Question 8

Complete

Marked out of
1.00

Flag question

What attributes do all real world objects have?

- a. Objects have state and behavior.
- b. Objects have existence.
- c. Objects have size and weight.
- d. Objects have identity, state, and behavior.

Question 9

Complete

Marked out of
1.00

Flag question

What attributes do all Software objects have?

- a. Software objects have RAM, ROM, and processors.
- b. Software objects have variables and storage.
- c. Software objects are made of computer components.
- d. Software objects have identity, state, and behavior.

Question 10

Complete

Marked out of
1.00

Flag question

When you run a Java application by typing java someClass what is the first method that starts?

- a. The applet method.
- b. The main() method of someClass.
- c. The run() method someClass.
- d. The someClass method.

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Question 11

Complete

Marked out of
1.00

Flag question

- d. The someClass method.

What is a class?

- a. A class is a section of computer memory containing objects.
- b. A class is a description of a kind of object.
- c. A class is a section of the hard disk reserved for object oriented programs.
- d. A class is the part of an object that contains the variables.

Question 12

Complete

Marked out of
1.00

Flag question

What is another name for creating an object?

- a. initialization
- b. insubordination
- c. inheritance
- d. instantiation

Question 13

Complete

Marked out of
1.00

Flag question

How many objects of a given class may be constructed in an application?

- a. As many as the application asks for.
- b. Only one per class.
- c. One object per variable.
- d. Only one per constructor.

Question 14

Complete

Marked out of
1.00

Which of the following invokes the method length() of the object str and stores the result in val?

- a. val = length(str);

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Question 14

Complete

Marked out of
1.00

Flag question

Which of the following invokes the method length() of the object str and stores the result in val?

- a. val = length(str);
- b. val = length().str
- c. val = length.str()
- d. val = str.length()

Question 15

Complete

Marked out of
1.00

Flag question

What is an actual parameter?

- a. A variable used to control a counting loop.
- b. The value that is returned by a method.
- c. The identifier used in a method to stand for the value that is passed into a method by a caller.
- d. The value that is passed into a method by a caller.

Question 16

Complete

Marked out of
1.00

Flag question

Each object of the class contains its own copy of instance variables.

- a. True
- b. False

Question 17

Complete

Marked out of
1.00

Flag question

Can you say that behaviour of an object is similar to method of the class?

- a. True
- b. False

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Question 17

Complete

Marked out of
1.00

Flag question

Can you say that behaviour of an object is similar to method of the class?

- a. True
- b. False

Question 18

Complete

Marked out of
1.00

Flag question

```
public class Test1 {  
    int i = 10;  
    public static void main(String[] args) {  
        int i = 50;  
        System.out.println(i);  
        Test1 obj = new Test1();  
        obj.printNumber(obj.i);  
    }  
    public void printNumber(int i) {  
        System.out.println(i);  
    }  
}
```

What will be the output?

- a. 50
- b. Compilation error because of duplicate variable
- c. Compilation error because static method is accessing nonstatic data member
- d. 50

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 d. 50

10

Question 19

Complete

Marked out of
1.00[Flag question](#)

```
class Test {  
    int x = 20;  
  
    void display(int x) {  
        System.out.println(x);  
        System.out.println(this.x);  
    }  
  
    public static void main(String[] args) {  
        Test t = new Test();  
        t.display(30);  
    }  
}
```

What is the output of the above program?

 a. 20

30

 b. 30

20

 c. 20

20

 d. 30

30

30

Question 20

Complete

Marked out of
1.00

Flag question

What is the widest valid returnType for method A in line 3?

```
public class ReturnIt {  
    returnType methodA(byte x, double y) /* Line 3 */  
    {  
        return (long) x / y * z;  
    }  
}
```

- a. float
- b. int
- c. double
- d. long

Question 21

Complete

Marked out of
1.00

Flag question

What are not the characteristics of object?

- a. identity
- b. behaviours
- c. state
- d. variables

Question 22

Complete

Marked out of
1.00

What is the output of the following program?

```
public class Employee {
```

Question 22

Complete

Marked out of
1.00[Flag question](#)

What is the output of the following program?

```
public class Employee {  
    public String firstName;  
    public String lastName;  
    public int age;  
    public char gender;  
  
    public Employee(String firstNameForThisObject, String lastNameForThisObject, char gender) {  
        firstName = firstNameForThisObject;  
        lastName = lastNameForThisObject;  
        gender = gender;  
    }  
  
    public static void main(String[] args) {  
        Employee employee = new Employee("firstNameForThisObject", "lastNameForThisObject", 'M');  
        System.out.println("first name is:" + employee.firstName);  
        System.out.println("last name is:" + employee.lastName);  
        System.out.println("age is:" + employee.age);  
        System.out.println("gender is:" + employee.gender);  
    }  
}
```

- a. Runtime error
- b. first name is:firstNameForThisObject
last name is:lastNameForThisObject
age is:0

- a. Runtime error
- b. first name is:firstNameForThisObject
last name is:lastNameForThisObject
age is:0
gender is:
- c. first name is:firstNameForThisObject
last name is:lastNameForThisObject
age is:0
gender is:M
- d. Compilation error

Question 23
Complete
Marked out of 1.00
[Flag question](#)

You read the following statement in a Java program that compiles and executes.
submarine.dive(depth);

- a. depth must be an int
- b. submarine must be a method
- c. dive must be a method.
- d. dive must be the name of an instance field
- e. submarine must be the name of a interface

Question 24
Complete
Marked out of 1.00
[Flag question](#)

Which of the following statement is TRUE with respect to class and members of a class?

- a. It is mandatory to use an access specifier along with declaration statement of a member variable
- b. It is mandatory to initialize member variables while declaring them in a class.
- c. It is mandatory for every class to declare a main() method inside it.

REC-CIS

Question 24

Complete

Marked out of
1.00

Flag question

Which of the following statement is TRUE with respect to class and members of a class?

- a. It is mandatory to use an access specifier along with declaration statement of a member variable
- b. It is mandatory to initialize member variables while declaring them in a class.
- c. It is mandatory for every class to declare a main() method inside it.
- d. It is mandatory to specify return type along with the method definition in a class.

Question 25

Complete

Marked out of
1.00

Flag question

There can be more than one java class in same file if.

- a. All classes are having public access modifier
- b. All the classes are having private access modifier
- c. Only 1 class has public access modifier and has the same name as the java file
- d. All classes are having protected access modifier

Question 26

Complete

Marked out of
1.00

Flag question

How many references can there be to a single object?

- a. There can be any number of references, held in any number of variables and parameters (as long as they are of the correct type.)
- b. Two: one in a caller and one in the called method.
- c. Three: the original reference, and one reference each for a formal and an actual parameter.
- d. Only one.

Question 27

Complete

Marked out of
1.00

Flag question

What is stored in the object obj in following lines of code?

```
box obj;
```

- a. Memory address of allocated memory of object
- b. Garbage

REC-CIS

- d. Only one.

Question 27

Complete

Marked out of
1.00

 Flag question

What is stored in the object obj in following lines of code?

box obj;

- a. Memory address of allocated memory of object
- b. Garbage
- c. Any arbitrary pointer
- d. NULL

Question 28

Complete

Marked out of
1.00

 Flag question

Which of these keywords is used to make a class?

- a. None of the mentioned
- b. class
- c. int
- d. struct

Question 29

Complete

Marked out of
1.00

 Flag question

Which of the following is a valid declaration of an object of class Box?

- a. Box obj = new Box();
- b.
- c. new Box obj;
- d. obj = new Box();
- e. Box obj = new Box;

Question 30

Complete

Marked out of
1.00

Flag question

Which of these operators is used to allocate memory for an object?

- a. give
- b. malloc
- c. alloc
- d. new

Question 31

Complete

Marked out of
1.00

Flag question

Which of these statement is incorrect?

- a. Every class must contain a main() method
- b. main() method must be made public
- c. There can be only one main() method in a program
- d. Applets do not require a main() method at all

Question 32

Complete

Marked out of
1.00

Flag question

What is the output of this program?

```
class main_class
{
    public static void main(String args[])
    {
        int x = 9;
        if (x == 9)
        {
            int x = 8;
            System.out.println(x);
        }
    }
}
```

Question 32

Complete

Marked out of
1.00

Flag question

What is the output of this program?

```
class main_class
{
    public static void main(String args[])
    {
        int x = 9;
        if (x == 9)
        {
            int x = 8;
            System.out.println(x);
        }
    }
}
```

- a. Compilation Error
- b. 8
- c. Runtime Error
- d. 9

Question 33

Complete

Marked out of
1.00

Flag question

What is the output of this program?

```
class box
{
    int width;
    int height;
    int length;
```

Question 33

Complete

Marked out of
1.00[Flag question](#)

What is the output of this program?

```
class box
{
    int width;
    int height;
    int length;
}

class mainclass
{
    public static void main(String args[])
    {
        box obj = new box();
        obj.width = 10;
        obj.height = 2;
        obj.length = 10;
        int y = obj.width * obj.height * obj.length;
        System.out.printobj;
    }
}
```

- a. 200
- b. 12
- c. 400
- d. 100

REC-CIS

Question 34

Complete

Marked out of
1.00[Flag question](#)

What is the output of this program?

```
class box
{
    int width;
    int height;
    int length;
}

class mainclass
{
    public static void main(String args[])
    {
        box obj1 = new box();
        box obj2 = new box();
        obj1.height = 1;
        obj1.length = 2;
        obj1.width = 1;
        obj2 = obj1;
        System.out.println(obj2.height);
    }
}
```

- a. 2
- b. Garbage Value
- c. Runtime error
- d. 1

REC-CIS

 c. Runtime error d. 1**Question 35**

Complete

Marked out of
1.00

Flag question

What is the output of this program?

```
class box
{
    int width;
    int height;
    int length;
}

class mainclass
{
    public static void main(String args[])
    {
        box obj = new box();
        System.out.println(obj);
    }
}
```

 a. 1 b. classname@hashcode in hexadecimal form c. Runtime error d. 0

Finish review



86°F

Haze



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Status Finished

Started Sunday, 6 October 2024, 10:35 AM

Completed Sunday, 6 October 2024, 10:53 AM

Duration 17 mins 8 secs

Question 1

Correct

Marked out of 5.00

Create a Class Mobile with the attributes listed below,

```
private String manufacturer;
private String operating_system;
public String color;
private int cost;
```

Define a Parameterized constructor to initialize the above instance variables.

Define getter and setter methods for the attributes above.

for example : setter method for manufacturer is

```
void setManufacturer(String manufacturer){
    this.manufacturer= manufacturer;
}
```

```
String getManufacturer(){
    return manufacturer;
}
```

Display the object details by overriding the `toString()` method.

For example:

Test	Result
1	manufacturer = Redmi operating_system = Andriod color = Blue cost = 34000

Answer: (penalty regime: 0 %)

```
1 class prog{
2     public static void main(String[] args){
3         System.out.println("manufacturer = Redmi");
4         System.out.println("operating_system = Andriod");
5         System.out.println("color = Blue");
6         int c = 34000;
7         System.out.println("cost = "+c);
8     }
9 }
```

	Test	Expected	Got	
✓	1	manufacturer = Redmi operating_system = Andriod color = Blue cost = 34000	manufacturer = Redmi operating_system = Andriod color = Blue cost = 34000	✓

Passed all tests! ✓

Question 2

Correct

Marked out of 5.00

Create a class Student with two private attributes, name and roll number. Create three objects by invoking different constructors available in the class Student.

Student()

Student(String name)

Student(String name, int rollno)

Input:

No input

Output:**No-arg constructor is invoked****1 arg constructor is invoked****2 arg constructor is invoked****Name =null , Roll no = 0****Name =Rajalakshmi , Roll no = 0****Name =Lakshmi , Roll no = 101****For example:**

Test	Result
1	No-arg constructor is invoked 1 arg constructor is invoked 2 arg constructor is invoked Name =null , Roll no = 0 Name =Rajalakshmi , Roll no = 0 Name =Lakshmi , Roll no = 101

Answer: (penalty regime: 0 %)

```

1 class prog{
2     private String name;
3     private int rollNo;
4     public prog(){
5         System.out.println("No-arg constructor is invoked");
6         this.name=null;
7         this.rollNo=0;
8     }
9     public prog(String name){
10        System.out.println("1 arg constructor is invoked");
11        this.name=name;
12        this.rollNo=0;
13    }
14    public prog(String name,int rollNo){
15        System.out.println("2 arg constructor is invoked");
16        this.name=name;
17        this.rollNo= rollNo;
18    }
19    public void display(){
20        System.out.println("Name =" +name+ " , Roll no = "+rollNo);
21    }
22    public static void main(String[] args){
23        prog student1= new prog();
24        prog student2= new prog("Rajalakshmi");
25        prog student3=new prog("Lakshmi",101);
26        student1.display();
27        student2.display();
28        student3.display();
29    }
30 }
```

	Test	Expected	Got	
✓	1	No-arg constructor is invoked 1 arg constructor is invoked 2 arg constructor is invoked Name =null , Roll no = 0 Name =Rajalakshmi , Roll no = 0 Name =Lakshmi , Roll no = 101	No-arg constructor is invoked 1 arg constructor is invoked 2 arg constructor is invoked Name =null , Roll no = 0 Name =Rajalakshmi , Roll no = 0 Name =Lakshmi , Roll no = 101	✓

Passed all tests! ✓

Question 3

Correct

Marked out of 5.00

Create a class called "Circle" with a radius attribute. You can access and modify this attribute using getter and setter methods. Calculate the area and circumference of the circle.

Area of Circle = πr^2

Circumference = $2\pi r$

Input:

2

Output:

Area = 12.57

Circumference = 12.57

For example:

Test	Input	Result
1	4	Area = 50.27 Circumference = 25.13

Answer: (penalty regime: 0 %)

[Reset answer](#)

```

1 import java.io.*;
2 import java.util.Scanner;
3 class Circle
4 {
5     private double radius;
6     public Circle(double radius){
7         // set the instance variable radius
8         this.radius=radius;
9     }
10    }
11    public void setRadius(double radius){
12        // set the radius
13        this.radius=radius;
14    }
15    public double getRadius()    {
16        // return the radius
17        return this.radius;
18    }
19    public double calculateArea() { // complete the below statement
20        return Math.PI*radius*radius;
21    }
22    public double calculateCircumference()    {
23        // complete the statement
24        return 2*Math.PI*radius;
25    }
26 }
27 class prog{
28     public static void main(String[] args)  {
29         int r;
30         Scanner sc= new Scanner(System.in);
31         r=sc.nextInt();
32         Circle c= new Circle(r);
33         System.out.println("Area = "+String.format("%.2f", c.calculateArea()));
34         // invoke the calculatecircumference method
35         System.out.println("Circumference = "+String.format("%.2f",c.calculateCircumference()));
36     }
37 }
```

	Test	Input	Expected	Got	
✓	1	4	Area = 50.27 Circumference = 25.13	Area = 50.27 Circumference = 25.13	✓
✓	2	6	Area = 113.10 Circumference = 37.70	Area = 113.10 Circumference = 37.70	✓
✓	3	2	Area = 12.57 Circumference = 12.57	Area = 12.57 Circumference = 12.57	✓

Passed all tests! ✓

◀ Lab-04-MCQ

Jump to...

Number of Primes in a specified range ►

CS23333-Object Oriented Programming Using Java-2023

Quiz navigation

1	2	3	4	5	6
7	8	9	10	11	12
13	14	15	16	17	18
19	20	21	22	23	24
25	26	27	28	29	30
31	32	33	34	35	

Show one page at a time

Finish review

Status	Finished
Started	Sunday, 6 October 2024, 10:43 PM
Completed	Sunday, 6 October 2024, 11:02 PM
Duration	18 mins 43 secs

Question 1

Complete

Marked out of
1.00

Flag question

Say that there are three classes: Computer, AppleComputer, and IBMComputer. What are the likely relationships between these classes?

- a. IBMComputer is the superclass, AppleComputer and Computer are subclasses of IBMComputer.
- b. Computer, AppleComputer and IBMComputer are sibling classes.
- c. Computer is a superclass, AppleComputer is a subclasses of Computer, and IBMComputer is a sublcas of AppleComputer
- d. Computer is the superclass, AppleComputer and IBMComputer are subclasses of Computer.

Question 2

Complete

Marked out of
1.00

Flag question

What restriction is there on using the super reference in a constructor?

- a. It must be used in the first statement of the constructor.
- b. Only one child class can use it.
- c. It can only be used in the parent's constructor.
- d. It must be used in the last statement of the constructor.

Question 3

Complete

Marked out of
1.00

 [Flag question](#)

Say that class Rodent has a child class Rat and another child class Mouse. Class Mouse has a child class PocketMouse. Examine the following

Rodent rod;

Rat rat = new Rat();

Mouse mos = new Mouse();

PocketMouse pkt = new PocketMouse();

Which one of the following will cause a compiler error?

- a. rod = rat;
- b. rod = mos;
- c. pkt = rat;
- d. pkt = null;

Question 4

Complete

Marked out of
1.00

 [Flag question](#)

Which one of the following statement is false?

- a. The subclass of a non-abstract class can be declared abstract.
- b. All members of the superclass are inherited by the subclass.
- c. A final class cannot be abstract.
- d. A top level class in which all the members are declared private, can be declared public.

Question 5

Complete

Marked out of
1.00[Flag question](#)

Given the following:

```
class Vehicle {}  
class FourWheeler extends Vehicle {}  
class Car extends FourWheeler {}  
  
public class TestVehicle  
{  
    public static void main(String[] args)  
    {  
        Vehicle v = new Vehicle();  
        FourWheeler f = new FourWheeler();  
        Car c = new Car();  
  
        xxxxxxxx  
    }  
}
```

Which of the following statement is legal, which can be substituted for xxxxxxx?

- a. c = f;
- b. v = c;
- c. c = v;
- d. f = v;

Question 6

Complete

Marked out of
1.00

 Flag question

- d. `f = v;`

```
class A { A(int i) {} } // 1
```

```
class B extends A {} // 2
```

Which one of the following statements is correct?

- a. compiler attempts to create a default constructor for class A.
- b. Compiles successfully without any errors.
- c. Compile-time error at 1.
- d. Compile-time error at 2.

Question 7

Complete

Marked out of
1.00

 Flag question

Which statement is true?

- a. If `super()` is the first statement in the body of a constructor, then `this()` can be declared as the second statement.
- b. If both a subclass and its superclass do not have any declared constructors, the implicit default constructor of the subclass will call `super()` when run.
- c. A `super()` or `this()` call must always be provided explicitly as the first statement in the body of a constructor.
- d. If neither `super()` nor `this()` is declared as the first statement in the body of a constructor, then `this()` will implicitly be inserted as the first statement.

Question 8

Complete

Marked out of
1.00

 [Flag question](#)

Consider the following class hierarchies

```
class A {}  
class B extends A {}  
class C extends B {}
```

And the following method declaration

```
public B doSomething  {  
    // some valid code fragments  
    return xx;  
}
```

Objects of which class (from the hierarchy shown above) can be safely substituted in place of xx in the method doSomething  ?

- a. An array object of class C
- b. An array object of class B
- c. Object of class A
- d. Object of class C

Question 9

Complete

Marked out of
1.00

 [Flag question](#)

Which statement is true about the use of modifiers?

- a. You cannot specify accessibility of local variables. They are only accessible within the block in which they are declared.
- b. Subclasses of a class must reside in the same package as the class they extend.
- c. If no accessibility modifier (public, protected, and private) is specified for a member declaration, the member is only accessible for classes in the same package and subclasses of its class in any package.
- d. Local variables can be declared static.

Question 10

Complete

Marked out of
1.00

 [Flag question](#)

Which statement is true?

- a. If neither super() nor this() is declared as the first statement in the body of a constructor, then this() will implicitly be inserted as the first statement.
- b. If super() is the first statement in the body of a constructor, then this() can be declared as the second statement.
- c. A super() or this() call must always be provided explicitly as the first statement in the body of a constructor.
- d. If both a subclass and its superclass do not have any declared constructors, the implicit default constructor of the subclass will call super() when run.

Question 11

Complete

Marked out of
1.00

 Flag question

```
1. public class TestPoly {  
2.     public static void main(String [] args ){  
3.         Parent p = new Child();  
4.     }  
5. }  
6.  
7. class Parent {  
8.     public Parent() {  
9.         super();  
10.        System.out.println("instantiate a parent");  
11.    }  
12. }  
13.  
14. class Child extends Parent {  
15.     public Child() {  
16.         System.out.println("instantiate a child");  
17.     }  
18. }
```

What is the result?

- a. instantiate a parent
- b. instantiate a child
instantiate a parent
- c. instantiate a parent
instantiate a child
- d. instantiate a child

Question 12

Complete

Marked out of
1.00

[Flag question](#)

- a. instantiate a child

Which of the following statements are incorrect?

- a. public members of class can be accessed by any code in the program.
- b. private members of class can only be accessed by other members of the class.
- c. private members of class can be inherited by a sub class, and become protected members in sub class.
- d. protected members of a class can be inherited by a sub class, and become private members of the sub class.

Question 13

Complete

Marked out of
1.00

[Flag question](#)

What type of inheritance does Java have?

- a. class inheritance
- b. double inheritance
- c. multiple inheritance
- d. single inheritance

Question 14

Complete

Marked out of
1.00

[Flag question](#)

Which of the following modifiers can be applied to a constructor?

- a. transient
- b. synchronized
- c. protected
- d. static

Question 15

Complete

Marked out of
1.00[Flag question](#)

Given the following,

```
1. class B extends A {  
2.     int getId() {  
3.         return id;  
4.     }  
5. }  
6. class C {  
7.     public int name;  
8. }  
9. class A {  
10.    C c = new C();  
11.    public int id;  
12. }
```

Which one is correct about instances of the classes listed above?

- a. B has-a A
- b. A is-a B
- c. B has-a C
- d. C is-a A

Question 16

Complete

Marked out of
1.00[Flag question](#)

A class Animal has a subclass Mammal. Which of the following is true:

- a. Because of single inheritance, Animal can have only one subclass.
- b. Because of single inheritance, Mammal can have no siblings.
- c. Because of single inheritance, Mammal can have no other parent than Animal.
- d. Because of single inheritance, Mammal can have no subclasses.

- d. Because of single inheritance, Mammal can have no subclasses.

Question 17
Complete
Marked out of 1.00
[Flag question](#)

Say that class Rodent has a child class Rat and another child class Mouse. Class Mouse has a child class PocketMouse. Examine the following

```
Rodent rod;
Rat rat = new Rat();
Mouse mos = new Mouse();
PocketMouse pkt = new PocketMouse();
```

Which of the following array declarations is correct for an array that is expected to hold up to 10 objects of types Rat, Mouse, and PocketMouse?

- a. Rodent[] array = new Rat[10];
- b. Rodent[10] array;
- c. Rat[] array = new Rat[10];
- d. Rodent[] array = new Rodent[10];

Question 18
Complete
Marked out of 1.00
[Flag question](#)

Given the following:

```
1. public class MyClass {
2.   public static void main(String[] args) {
3.     Derived d = new Derived("hello");
4.   }
5. }
6.
7. class Base {
8.   Base() { this("a", "b"); }
9.
10. Base(String x, String y) { System.out.println(x + y); }
11. }
12.
13. class Derived extends Base {
14.   Derived(String s) { System.out.println(s); }
15. }
```

What is the output?

- a. It will print ab
- b. It will print ab followed by hello.
- c. It will print hello.
- d. It will print hello followed by ab.

Question 19
Complete
Marked out of 1.00
[Flag question](#)

Which statement is true?

- a. Every Java object has a public method named length.
- b. Inheritance defines a has-a relationship between a superclass and its subclasses.
- c. Every Java object has a public method named equals.
- d. A final class can be extended by any number of classes

Question 20
Complete
Marked out of
1.00
[Flag question](#)

Given the following.

```
1. class MySuper {  
2.     public MySuper(int i) {  
3.         System.out.println("super " + i);  
4.     }  
5.  
6.  
7. public class MySub extends MySuper {  
8.     public MySub() {  
9.         super(2);  
10.        System.out.println("sub");  
11.    }  
12.  
13.    public static void main(String [] args) {  
14.        MySuper sup = new MySub();  
15.    }  
16.}
```

What is the result?

- a. Compilation fails at line 14.
- b. sub
super 2
- c. super 2
sub
- d. Compilation fails at line 9.

Question 21
Complete
Marked out of
1.00
[Flag question](#)

Given the following code:

```
class B {  
int m = 7;  
}  
  
class D extends B {  
int m = 9;  
}  
  
public class TestBaseDerived {  
public static void main(String[] args) {  
B b = new B();  
D d = new D();  
B bd = new D();  
System.out.printf("%d %d %d", b.m, d.m, bd.m);  
}  
}
```

What will be the output on executing the above code?

- a. 7 9 7
- b. 9 9 7

Question 22
Complete
Marked out of
1.00
[Flag question](#)

Which of the following modifiers cannot be applied to a top level class?

- a. public
- b. final
- c. abstract
- d. private

Question 23
Complete
Marked out of
1.00
[Flag question](#)

Which of the following is correct syntax for defining a new class Jolt based on the superclass SoftDrink?

- a. class Jolt isa SoftDrink { //additional definitions go here }
- b. class Jolt extends SoftDrink { //additional definitions go here }
- c. class Jolt defines SoftDrink { //additional definitions go here }
- d. class Jolt implements SoftDrink { //additional definitions go here }

Question 24
Complete
Marked out of
1.00
[Flag question](#)

Given the following code:

```
class B { int m = 7; }

class D extends B { int m = 9; }

public class TestBaseDerived {

    public static void main(String[] args) {
        B b = new B();
        D d = new D();
        B bd = new D();
        System.out.printf("%d %d %d", b.m, d.m, bd.m);
    }
}
```

What will be the output on executing the above code ?

- a. 9 7 9
- b. 9 9 7
- c. 7 9 7
- d. 7 9 9

Question 25
Complete
Marked out of
1.00
[Flag question](#)

Which one of the following statement is false?

- a. The subclass of a non-abstract class can be declared abstract.
- b. All members of the superclass are inherited by the subclass.
- c. A top level class in which all the members are declared private, can be declared public.
- d. A final class cannot be abstract.

Question 26
Complete
Marked out of
1.00
[Flag question](#)

Given a method in a class, what access modifier do you use to restrict access to that method to only the other members of the same class?

- a. static
- b. volatile
- c. protected
- d. private

Question 27
Complete
Marked out of
1.00
[Flag question](#)

Given the following code, which is the simplest print statement that can be inserted into the print() method?

```
// Filename: MyClass.java
public class MyClass extends MySuperclass {
    public static void main(String[] args) {
        MyClass object = new MyClass();
        object.print();
    }
    public void print() {
        // INSERT CODE HERE THAT WILL PRINT
        // THE "Hello, world!" STRING FROM THE Message
        // CLASS.
    }
}
class MySuperclass {
    Message msg = new Message();
}
class Message {
    // The message that should be printed:
    String text = "Hello, world!";
}
```

- a. System.out.println(msg.text);
- b. System.out.println(super.msg.text);
- c. System.out.println(Message.text);
- d. System.out.println(object.msg.text);

Question 28
Complete
Marked out of
1.00
[Flag question](#)

Assuming Card is the base class of Valentine, Holiday and Birthday, in order for the following code to be correct, what must be the type of the reference variable card?

```
_____ card;
card = new Valentine( "Joe", 14 );
card.greeting();
card = new Holiday( "Bob" );
card.greeting();
card = new Birthday( "Emily", 12 );
card.greeting();
```

- a. Valentine
- b. Card
- c. Birthday
- d. Holiday

Question 29
Complete
Marked out of
1.00
[Flag question](#)

What restriction is there on using the super reference in a constructor?

- a. It must be used in the last statement of the constructor.
- b. It must be used in the first statement of the constructor.
- c. Only one child class can use it.
- d. It can only be used in the parent's constructor.

Question 30

Complete

Marked out of
1.00[Flag question](#)

Given the following code, which is the simplest print statement that can be inserted into the print() method?

```
// Filename: MyClass.java
public class MyClass extends MySuperclass {
    public static void main(String[] args) {
        MyClass object = new MyClass();
        object.print();
    }

    public void print() {
        // INSERT CODE HERE THAT WILL PRINT
        // THE "Hello, world!" STRING FROM THE Message
        // CLASS.
    }
}

class MySuperclass {
    Message msg = new Message();
}

class Message {
    // The message that should be printed:
    String text = "Hello, world!";
}
```

- a. System.out.println(msg.text);
- b. System.out.println(object.msg.text);
- c. System.out.println(super.msg.text);
- d. System.out.println(Message.text);

Question 31

Complete

Marked out of
1.00[Flag question](#)

The concept of inheritance provides the idea of

- a. reusability
- b. Taking more than one form
- c. all of these
- d. data hiding

Question 32
Complete
Marked out of
1.00
[Flag question](#)

Given the following code, which of these constructors can be added to MySub class without causing a compile-time error?

```
class MySuper {  
    int number;  
    MySuper(int i) { number = i; }  
}  
  
class MySub extends MySuper {  
    int count;  
    MySub(int cnt, int num) {  
        super(num);  
        count=cnt;  
    }  
    // INSERT ADDITIONAL CONSTRUCTOR HERE  
}
```

- a. MySub(int cnt) { super(cnt); this(cnt, 0); }
- b. MySub()
- c. MySub(int cnt) { count = cnt; super(cnt); }
- d. MySub(int cnt) { this(cnt, cnt); }

Question 33
Complete
Marked out of
1.00
[Flag question](#)

Analyse the following 2 classes and select the correct statement.

```
class A {  
    private int x = 0;  
    static int y = 1;  
    protected int q = 2;  
}  
  
class B extends A {  
    void method() {  
        System.out.println(x);  
        System.out.println(y);  
        System.out.println(q);  
    }  
}
```

- a. The code compiles correctly, and the following is displayed:012
- b. The code fails to compile because the variable x is not available to class B.
- c. The code fails to compile because you can't subclass a class with protected variables.
- d. The code fails to compile because you can't subclass a class with static variables.

Question 34
Complete
Marked out of 1.00
[Flag question](#)

Can an object of a child type be assigned to a variable of the parent type? For example,
Card crd;
BirthDay bd = new BirthDay("Lucinda", 42);
crd = bd; // is this correct?

- a. No-but a object of parent type can be assigned to a variable of child type.
- b. Yes-an object can be assigned to a reference variable of the parent type.
- c. No-there must always be an exact match between the variable and the object types.
- d. Yes-any object can be assigned to any reference variable.

Question 35
Complete
Marked out of 1.00
[Flag question](#)

Given the following:
1. class Animal {
2. String name = "No name";
3. public Animal(String nm) { name = nm; }
4. }
5.
6. class DomesticAnimal extends Animal {
7. String animalFamily = "nofamily";
8. public DomesticAnimal(String family) { animalFamily = family; }
9. }
10.
11. public class AnimalTest {
12. public static void main(String[] args) {
13. DomesticAnimal da = new DomesticAnimal("cat");
14. System.out.println(da.animalFamily);
15. }
16.}

What is the result ?

- a. Compilation fails due to an error in line 8.
- b. cat
- c. nofamily
- d. An exception is thrown at runtime.

[Finish review](#)

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Status	Finished
Started	Sunday, 6 October 2024, 10:16 AM
Completed	Sunday, 6 October 2024, 10:34 AM
Duration	17 mins 50 secs

Question 1

Correct

Marked out of 5.00

create a class called College with attribute String name, constructor to initialize the name attribute , a method called Admitted(). Create a subclass called CSE that extends Student class, with department attribute , Course() method to sub class. Print the details of the Student.

College:

```
String collegeName;
public College() {}
public admitted() {}

Student:
String studentName;
String department;
public Student(String collegeName, String studentName, String depart) {}
public toString()
```

Expected Output:

A student admitted in REC
 CollegeName : REC
 StudentName : Venkatesh
 Department : CSE

For example:

Result
A student admitted in REC CollegeName : REC StudentName : Venkatesh Department : CSE

Answer: (penalty regime: 0 %)**Reset answer**

```
1 class College
2 {
3     protected String collegeName;
4
5     public College(String collegeName) {
6         // initialize the instance variables
7         this.collegeName=collegeName;
8     }
9
10    public void admitted() {
11        System.out.println("A student admitted in "+collegeName);
12    }
13 }
14 class Student extends College{
15
16     String studentName;
17     String department;
18
19     public Student(String collegeName, String studentName, String depart) {
20         // initialize the instance variables
21         super(collegeName);
22         this.studentName=studentName;
23         this.department=depart;
24
25     }
26
27     public String toString(){
28         // return the details of the student
29         return "CollegeName : "+collegeName+"\nStudentName : "+studentName + "\nDepartment : "+department;
30     }
31 }
32 class prog {
33     public static void main (String[] args) {
34         Student s1 = new Student("REC", "Venkatesh", "CSE");
35         s1.admitted();                                // invoke the admitted() method
```

```
36     System.out.println(s1.toString());  
37 }  
38 }
```

	Expected	Got	
✓	A student admitted in REC CollegeName : REC StudentName : Venkatesh Department : CSE	A student admitted in REC CollegeName : REC StudentName : Venkatesh Department : CSE	✓

Passed all tests! ✓

Question 2

Correct

Marked out of 5.00

Create a class Mobile with constructor and a method basicMobile().

Create a subclass CameraMobile which extends Mobile class , with constructor and a method newFeature().

Create a subclass AndroidMobile which extends CameraMobile, with constructor and a method androidMobile().

display the details of the Android Mobile class by creating the instance. .

```
class Mobile{
```

```
}
```

```
class CameraMobile extends Mobile {
```

```
}
```

```
class AndroidMobile extends CameraMobile {
```

```
}
```

expected output:

Basic Mobile is Manufactured

Camera Mobile is Manufactured

Android Mobile is Manufactured

Camera Mobile with 5MG px

Touch Screen Mobile is Manufactured

For example:

Result
Basic Mobile is Manufactured Camera Mobile is Manufactured Android Mobile is Manufactured Camera Mobile with 5MG px Touch Screen Mobile is Manufactured

Answer: (penalty regime: 0 %)

```
1 v class Mobile{
2 v     Mobile(){
3 v         System.out.println("Basic Mobile is Manufactured");
4 v     }
5 v     void basicMobile(){
6 v
7 v }
8 v }
9 v class CameraMobile extends Mobile{
10 v    CameraMobile(){
11 v        System.out.println("Camera Mobile is Manufactured");
12 v    }
13 v    void newFeature(){
14 v        System.out.println("Camera Mobile with 5MG px");
15 v    }
16 v }
17 v class AndroidMobile extends CameraMobile{
18 v    AndroidMobile(){
19 v        System.out.println("Android Mobile is Manufactured");
20 v    }
21 v    void androidMobile(){
22 v        System.out.println("Touch Screen Mobile is Manufactured");
23 v    }
24 v }
25 v class prog{
26 v     public static void main(String[] args){
27 v         AndroidMobile mobile= new AndroidMobile();
28 v         mobile.newFeature();
29 v         mobile.androidMobile();
30 v     }
31 }
```

Expected	Got	
✓ Basic Mobile is Manufactured Camera Mobile is Manufactured Android Mobile is Manufactured Camera Mobile with 5MG px Touch Screen Mobile is Manufactured	Basic Mobile is Manufactured Camera Mobile is Manufactured Android Mobile is Manufactured Camera Mobile with 5MG px Touch Screen Mobile is Manufactured	✓

Passed all tests! ✓

Question 3

Correct

Marked out of 5.00

Create a class known as "BankAccount" with methods called deposit() and withdraw().

Create a subclass called SavingsAccount that overrides the withdraw() method to prevent withdrawals if the account balance falls below one hundred.

For example:

Result

```
Create a Bank Account object (A/c No. BA1234) with initial balance of $500:  
Deposit $1000 into account BA1234:  
New balance after depositing $1000: $1500.0  
Withdraw $600 from account BA1234:  
New balance after withdrawing $600: $900.0  
Create a SavingsAccount object (A/c No. SA1000) with initial balance of $300:  
Try to withdraw $250 from SA1000!  
Minimum balance of $100 required!  
Balance after trying to withdraw $250: $300.0
```

Answer: (penalty regime: 0 %)

[Reset answer](#)

```
1 class BankAccount {  
2     // Private field to store the account number  
3     private String accountNumber;  
4  
5     // Private field to store the balance  
6     private double balance;  
7  
8     // Constructor to initialize account number and balance  
9     BankAccount(String accountNumber,double balance){  
10         this.accountNumber=accountNumber;  
11         this.balance=balance;  
12     }  
13  
14  
15  
16  
17     // Method to deposit an amount into the account  
18     public void deposit(double amount) {  
19         // Increase the balance by the deposit amount  
20         this.balance+=amount;  
21     }  
22  
23  
24     // Method to withdraw an amount from the account  
25     public void withdraw(double amount) {  
26         // Check if the balance is sufficient for the withdrawal  
27         if (balance >= amount) {  
28             // Decrease the balance by the withdrawal amount  
29             balance -= amount;  
30         } else {  
31             // Print a message if the balance is insufficient  
32             System.out.println("Insufficient balance");  
33         }  
34     }  
35  
36     // Method to get the current balance  
37     public double getBalance() {  
38         // Return the current balance  
39         return this.balance;  
40     }  
41 }  
42  
43  
44     class SavingsAccount extends BankAccount {  
45         // Constructor to initialize account number and balance  
46         SavingsAccount(String accountNumber, double balance) {  
47             // Call the parent class constructor  
48             super(accountNumber,balance);  
49         }  
50     }
```

```
--  
51  
52 // Override the withdraw method from the parent class
```

	Expected	Got	
✓	<p>Create a Bank Account object (A/c No. BA1234) with initial balance of \$500: Deposit \$1000 into account BA1234: New balance after depositing \$1000: \$1500.0 Withdraw \$600 from account BA1234: New balance after withdrawing \$600: \$900.0 Create a SavingsAccount object (A/c No. SA1000) with initial balance of \$300: Try to withdraw \$250 from SA1000! Minimum balance of \$100 required! Balance after trying to withdraw \$250: \$300.0</p>	<p>Create a Bank Account object (A/c No. BA1234) with initial balance of \$500: Deposit \$1000 into account BA1234: New balance after depositing \$1000: \$1500.0 Withdraw \$600 from account BA1234: New balance after withdrawing \$600: \$900.0 Create a SavingsAccount object (A/c No. SA1000) with initial balance of \$300: Try to withdraw \$250 from SA1000! Minimum balance of \$100 required! Balance after trying to withdraw \$250: \$300.0</p>	✓

Passed all tests! ✓

◀ Lab-05-MCQ

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Is Palindrome Number? ►



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Finish review

Submitted Sunday, 6 October 2024, 11:21 PM

Completed Sunday, 6 October 2024, 11:21 PM

Duration 17 mins 21 secs

Question 1

Complete

Marked out of
1.00

[Flag question](#)

What will be the result of attempting to compile and run the following code?

```
class MyClass {  
    public static void main(String[] args) {  
        String str1 = "str1";  
        String str2 = "str2";  
        String str3 = "str3";  
        str1.concat(str2);  
        System.out.println(str3.concat(str1));  
    }  
}
```

- a. The program will print str3str2 when run
- b. The program will print str3 when run
- c. The program will print str3str1str2 when run
- d. The program will print str3str1 when run

Question 2

Complete

Marked out of
1.00

[Flag question](#)

What does the following statement do? String[] widget;

- a. It creates a String object named widget
- b. It declares an array of references to widget objects named String
- c. It declares a variable widget which may in the future hold a reference to an array of references to String objects but is initialized to null
- d. It creates an array of length zero named widget

Question 3

Complete

Marked out of
1.00

[Flag question](#)

What is the difference between

String rats;

and

String[] rats; ?

- a. The first constructs a single String object; the second constructs an array of String objects
- b. The first declares rats to be a reference to a String object, the second declares rats to be a reference to an array of String references
- c. There is no difference; both declare rats to be a reference variable
- d. The first initializes rats to null; the second initializes rats to an array of nulls

Question 4

Complete

Marked out of
1.00

[Flag question](#)

Which one of the expressions will evaluate to true if preceded by the following code?

```
String str1 = "unread";
String str2 = new String(str1);
String str3 = str1;
char[] str4 = { 'u', 'n', 'r', 'e', 'a', 'd' };
```

- a. str1.equals(str2)
- b. (str1 == "Unread")
- c. (str1 == str2)
- d. str1.equals(str4)

Question 5

Which method is not defined in the String class?

Question 5

Complete

Marked out of
1.00

[Flag question](#)

- d. str1.equals(str4)

Which method is not defined in the String class?

- a. reverse()
- b. concat(String)
- c. length()
- d. hashCode()

Question 6

Complete

Marked out of
1.00

[Flag question](#)

Given the following code snippet,

```
4. String d = "bookkeeper";
5. d.substring(1,7);
6. d = "w" + d;
7. d.append("woo");
8. System.out.println(D.);
```

What is the result? Assume, the code given above is a portion of the code present in a method.

- a. wookkeewoo
- b. An exception is thrown at runtime
- c. wbookkeewoo
- d. Compilation fails

Question 7

Complete

Marked out of
1.00

 [Flag question](#)

Given the following,

11. String x = "xyz";
12. x.toUpperCase();
13. String y = x.replace('Y', 'y');
14. y = y + "abc";
15. System.out.println();

What is the result?

- a. abcxyz
- b. abcXYZ
- c. xyzabc
- d. Xyzabc
- e. Compilation fails

Question 8

Complete

Marked out of
1.00

 [Flag question](#)

Which expression will evaluate to true?

- a. "Hello There".compareTo("hello there") == 0
- b. "HELLO THERE".equals("hello there")
- c. ("hello".concat("there")).equals("hello there")
- d. "Hello there".toLowerCase().equals("hello there")

Question 9

Complete

Marked out of
1.00[Flag question](#)

Given the following,

4. String d = "bookkeeper";
5. d.substring(1,7);
6. d = "w" + d;
7. d.append("woo");
8. System.out.println(d);

What is the result?

- a. wbookkeewoo
- b. wbookkeeperwoo
- c. wookkeewoo
- d. Compilation fails
- e. wbookkeeper

Question 10

Complete

Marked out of
1.00[Flag question](#)

Given the following:

```
public class TestSubstring {  
    public static void main(String[] args) {  
        String str = "international";  
        str = str.substring(6, 9);  
        char b = str.charAt(2);  
        str = str + b;  
        System.out.println(str);  
    }  
}
```

What is the result? Assume the code given above is a portion of the code present in a method.

- a. atiot
- b. atii
- c. atia
- d. atioa

Question 11

Complete

Marked out of
1.00[Flag question](#)

What is the value of len after the following executes?

```
String s1 = "Hey, buddy!";
int len = s1.length();
```

- a. 8
- b. 11
- c. 12
- d. 10

Question 12

Complete

Marked out of
1.00[Flag question](#)

What is a delimiter?

- a. A delimiter is any character that may be part of a number
- b. A delimiter is any character that may be part of a token
- c. A delimiter is a character that separates the tokens in a string.
- d. A delimiter is the last character of a string

Question 13

Complete

Marked out of
1.00[Flag question](#)

Given the code snippet:

```
String str = new String("Hello");
```

Which of the below mentioned is an invalid call?

- a. str.replace('H','h');
- b. str.trim();
- c. str.append("World");
- d. str.substring(2);

Question 14

Complete

Marked out of
1.00[Flag question](#)

Which statement concerning the charAt() method of the String class is true?

- a. The index of the first character is 1.
- b. expression "abcdef".charAt(3) evaluates to the character 'd'.
- c. The expression "abcdef".charAt(3) is illegal.
- d. The charAt() method returns a Character object.

Question 15

Complete

Marked out of
1.00[Flag question](#)

Given the following,

```
13. String x = new String("xyz");
14. y = "abc";
15. x = x + y;
```

How many String objects have been created?

- a. 4
- b. 3
- c. 2
- d. 5

Question 16

Complete

Marked out of
1.00[Flag question](#)

Which expression will extract the substring "kap" from a string defined by String str = "kakapo"?

- a. str.substring(2, 5)
- b. str.substring(2, 3)
- c. str.substring(2, 4)
- d. str.substring(2, 2)

Question 17

Complete

Marked out of
1.00[Flag question](#)

Which phrase best describes a String object after it has been constructed?

- a. Inaccessible
- b. Changeable
- c. Write Only
- d. Read Only

Question 18

Complete

Marked out of
1.00[Flag question](#)

What does the following statement do? String glarch;

- a. It declares an array of String objects named glarch
- b. It declares a reference variable glarch which may in the future refer to a String object but is now initialized to null.
- c. It constructs a String object which will contain the characters "glarch"
- d. It constructs a String object named glarch

Question 19

Complete

Marked out of
1.00[Flag question](#)

What function does the trim() method of the String class perform?

- a. It returns a string where both the leading and trailing white space of the original string has been removed.
- b. It returns a string where the trailing white space of the original string has been removed.
- c. It returns a string where the leading white space of the original string has been removed.
- d. It returns a string where all the white space of the original string has been removed.

Question 20

Complete

Marked out of
1.00[Flag question](#)

What is the value of pos after the following code executes?

```
String s1 = "ac ded ca";
int pos = s1.indexOf("d");
```

- a. 5
- b. 4
- c. -1
- d. 3

Question 21

Complete

Marked out of
1.00[Flag question](#)

What will the following program print when run?

```
public class Search {
    public static void main(String[] args) {
        String s = "Contentment!";
        int middle = s.length() / 2;
        String nt = s.substring(middle - 1, middle + 1);
        System.out.println(s.lastIndexOf(nt, middle));
    }
}
```

- a. 7
- b. 2
- c. 5
- d. 4

Question 22

Complete

Marked out of
1.00[Flag question](#)

Given the declaration

```
String[] names = new String[10];
```

Which of the following statements puts a reference to the String "Hello" in the last slot of the array?

- a. names[9] = "Hello";
- b. names[10] = "Hello";
- c. names[0] = "Hello";
- d. String[names.length-1] = "Hello";

Question 23

Complete

Marked out of
1.00[Flag question](#)

Which one of the following operators cannot be used in conjunction with a String object?

- a. +=
- b. .
- c. -
- d. +

Question 24

Complete

Marked out of
1.00[Flag question](#)

Say that names has been declared

```
String[] names = new String[10];
```

and that further statements (not shown) have put String references into some of the slots.

Which of the following fragments prints out every String, but skips null references?

- a.

```
for ( int j = 0; j < names.length; j++ )  
    if ( names[j] != null )  
        System.out.println( names[j] );
```
- b.

```
for ( int j = 0; j < names.length && names[j] != null ; j++ )  
    System.out.println( names[j] );
```
- c.

```
for ( int j = 0; names[j] != null; j++ )  
    System.out.println( names[j] );
```
- d.

```
for ( int j = 0; j < names.length; j++ )
```

Question 25

Complete

Marked out of
1.00[Flag question](#)Say that `names` has been declared`String[] names = new String[10];`

and that further statements (not shown) have put String references into some of the slots.

Which of the following fragments prints out the slots of the array from last to first, skipping slots that contain null?

a. `for (int j = names.length; j < names.length; j++)`
`if (names[j] != null)`
`System.out.println(names[j]);`

b. `for (int j = names.length; j >= 0; j++)`
`if (names[j] != null)`
`System.out.println(names[j]);`

c. `for (int j = names.length-1; j >= 0; j++)`
`if (names[j] != null)`
`System.out.println(names[j]);`

d. `for (int j = 0; j < names.length; j++)`
`if (names[j] != null)`
`System.out.println(names[j]);`

Question 26

Complete

Marked out of
1.00[Flag question](#)

What does the following statement do?

`String[] names = new String[10];`

- a. It declares `names` to be 10 String objects
- b. It declares `names` to be a reference to an array of String references and constructs an array object which can contain references to 10 String objects
- c. It declares `names` to be a reference to an array of String references and constructs an array object which contains references to the 10 String objects which it also constructs.
- d. It declares `names` to be a reference to an array of String references and constructs an array object which contains "10" in its first slot

- d. It declares `names` to be a reference to an array of String references and constructs an array object which contains "10" in its first slot

Question 27

Complete

Marked out of
1.00

 Flag question

What will be written to the standard output when the following program is run?

```
import static java.lang.System.out;
public class TestOutput {
    public static void main(String[] args) {
        String space = " ";
        String composite = space + "windows" + space + space;
        composite.concat("server");
        String trimmed = composite.trim();
        System.out.println(trimmed.length());
    }
}
```

- a. 15
 b. 7
 c. 9
 d. 13

Question 28

Complete

Marked out of
1.00

 Flag question

Given the following,

```
public class StringRef {
    public static void main(String[] args) {
        String s1 = "abc";
        String s2 = "def";
        String s3 = s2;
        s2 = "ghi";
        System.out.println(s1 + s2 + s3);
    }
}
```

What is the result?

- a. abcghighi
 b. abcdefdef
 c. abcghidef
 d. Compilation fails.
 e. abcdefghi

Question 29

Complete

Marked out of
1.00[Flag question](#)

What will be the result of attempting to compile and run the following code?

```
public class RefEq {  
    public static void main(String[] args) {  
        String s = "ab" + "12";  
        String t = "ab" + 12;  
        String u = new String("ab12");  
        System.out.println((s == t) + " " + (s == u));  
    }  
}
```

- a. The program will print false true when run
- b. The program will print true false when run
- c. The program will print false false when run
- d. The program will print true true when run

Question 30

Complete

Marked out of
1.00[Flag question](#)

How would you declare and initialize the array to declare an array of fruits?

- a. String[] arrayOfFruits = {"apple", "mango", "orange"};
- b. String[] arrayOfFruits = new String("apple, mango, orange");
- c. String[] arrayOfFruits= ("apple", "mango", "orange");
- d. String[] arrayOfFruits= ["apple", "mango", "orange"];

Question 31

Complete

Marked out of
1.00[Flag question](#)

Which one of the expressions will evaluate to true if preceded by the following code?

```
String a = "hello";  
String b = new String(a);  
String c = a;  
char[] d = { 'h', 'e', 'l', 'l', 'o' };
```

- a. (a == "Hello")
- b. a.equals(b)
- c. a.equals(d)
- d. (a == b)

d. `(a == b)`

Question 32

Complete

Marked out of
1.00

[Flag question](#)

Given the following,

14. `String a = "newspaper";`
15. `a = a.substring(5,7);`
16. `char b = a.charAt(1);`
17. `a = a + b;`
18. `System.out.println(a);`

What is the result?

- a. papp
- b. apea
- c. apa
- d. apep
- e. app

Question 33

Complete

Marked out of
1.00

[Flag question](#)

Which one of the following is not legal?

- a. `System.out.println('s' + 't' + 'e' + 'p');`
- b. `System.out.println("st" + new String('e' + 'p'));`
- c. `System.out.println("st".concat("ep"));`
- d. `System.out.println("st" + "ep");`

Question 34

Say that `names` has been declared

Question 34

Complete

Marked out of
1.00[Flag question](#)Say that `names` has been declared`String[] names = new String[10];`

and that further statements (not shown) have put String references into some of the slots.

Which of the following fragments counts the number of non-null slots in the array?

- a.

```
int j = 0;
int count = 0;
while ( names[ ++j ] != null )
    count++ ;
```
- b.

```
int j = 0;
for ( int count = 0; count < names.length; count++ )
    if ( names[j] != null )
        j++ ;
```
- c.

```
int count = 0;
for ( int j = 0; j < names.length; j++ )
    if ( names[j] != null )
        count++ ;
```
- d.

```
int count = 0;
while ( names[ count ] != null )
{
    count++ ;
}
```

Question 35

Complete

Marked out of
1.00[Flag question](#)What is the meaning of `null`?

- a. It is another name for zero
- b. It is a special value used to indicate an error condition
- c. It is the `String` object that contains no characters
- d. A reference variable that contains `null` is not referring to an object

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Status Finished

Started Sunday, 6 October 2024, 10:55 AM

Completed Sunday, 6 October 2024, 11:39 AM

Duration 43 mins 54 secs

Question 1

Correct

Marked out of 5.00

Given 2 strings input1 & input2.

- Concatenate both the strings.
- Remove duplicate alphabets & white spaces.
- Arrange the alphabets in descending order.

Assumption 1:

There will either be alphabets, white spaces or null in both the inputs.

Assumption 2:

Both inputs will be in lower case.

Example 1:

Input 1: apple

Input 2: orange

Output: rponlgea

Example 2:

Input 1: fruits

Input 2: are good

Output: utsroigfeda

Example 3:

Input 1: ""

Input 2: ""

Output: null

For example:

Test	Input	Result
1	apple orange	rponlgea
2	fruits are good	utsroigfeda

Answer: (penalty regime: 0 %)

```

1 import java.util.Arrays;
2 import java.util.LinkedHashSet;
3 import java.util.Scanner;
4 public class prog{
5     public static String processStrings(String input1, String input2){
6         String concatenatedString=input1+input2;
7         String withoutSpaces=concatenatedString.replace(" ","");
8         char[] chars=withoutSpaces.toCharArray();
9         LinkedHashSet<Character> uniqueCharsSet=new LinkedHashSet<>();
10        for(char c:chars){
11            uniqueCharsSet.add(c);
12        }
13        char[] uniqueCharsArray= new char[uniqueCharsSet.size()];
14        int i=0;
15        for(char c:uniqueCharsSet){
16            uniqueCharsArray[i++]=c;
17        }
18        Arrays.sort(uniqueCharsArray);
19        StringBuilder result=new StringBuilder(new String(uniqueCharsArray));
20        result.reverse();
21        return result.length()>0?result.toString():"null";
22    }
23    public static void main(String[] args){
24        Scanner s=new Scanner(System.in);
25        String a=s.nextLine();
26        String b=s.nextLine();
27        System.out.println(processStrings(a,b));
}

```

```
28 }  
29 }
```

	Test	Input	Expected	Got	
✓	1	apple orange	rponlgea	rponlgea	✓
✓	2	fruits are good	utsroigfeda	utsroigfeda	✓
✓	3		null	null	✓

Passed all tests! ✓

Question 2

Correct

Marked out of 5.00

You are provided a string of words and a 2-digit number. The two digits of the number represent the two words that are to be processed.

For example:

If the string is "Today is a Nice Day" and the 2-digit number is 41, then you are expected to process the 4th word ("Nice") and the 1st word ("Today").

The processing of each word is to be done as follows:

Extract the Middle-to-Begin part: Starting from the middle of the word, extract the characters till the beginning of the word.

Extract the Middle-to-End part: Starting from the middle of the word, extract the characters till the end of the word.

If the word to be processed is "Nice":

Its Middle-to-Begin part will be "iN".

Its Middle-to-End part will be "ce".

So, merged together these two parts would form "iNce".

Similarly, if the word to be processed is "Today":

Its Middle-to-Begin part will be "doT".

Its Middle-to-End part will be "day".

So, merged together these two parts would form "doTday".

Note: Note that the middle letter 'd' is part of both the extracted parts. So, for words whose length is odd, the middle letter should be included in both the extracted parts.

Expected output:

The expected output is a string containing both the processed words separated by a space "iNce doTday"

Example 1:

input1 = "Today is a Nice Day"

input2 = 41

output = "iNce doTday"

Example 2:

input1 = "Fruits like Mango and Apple are common but Grapes are rare"

input2 = 39

output = "naMngo arGpes"

Note: The input string input1 will contain only alphabets and a single space character separating each word in the string.

Note: The input string input1 will NOT contain any other special characters.

Note: The input number input2 will always be a 2-digit number ($>=11$ and $<=99$). One of its digits will never be 0. Both the digits of the number will always point to a valid word in the input1 string.

For example:

Input	Result
Today is a Nice Day 41	iNce doTday
Fruits like Mango and Apple are common but Grapes are rare 39	naMngo arGpes

Answer: (penalty regime: 0 %)

```

1 import java.util.Scanner;
2 public class MiddleExtractor{
3     public static String processInput(String input1,int input2){
4         String[] words=input1.split(" ");
5         int firstWordIndex=input2/10-1;
6         int secondWordIndex=input2%10-1;
7         if(firstWordIndex>=words.length||secondWordIndex>=words.length){
8             return "Invalid word index in input2";
9         }
10        String processedFirstWord=processWord(words[firstWordIndex]);
    
```

```

11     String processedSecondWord=processWord(words[secondWordIndex]);
12     return processedFirstWord+" "+processedSecondWord;
13 }
14 private static String processWord(String word){
15     int length=word.length();
16     int middleIndex=length/2;
17     String middleToBegin;
18     if(length%2==0){
19         middleToBegin=new StringBuilder(word.substring(0,middleIndex)).reverse().toString();
20     }
21     else{
22         middleToBegin=new StringBuilder(word.substring(0,middleIndex+1)).reverse().toString();
23     }
24     String middleToEnd=word.substring(middleIndex);
25     return middleToBegin+middleToEnd;
26 }
27 public static void main(String[] args){
28     Scanner s=new Scanner(System.in);
29     String input1=s.nextLine();
30     int input2=s.nextInt();
31     String result=processInput(input1,input2);
32     System.out.println(result);
33     s.close();
34 }
35 }
```

	Input	Expected	Got	
✓	Today is a Nice Day 41	iNce doTday	iNce doTday	✓
✓	Fruits like Mango and Apple are common but Grapes are rare 39	naMngo arGpes	naMngo arGpes	✓

Passed all tests! ✓

Question 3

Correct

Marked out of 5.00

Given a String input1, which contains many number of words separated by : and each word contains exactly two lower case alphabets, generate an output based upon the below 2 cases.

Note:

1. All the characters in input 1 are lowercase alphabets.
2. input 1 will always contain more than one word separated by :
3. Output should be returned in uppercase.

Case 1:

Check whether the two alphabets are same.

If yes, then take one alphabet from it and add it to the output.

Example 1:

input1 = ww:ii:pp:rr:oo

output = WIPRO

Explanation:

word1 is ww, both are same hence take w

word2 is ii, both are same hence take i

word3 is pp, both are same hence take p

word4 is rr, both are same hence take r

word5 is oo, both are same hence take o

Hence the output is WIPRO

Case 2:

If the two alphabets are not same, then find the position value of them and find maximum value – minimum value.

Take the alphabet which comes at this (maximum value - minimum value) position in the alphabet series.

Example 2"

input1 = zx:za:ee

output = BYE

Explanation

word1 is zx, both are not same alphabets

position value of z is 26

position value of x is 24

max – min will be $26 - 24 = 2$

Alphabet which comes in 2nd position is b

Word2 is za, both are not same alphabets

position value of z is 26

position value of a is 1

max – min will be $26 - 1 = 25$

Alphabet which comes in 25th position is y

word3 is ee, both are same hence take e

Hence the output is BYE

For example:

Input	Result
ww:ii:pp:rr:oo	WIPRO
zx:za:ee	BYE

Answer: (penalty regime: 0 %)

```

1 import java.util.Scanner;
2 public class Word{
3     public static String processInput(String input1){
4         String[] words=input1.split(":");
5         StringBuilder output=new StringBuilder();
6         for(String word:words){
7             char firstChar=word.charAt(0);
8             char secondChar=word.charAt(1);
9             if(firstChar==secondChar){
10                 output.append(Character.toUpperCase(firstChar));
11             }
12         else{
13             int pos1=firstChar-'a'+1;
14             int pos2=secondChar-'a'+1;
15             int diff=Math.abs(pos1-pos2);
16             char resultChar=(char)('a'+(diff-1));
17             output.append((Character.toUpperCase(resultChar)));
18         }
19     }
20     return output.toString();
21 }
22 public static void main(String args[]){
23     Scanner s=new Scanner(System.in);
24     String a=s.nextLine();
25     System.out.println(processInput(a));
26 }
27 }
```

	Input	Expected	Got	
✓	ww:ii:pp:rr:oo	WIPRO	WIPRO	✓
✓	zx:za:ee	BYE	BYE	✓

Passed all tests! ✓

◀ Lab-06-MCQ

Jump to...

Return second word in Uppercase ►

6	7	8	9	10
11	12	13	14	15
16	17	18	19	20
21	22	23	24	25
26	27	28	29	30
31	32	33	34	35

Show one page at a time

Finish review

Question 1

Complete

Marked out of
1.00

 Flag question

Given the code below:

```
interface MyInterface {
```

```
    void doSomething  ;
```

```
}
```

```
class MyClass implements MyInterface {
```

```
    // xx
```

```
}
```

Choose the valid option that can be substituted in place of xx in the MyClass class.

- a. private void doSomething  /* valid code fragments */
- b. public native void doSomething  ;
- c. void doSomething  /* valid code fragments */
- d. protected void doSomething  /* valid code fragments */

Question 2

Complete

Marked out of
1.00

[Flag question](#)

The variables in an interface cannot be,

- a. static
- b. final
- c. protected
- d. constant

Question 3

Complete

Marked out of
1.00

[Flag question](#)

Which of the following is not an attribute common to both abstract classes and interfaces?

- a. They both can contain default methods.
- b. They both can contain abstract methods.
- c. They both can contain static variables.
- d. They both can contain static methods.

Question 4

Complete

Marked out of
1.00

 Flag question

```
interface I1 {}  
interface I2 {}  
class Base implements I1 {}  
class Sub extends Base implements I2 {}  
class Red {  
    public static void main(String args[]) {  
        Sub s1 = new Sub();I2 i2 = s1;      // 1  
        I1 i1 = s1;                      // 2  
        Base base = s1;                  // 3  
        Sub s2 = (Sub) base;            // 4  
    }  
}
```

A compile-time error is generated at which line?

- a. 2
- b. No error will be generated.
- c. 4
- d. 3

Question 5

Complete

Marked out of
1.00

 [Flag question](#)

The fields in an interface are implicitly specified as

- a. private
- b. protected
- c. static
- d. static and final

Question 6

Complete

Marked out of
1.00

 [Flag question](#)

Which is true about the package statement in Java?

- a. There can be more than one package statement.
- b. It should be the first non-comment line in the Java source file.
- c. It can appear anywhere in the file as long as the syntax is correct.
- d. It should appear after all the import statements but before the class declaration.

Question **7**

Complete

Marked out of
1.00

 [Flag question](#)

Which is a valid method signature in an interface?

- a. private int getArea();
- b. boolean setFlag(Boolean [] test []);
- c. public static void main(String [] args);
- d. protected float getVol(float x);

Question **8**

Complete

Marked out of
1.00

 Flag question

Given the following,

1. interface Base {
2. boolean m1 ();
3. byte m2(short s);
4. }

Which of the following code fragment will compile?

- a. abstract class Class2 extends Base {
 public boolean m1() { return true; } }
- b. class Class2 implements Base {
 boolean m1() { return false; }
 byte m2(short s) { return 42; } }
- c. abstract class Class2 implements Base {
 public boolean m1() { return (7 > 4); } }
- d. interface Base2 implements Base {}

Question 9

Complete

Marked out of
1.00

 Flag question

Given:

1. public interface Alpha {
2. String MESSAGE = "Welcome";
3. public void display();
4. }

To create an interface called Beta that has Alpha as its parent, which interface declaration is correct?

- a. public interface Beta parent Alpha { }
- b. public interface Beta extends Alpha { }
- c. public interface Beta implements Alpha { }
- d. public interface Beta instanceOf Alpha { }

Question 10

Complete

Marked out of
1.00

 Flag question

Interfaces can have method implementation for few methods.

- a. False
- b. True

Question **11**

Complete

Marked out of
1.00

 [Flag question](#)

Which of the following is/are advantages of packages?

- a. All of the mentioned
- b. Classes, even though they are visible outside their package, can have fields visible to packages only
- c. Packages avoid name clashes
- d. We can have hidden classes that are used by the packages, but not visible outside.

Question **12**

Complete

Marked out of
1.00

 [Flag question](#)

Given:

```
1. public interface IDrawable {  
2.     static final int SHAPE_CIRCLE=1;  
3.     final int SHAPE_SQUARE=2;  
4.     static int SHAPE_RECTANGLE=3;  
5.     public static const int SHAPE_TRIANGLE=4;  
6. }
```

What is the expected behaviour on compiling the above code?

- a. Compilation error occurs at line 4.
- b. Compilation error occurs at line 3.
- c. Compilation error occurs at line 5.
- d. Compilation error occurs at line 2.

Question 13

Complete

Marked out of
1.00

 [Flag question](#)

What is the output of the following code?

```
interface X
{
    int i = 5;
}

class Y implements X
{
    void f()
    {
        i = 10;
        System.out.println("i="+i);
    }
}

public class Main {
    public static void main(String[] args) {
        Y obj = new Y();
        obj.f();
    }
}
```

- a. Compile time error
- b. 5
- c. 0
- d. 10

Question 14

Complete

Marked out of
1.00

 [Flag question](#)

Which of the field declaration is legal within the body of an interface?

- a. protected static int answer = 42;
- b. private final static int answer = 42;
- c. volatile static int answer = 42;
- d. int answer = 42;

Question 15

Complete

Marked out of
1.00

 [Flag question](#)

Which declaration in the below code represents a valid declaration within the interface?

```
1. public interface TestInterface {  
2.     volatile long value=98L;  
3.     transient long amount=67L;  
4.     Long calculate(long input);  
5.     static Integer getValue();  
6. }
```

- a. Declaration at line 5.
- b. Declaration at line 3.
- c. Declaration at line 4.
- d. Declaration at line 2.

Question 16

Complete

Marked out of
1.00 Flag question

Predict the output of following Java program

```
// Note static keyword after import.
```

```
import static java.lang.System.*;
```

```
class StaticImportDemo
```

```
{
```

```
    public static void main(String args[])
    {

```

```

        out.println("REC");
    }
}
```

- a. Runtime Error
- b. Compiler Error
- c. REC
- d. None of the mentioned

Question 17

Complete

Marked out of
1.00

Given:

1. public interface Constants {

Question **17**

Complete

Marked out of
1.00

 [Flag question](#)

Given:

```
1. public interface Constants {  
2.     static final int SEASON_SUMMER=1;  
3.     final int SEASON_SPRING=2;  
4.     static int SEASON_AUTUMN=3;  
5.     public static const int SEASON_WINTER=4;  
6. }
```

What is the expected behaviour on compiling the above code?

- a. Compilation error occurs at line 4.
- b. Compilation error occurs at line 5.
- c. Compilation error occurs at line 3.
- d. Compilation error occurs at line 2.

Question **18**

Complete

Marked out of
1.00

 Flag question

```
interface I1 {  
    void draw();  
}
```

```
class C implements I1 {  
    xxxxxx  
}
```

Which of the following when inserted at xxxxxx is a legal definition and implementation?

- a. abstract void draw() {}
- b. public void draw() {}
- c. void draw() {}
- d. protected void draw() {}

Question **19**

Complete

Marked out of
1.00

 [Flag question](#)

Imagine you are working with another team to build an application. You are developing code that uses a class that the other team has not finished writing yet. Which element of Java would best facilitate this development, allowing easy integration once the other team's code is complete?

- a. static methods
- b. An abstract class
- c. An access modifier
- d. An interface

Question 20

Complete

Marked out of
1.00

 Flag question

Given the following,

1. interface DoMath {
2. double getArea(int raD. ; }
- 3.
4. interface MathPlus {
5. double getVol(int b, int h); }
- 6.
- 7.
- 8.

Which code fragment inserted at lines 7 and 8 will compile?

- a. interface AllMath extends DoMath {
 float getAvg(int h, int l); }
- b. class AllMath implements MathPlus {
 double getArea(int raD. ;)
- c. interface AllMath implements MathPlus {
 double getVol(int x, int y); }
- d. class AllMath extends DoMath {
 double getArea(int r); }

Question 21

Complete

Marked out of
1.00

 [Flag question](#)

Given:

```
1. interface I1 {  
2.     int process();  
3. }  
4. class C implements I1 {  
5.     int process() {  
6.         System.out.println("process of C invoked");  
7.         return 1;  
8.     }  
9.     void display() {  
10.        System.out.println("display of C invoked");  
11.    }  
12.  
13. public class TestC {  
14.     public static void main(String... args) {  
15.         C c = new C();  
16.         c.process();  
17.     }  
18.}
```

What is the expected behaviour?

- a. Compilation error at line 9.
- b. Runtime error occurs.
- c. Prints "process of C invoked".
- d. Compilation error at line 5.

c. Prints "process of C invoked".

d. Compilation error at line 5.

Question **22**

Complete

Marked out of
1.00

 [Flag question](#)

Suppose a class named App1 is located in the samples.messages package. You have compiled the class. How do you execute the class?

a. java samples.messages.App1.class

b. java samples.messages.App1

c. java App1

d. javac samples.messages.App1

Question **23**

Complete

Marked out of
1.00

 [Flag question](#)

The methods in an interface can not be,

a. abstract

b. static

c. private

d. None of the mentioned

Question **24**

Complete

Which is true about the import statement in Java?

d. None of the mentioned

Question **24**

Complete

Marked out of
1.00

 [Flag question](#)

Which is true about the import statement in Java?

- a. The import statement must be the first statement after any package declaration in a file.
- b. The import statement is mandatory when using classes of other packages since there is no other way to use a class.
- c. When .* is used in an import statement, all the classes in that package and the sub-packages will be imported.
- d. The import statements must appear before any package statement is declared.

Question **25**

Complete

Marked out of
1.00

 [Flag question](#)

Which is correct option about java interface?

- a. An interface can extend another interface.
- b. Interface is used to achieve multiple inheritance in java.
- c. Object of an interface cannot be created.
- d. All of the mentioned

Question **26**

Complete

Marked out of
1.00

 [Flag question](#)

Which statement is true about interfaces?

- a. Members of an interface can always be declared static.
- b. Members of an interface are never static.
- c. Interfaces can extend any number of other interfaces.
- d. Interfaces allow multiple implementation inheritance.

Question **27**

Complete

Marked out of
1.00

 [Flag question](#)

Which is a valid declaration within an interface?

- a. static char madness(double duty);
- b. protected short stop = 23;
- c. final void madness(short stop);
- d. public Boolean madness(long bow);

Question **28**
Complete
Marked out of
1.00
[Flag question](#)

Given the following,

```
interface Count {  
    short counter = 0;  
  
    void countUp();  
}  
  
public class TestCount implements Count {  
  
    public static void main(String[] args) {  
        TestCount t = new TestCount();  
        t.countUp();  
    }  
  
    public void countUp() {  
        for (int x = 6; x > counter; x--, ++counter) {  
            System.out.print(" " + counter);  
        }  
    }  
}
```

What is the result?

- a. 1 2 3
- b. Compilation fails
- c. 0 1 2 3
- d. 1 2 3 4

Question **29**

Complete

Marked out of
1.00

 [Flag question](#)

Which of the following statements about interfaces is not true?

- a. A class can extend another class.
- b. An interface can implement another interface.
- c. An interface can extend another interface.
- d. A class can implement two interfaces.

Question **30**

Complete

Marked out of
1.00

 [Flag question](#)

You decide that you wish to add your application's class to a group of classes that are stored in the location /examples/basics.

Complete the code to do this

- a. package examples.basics;
- b. package examples/basics;
- c. import package examples.basics;
- d. import examples.basics;

Question **31**

Complete

Marked out of
1.00

Flag question

Suppose you are creating a class named Button that you want to include in a group of related classes called controls.

Identify the correct code that includes the class in that group.

- a. package controls;
- b. public class Button
- c. package Button;
- d. import controls;

Question **32**

Complete

Marked out of
1.00

 [Flag question](#)

Which of the following is true about interfaces in java.

1) An interface can contain following type of members.

....public, static, final fields (i.e., constants)

....default and static methods with bodies

2) An instance of interface can be created.

3) A class can implement multiple interfaces.

4) Many classes can implement the same interface.

a. 1, 3 and 4

b. 1, 2, 3 and 4

c. 1, 2 and 4

d. 2, 3 and 4

Question 33

Complete

Marked out of
1.00

 [Flag question](#)

Which statement is true about interfaces?

- a. The keyword extends is used to specify that an interface inherits from another interface.
- b. The keyword implements is used to specify that an interface inherits from another interface.
- c. The keyword implements is used to specify that a class inherits from another class.
- d. The keyword extends is used to specify that a class inherits from an interface.

Question 34

Complete

Marked out of
1.00

 [Flag question](#)

Which of the following is/are true about packages in Java?

- 1) Every class is part of some package.
- 2) All classes in a file are part of the same package.
- 3) If no package is specified, the classes in the file go into a special unnamed package
- 4) If no package is specified, a new package is created with folder name of class and the class is put in this package.

- a. Only 1 and 3
- b. Only 4
- c. Only 1, 2 and 4
- d. Only 1, 2 and 3

Question **35**

Complete

Marked out of
1.00

 [Flag question](#)

Which of the following is true?

- a. A class can extend one class and implement many interfaces.
- b. A class can extend more than one class.
- c. A class can extend only one class but many interfaces.
- d. An interface can implement many interfaces.

[Finish review](#)

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Status	Finished
Started	Sunday, 6 October 2024, 1:13 PM
Completed	Sunday, 6 October 2024, 1:49 PM
Duration	36 mins 6 secs

Question 1

Correct

Marked out of 5.00

Create interfaces shown below.

```
interface Sports {
    public void setHomeTeam(String name);
    public void setVisitingTeam(String name);
}
```

```
interface Football extends Sports {
    public void homeTeamScored(int points);
    public void visitingTeamScored(int points);}
```

create a class College that implements the Football interface and provides the necessary functionality to the abstract methods.

sample Input:

```
Rajalakshmi
Saveetha
22
21
```

Output:

```
Rajalakshmi 22 scored
Saveetha 21 scored
Rajalakshmi is the Winner!
```

For example:

Test	Input	Result
1	Rajalakshmi Saveetha 22 21	Rajalakshmi 22 scored Saveetha 21 scored Rajalakshmi is the winner!

Answer: (penalty regime: 0 %)

[Reset answer](#)

```
1 import java.util.Scanner;
2 interface Sports {
3     public void setHomeTeam(String name);
4     public void setVisitingTeam(String name);
5 }
6 interface Football extends Sports {
7     public void homeTeamScored(int points);
8     public void visitingTeamScored(int points);
9 }
10
11
12 class College implements Football {
13     String homeTeam;
14     String visitingTeam;
15
16     public void setHomeTeam(String name){
17         this.homeTeam=name;
18     }
19     public void setVisitingTeam(String name){
20         visitingTeam=name;
21     }
22     public void homeTeamScored(int points){
23         System.out.println(homeTeam+ " "+points+" scored");
24     }
25     public void visitingTeamScored(int points){
26         System.out.println(visitingTeam+ " "+points+" scored");
27     }
28     public void winningTeam(int p1, int p2){
29         if(p1>p2)
30             System.out.println(homeTeam + " is the winner!");
31
32         else if(p1<p2)
33             System.out.println(visitingTeam + " is the winner!");
34
35     }
36 }
```

```

36     System.out.println("It's a tie match.");
37 }
38 }
39 }
40 v class prog{
41 v   public static void main(String[] args){
42     String hname;
43     Scanner sc= new Scanner(System.in);
44     hname=sc.nextLine();
45     String vteam=sc.next();
46     int hpoints=sc.nextInt();
47     int vpoints=sc.nextInt();
48     College s= new College();
49     s.setHomeTeam(hname);
50     s.setVisitingTeam(vteam);
51     s.homeTeamScored(hpoints);
52     s.visitingTeamScored(vpoints);

```

	Test	Input	Expected	Got	
✓	1	Rajalakshmi Saveetha 22 21	Rajalakshmi 22 scored Saveetha 21 scored Rajalakshmi is the winner!	Rajalakshmi 22 scored Saveetha 21 scored Rajalakshmi is the winner!	✓
✓	2	Anna Balaji 21 21	Anna 21 scored Balaji 21 scored It's a tie match.	Anna 21 scored Balaji 21 scored It's a tie match.	✓
✓	3	SRM VIT 20 21	SRM 20 scored VIT 21 scored VIT is the winner!	SRM 20 scored VIT 21 scored VIT is the winner!	✓

Passed all tests! ✓

Question 2

Correct

Marked out of 5.00

create an interface Playable with a method play() that takes no arguments and returns void. Create three classes Football, Volleyball, and Basketball that implement the Playable interface and override the play() method to play the respective sports.

```
interface Playable {
    void play();
}

class Football implements Playable {
    String name;
    public Football(String name){
        this.name=name;
    }
    public void play() {
        System.out.println(name+" is Playing football");
    }
}
```

Similarly, create Volleyball and Basketball classes.

Sample output:

```
Sadvin is Playing football
Sanjay is Playing volleyball
Sruthi is Playing basketball
```

For example:

Test	Input	Result
1	Sadvin Sanjay Sruthi	Sadvin is Playing football Sanjay is Playing volleyball Sruthi is Playing basketball
2	Vijay Arun Balaji	Vijay is Playing football Arun is Playing volleyball Balaji is Playing basketball

Answer: (penalty regime: 0 %)

```
1 import java.util.Scanner;
2 interface Playable{
3     void play();
4 }
5 class Football implements Playable{
6     String name;
7     public Football(String name){
8         this.name=name;
9     }
10    public void play(){
11        System.out.println(name + " is Playing football");
12    }
13 }
14 class Volleyball implements Playable{
15     String name;
16     public Volleyball(String name){
17         this.name=name;
18     }
19     public void play(){
20         System.out.println(name + " is Playing volleyball");
21     }
22 }
23 class Basketball implements Playable{
24     String name;
25     public Basketball(String name){
26         this.name=name;
27     }
28     public void play(){
29         System.out.println(name + " is Playing basketball");
30     }
31 }
32 class prog{
33     public static void main(String[] args){
```

```

34     Scanner scan=new Scanner(System.in);
35     String name=scan.nextLine();
36     Football foot=new Football(name);
37     name= scan.nextLine();
38     Volleyball volley=new Volleyball(name);
39     name=scan.nextLine();
40     Basketball basket=new Basketball(name);
41     foot.play();
42     volley.play();
43     basket.play();
44   }
45 }
```

	Test	Input	Expected	Got	
✓	1	Sadhvin Sanjay Sruthi	Sadhvin is Playing football Sanjay is Playing volleyball Sruthi is Playing basketball	Sadhvin is Playing football Sanjay is Playing volleyball Sruthi is Playing basketball	✓
✓	2	Vijay Arun Balaji	Vijay is Playing football Arun is Playing volleyball Balaji is Playing basketball	Vijay is Playing football Arun is Playing volleyball Balaji is Playing basketball	✓

Passed all tests! ✓

Question 3

Correct

Marked out of 5.00

RBI issues all national banks to collect interest on all customer loans.

Create an RBI interface with a variable String parentBank="RBI" and abstract method rateOfInterest().

RBI interface has two more methods default and static method.

```
default void policyNote() {
    System.out.println("RBI has a new Policy issued in 2023.");
}

static void regulations() {
    System.out.println("RBI has updated new regulations on 2024.");
}
```

Create two subclasses SBI and Karur which implements the RBI interface.

Provide the necessary code for the abstract method in two sub-classes.

Sample Input/Output:

RBI has a new Policy issued in 2023
RBI has updated new regulations in 2024.
SBI rate of interest: 7.6 per annum.
Karur rate of interest: 7.4 per annum.

For example:

Test	Result
1	RBI has a new Policy issued in 2023 RBI has updated new regulations in 2024. SBI rate of interest: 7.6 per annum. Karur rate of interest: 7.4 per annum.

Answer: (penalty regime: 0 %)

```
1 interface RBI{
2     String parentBank="RBI";
3     double rateOfInterest();
4     default void policyNote(){
5         System.out.println("RBI has a new Policy issued in 2023");
6     }
7     static void regulations(){
8         System.out.println("RBI has updated new regulations in 2024.");
9     }
10 }
11 class SBI implements RBI{
12     public double rateOfInterest(){
13         return 7.6;
14     }
15 }
16 class Karur implements RBI{
17     public double rateOfInterest(){
18         return 7.4;
19     }
20 }
21 public class main{
22     public static void main(String[] args){
23         SBI sbi=new SBI();
24         Karur karur=new Karur();
25         sbi.policyNote();
26         RBI.regulations();
27         System.out.println("SBI rate of interest: "+ sbi.rateOfInterest()+" per annum.");
28         System.out.println("Karur rate of interest: "+ karur.rateOfInterest()+" per annum.");
29     }
30 }
```

	Test	Expected	Got	
✓	1	RBI has a new Policy issued in 2023 RBI has updated new regulations in 2024. SBI rate of interest: 7.6 per annum. Karur rate of interest: 7.4 per annum.	RBI has a new Policy issued in 2023 RBI has updated new regulations in 2024. SBI rate of interest: 7.6 per annum. Karur rate of interest: 7.4 per annum.	✓

Passed all tests! ✓

[◀ Lab-07-MCQ](#)

Jump to...

[Generate series and find Nth element ►](#)

CS23333-Object Oriented Programming Using Java-2023

Quiz navigation

1	2	3	4	5
6	7	8	9	10
11	12	13	14	15
16	17	18	19	20
21	22	23	24	25
26	27	28	29	30
31	32	33	34	35

Status Finished

Started Monday, 14 October 2024, 10:41 PM

Completed Monday, 14 October 2024, 11:02 PM

Duration 21 mins 15 secs

Question 1

Complete

Marked out of
1.00

 [Flag question](#)

Which of these packages contains abstract keyword?

- a. java.system
- b. java.lang
- c. java.io
- d. java.util

Show one page at a time

Finish review

Question **2**

Complete

Marked out of
1.00

 Flag question

Given:

```
1 abstract class AbstractIt
2 {
3     abstract float getFloat();
4 }
5 public class Test1 extends AbstractIt
6 {
7     private float f1 = 1.0f;
8     private float getFloat(){ return f1;}
9
10    public static void main(String[] args)
11    {
12    }
13 }
```

- a. Compilation error at line no 8
- b. Compilation succeeds
- c. Runtime error at line 8
- d. Compilation error at line no 5

Question 3

Complete

Marked out of
1.00

 Flag question

A class Car and its subclass Yugo both have a method run() which was written by the programmer as part of the class definition. If junker refers to an object of type Yugo, what will the following code do?

junker.run();

- a. The run() method defined in Yugo will be called.
- b. The compiler will complain that run() has been defined twice.
- c. The run() method defined in Car will be called.
- d. Overloading will be used to pick which run() is called.

Question 4

Complete

Marked out of
1.00

 Flag question

What is the output of this program?

```
abstract class A
{
    int i;
    abstract void display();
}

class B extends A
{
    int j;
    void display()
    {
        System.out.println(j);
    }
}

class Abstract_demo
{
    public static void main(String args[])
    {
        B obj = new B();
        obj.j=2;
        obj.display();
    }
}
```

- a. Compilation error
- b. Runtime error occurs.

Question 5

Complete

Marked out of
1.00

 [Flag question](#)

Here is a situation:

Birthday happy;

```
happy = new AdultBirthday( "Joe", 39);
```

```
happy.greeting();
```

Which greeting() method is run ?

- a. The one defined for Birthday because that is the type of the variable happy.
- b. The assignment statement where the AdultBirthday object is assigned to happy variable is an error.
- c. The one defined for AdultBirthday because that is the type of the object referred to by happy.
- d. The one closest in the source code to the happy.greeting() statement.

Question 6

Complete

Marked out of
1.00

 [Flag question](#)

Given the following:

```
1. class Over {  
2.     int doStuff(int a, float B. {  
3.         return 7;  
4.     }  
5. }  
6.  
7. class Over2 extends Over {  
8.     // insert code here  
9. }
```

Which method, if inserted at line 8, will not compile?

- a. private int doStuff(int x, double y) { return 4; }
- b. public int doStuff(int x, float y) { return 4; }
- c. private int doStuff(int x, float y) {return 4; }
- d. protected int doStuff(int x, float y) {return 4; }

Question 1
Complete
Marked out of 1.00
[Flag question](#)

Given:

```
1. abstract class AbstractClass {  
2.     void setup() {}  
3.     abstract int execute();  
4.  
5. class EC extends AbstractClass {  
6.     int execute() {  
7.         System.out.println("execute of EC invoked");  
8.         return 0;  
9.     }  
10.  
11. public class TestEC {  
12.     public static void main(String... args) {  
13.         EC ec = new EC();  
14.         ec.setup();  
15.         ec.execute();  
16.     }  
17. }
```

What is the expected behaviour?

- a. Compilation error at line 2.
- b. Runtime error occurs.
- c. Compilation error at line 14.
- d. Prints "execute of EC invoked".

Question 8

Complete

Marked out of
1.00

[Flag question](#)

Which of these keywords can be used to prevent Method overriding?

- a. protected
- b. final
- c. static
- d. constant

Question 9

Complete

Marked out of
1.00

[Flag question](#)

Given the following:

```
class Foo {  
    String doStuff(int x) { return "hello"; }  
}
```

Which method would not be legal in a subclass of Foo?

- a. int doStuff(int x) { return 42; }
- b. public String doStuff(int x) { return "Hello"; }
- c. protected String doStuff(int x) { return "Hello"; }
- d. String doStuff(int x) { return "hello"; }

Question 10

Complete

Marked out of
1.00

 [Flag question](#)

Which one of the following statement is false?

- a. A subclass must override all the methods of the superclass.
- b. Inheritance defines a is-a relationship between a superclass and its subclasses.
- c. It is possible for a subclass to define a method with the same name and parameters as a method defined by the superclass.
- d. Aggregation defines a has-a relationship between a superclass and its subclasses.

Question 11

Complete

Marked out of
1.00

 [Flag question](#)

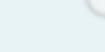
If a class inheriting an abstract class does not define all of its function then it will be known as?

- a. None of the mentioned
- b. A simple class
- c. Static class
- d. Abstract

Question **12**

Complete

Marked out of
1.00

 [Flag question](#)

Which statement is true?

- a. Public methods of a superclass cannot be overridden in subclasses.
- b. Private methods of a superclass cannot be overridden in subclasses.
- c. Protected methods of a superclass cannot be overridden in subclasses.
- d. Methods with default access in a superclass cannot be overridden in subclasses.

Question 13

Complete

Marked out of
1.00

 Flag question

Given the following code:

```
class MySuper {  
    final int calculate(int i, int j) {  
        return i * j;  
    }  
}
```

```
public class MySub extends MySuper {  
    int calculate(int i, int j) {  
        return 2 * i * j;  
    }  
}
```

```
public static void main(String[] args) {  
    MySuper sup = new MySub();  
    int k = sup.calculate(2, 5);  
    System.out.println(k);  
}  
}
```

What is the result?

- a. 10
- b. An exception is thrown at runtime
- c. Compilation error
- d. 20

Question 14

Complete

Marked out of
1.00[Flag question](#)

Which declaration prevents creating a subclass of a top level class?

- a. private class Javacg{}
- b. final abstract class Javacg{}
- c. abstract public class Javacg{}
- d. final public class Javacg{}

Question 15

Complete

Marked out of
1.00[Flag question](#)

Which one of the following statements is true?

- a. An abstract class can not extend a concrete class.
- b. An abstract class can be instantiated.
- c. An abstract class is implicitly final.
- d. An abstract class can declare non-abstract methods.

Question 16

Complete

Marked out of
1.00[Flag question](#)

What is the process of defining a method in subclass having same name & type signature as a method in its superclass?

- a. Method overriding
- b. Method hiding
- c. Method overloading
- d. None of the mentioned

Question **17**

Complete

Marked out of
1.00

 [Flag question](#)

Which statement is true?

- a. A subclass can override any method present in a superclass.
- b. The parameter list of an overriding method must be a subset of the parameter list of the method that it is overriding.
- c. Private methods of a superclass cannot be overridden in subclasses.
- d. An overriding method can declare that it throws more exceptions than the method it is overriding.

Question 18

Complete

Marked out of
1.00[Flag question](#)

What will be the result of attempting to compile and run the following program?

```
public class Polymorphism2 {  
    public static void main(String[] args) {  
        A ref1 = new C();  
        B ref2 = (B) ref1;  
        System.out.println(ref2.g());  
    }  
}
```

```
class A {  
    private int f0 {  
        return 0;  
    }
```

```
    public int g0 {  
        return 3;  
    }  
}
```

```
class B extends A {  
    private int f0 {  
        return 1;  
    }
```

```
    public int g0 {  
        return f0;  
    }  
}
```

```
class C extends B {  
    public int f0 {  
        return 2;  
    }  
}
```

- a. The program will compile without error and print 1 when run.
- b. The program will compile without error and print 2 when run.

Question 19

Complete

Marked out of
1.00

 [Flag question](#)

What is an abstract method?

- a. An abstract method is any method in an abstract class.
- b. An abstract method is one without a body that is declared with the reserved word abstract
- c. An abstract method is a method in the child class that overrides a parent method.
- d. An abstract method is a method which cannot be inherited.

Question 20

Complete

Marked out of
1.00

 [Flag question](#)

Which statement is true?

- a. It is possible for a subclass to define a method with the same name and parameters as a method defined by the superclass.
- b. A subclass must define all the methods from the superclass.
- c. Aggregation defines a is-a relationship between a superclass and its subclasses.
- d. It is possible for two classes to be the superclass of each other.

Question 21

Complete

Marked out of
1.00

 [Flag question](#)

In the below class, is constructor overloaded or is method overloaded?

```
public class A
```

```
{
```

```
    public A()
```

```
{
```

```
    //----> (1)
```

```
}
```

```
void A()
```

```
{
```

```
    //----> (2)
```

```
}
```

```
}
```

- a. Method
- b. None of the mentioned
- c. Both constructor and method
- d. Constructor

Question 22

Complete

Marked out of
1.00

 [Flag question](#)

Can an **abstract class** define both **abstract methods** and non-**abstract methods**?

- a. No-it must have all abstract methods.
- b. No-it must have all one or the other.
- c. Yes-but the **child classes** do not inherit the abstract methods.
- d. Yes-the child classes inherit both.

Question **23**
Complete
Marked out of
1.00
[Flag question](#)

What will be the result of attempting to compile and run the following program?

```
public class Polymorphism {  
    public static void main(String[] args) {  
        A ref1 = new C();  
        B ref2 = (B) (ref1);  
        System.out.println(ref2.f());  
    }  
}
```

```
class A {  
    int f() {  
        return 0;  
    }  
}
```

```
class B extends A {  
    int f() {  
        return 1;  
    }  
}
```

```
class C extends B {  
    int f() {  
        return 2;  
    }  
}
```

- a. The program will fail to compile.
- b. The program will compile without error, but will throw a ClassCastException when run.
- c. The program will compile without error and print 2 when run.
- d. The program will compile without error and print 1 when run.

Question **24**

Complete

Marked out of
1.00

 [Flag question](#)

Which of these is supported by method overriding in Java?

- a. Encapsulation
- b. None of the mentioned
- c. Abstraction
- d. Polymorphism

Question **25**
Complete
Marked out of
1.00
[Flag question](#)

What is the output of this program?

```
class A
{
    int i;
    public void display()
    {
        System.out.println(i);
    }
}
class B extends A
{
    int j;
    public void display()
    {
        System.out.println(j);
    }
}
class Dynamic_dispatch
{
    public static void main(String args[])
    {
        B obj2 = new B();
        obj2.i = 1;
        obj2.j = 2;
        A r;
        r = obj2;
        r.display();
    }
}
```

- a. 3
- b. 2
- c. 4
- d. 1

Question 26

Complete

Marked out of
1.00

 Flag question

Given:

```
abstract class Shape {  
    public abstract void draw();  
}  
  
public class Circle extends Shape {  
    public void draw() {}  
}
```

Which one of the following statement is correct?

a. Shape s = new Shape();

s.draw();

b. Circle c = new Shape();

c.draw();

c. Shape s = new Circle();

s.draw();

d. Shape s = new Circle();

s->draw();

Question 27

Complete

Marked out of
1.00

 [Flag question](#)

Given the following:

```
class A {  
    public void baz() {  
        System.out.println("A");  
    }  
}  
  
public class B extends A {  
    public static void main(String[] args) {  
        A a = new B();  
        a.baz();  
    }  
}
```

```
public void baz() {  
    System.out.println("B");  
}  
}
```

What is the result?

- a. B
- b. Compilation fails.
- c. A
- d. An exception is thrown at runtime.

Question 28

Complete

Marked out of
1.00

 Flag question

Given:

```
1. public class TestOverload {  
2.  
3.     public void process() {  
4.         }  
5.  
6.     public String process() {  
7.         return "hello";  
8.     }  
9.  
10.    public float process(int x) {  
11.        return 67.5f;  
12.    }  
13.}
```

What is the result?

- a. Compilation fails because of an error in line 10.
- b. Compilation succeeds and no runtime errors with class TestOverload occur.
- c. Compilation fails because of an error in line 6.
- d. An exception is thrown at runtime.

Question 29

Complete

Marked out of
1.00

 Flag question

Here is an abstract method defined in the parent:

```
public abstract int sumUp ( int[] arr );
```

Which of the following is required in a non-abstract child?

- a. public int sumUp (int[] arr) { ... }
- b. public double sumUp (int[] arr) { ... }
- c. public abstract int sumUp (int[] arr) { ... }
- d. public int sumUp (long[] arr) { ... }

Question 30

Complete

Marked out of
1.00

 Flag question

Which statement is true?

- a. The subclass of a non-abstract class can be declared abstract.
- b. A final class can be abstract.
- c. A class in which all the members are declared private, cannot be declared public.
- d. All the members of the superclass are inherited by the subclass.

Question 31

Complete

Marked out of
1.00

[Flag question](#)

Given the following:

```
1. class ParentClass {  
2.     public int doStuff(int x) {  
3.         return x * 2;  
4.     }  
5. }  
6.  
7. public class ChildClass extends ParentClass {  
8.     public static void main(String [] args ) {  
9.         ChildClass cc = new ChildClass();  
10.        long x = cc.doStuff(7);  
11.        System.out.println("x = " + x);  
12.    }  
13.  
14.    public long doStuff(int x) {  
15.        return x * 3;  
16.    }  
17. }
```

What is the result?

- a. x = 21
- b. Compilation fails at line 14.
- c. Compilation fails at line 2.
- d. x = 14

Question 32

Complete

Marked out of
1.00

 [Flag question](#)

What is an abstract class?

- a. An abstract class is another name for "base class."
- b. An abstract class is one without any child classes.
- c. An abstract class is a class which cannot be instantiated.
- d. An abstract class is any parent class with more than one child class.

Question 33

Complete

Marked out of
1.00

 [Flag question](#)

Given the following,

1. abstract class A {
2. abstract short m1();
3. short m2() { return (short) 420; }
4. }
- 5.
6. abstract class B extends A {
7. // missing code?
8. short m1() { return (short) 42; }
9. }

Which of the following statements is true?

- a. If class A was not abstract and method m1() on line 2 was implemented, the code would not compile.
- b. It is legal, but not required, for class B to either make an abstract declaration of method m2() or implement method m2() for the code to compile.
- c. As long as line 8 exists, class A must declare method m1() in some way.

Question 34

Complete

Marked out of
1.00

[Flag question](#)

Given the following classes and declarations, which statement is true?

```
// Classes
class Foo {
    private int i;
    private void f() /* ... */
    public void g() /* ... */
}
class Bar extends Foo {
    public int j;
    public void g() /* ... */
}
// Declarations:
// ...
Foo a = new Foo();
Bar b = new Bar();
// ...
```

- a. The statement a.g(); is legal.
- b. The statement b.f(); is legal.
- c. The statement b.i = 3; is legal
- d. The statement a.j = 5; is legal.

Question 35

Complete
Marked out of
1.00
[Flag question](#)

What would be the result of attempting to compile and executing the following code?

```
// Filename: MyClass.java
public class MyClass {
    public static void main(String[] args) {
        C c = new C();
        System.out.println(c.max(13, 29));
    }
}

class A {
    int max(int x, int y) {
        if (x > y)
            return x;
        else
            return y;
    }
}

class B extends A {
    int max(int x, int y) {
        return super.max(y, x) - 10;
    }
}

class C extends B {
    int max(int x, int y) {
        return super.max(x + 10, y + 10);
    }
}
```

- a. The code will fail to compile because the max() method in B passes the arguments in the call super.max(y, x) in the wrong order.
- b. code will compile without errors and will print 39 when run.
- c. The code will fail to compile because a call to a max() method is ambiguous.
- d. code will compile without errors and will print 29 when run.

[Dashboard](#) / [My courses](#) / [CS23333-OOPUJ-2023](#) / [Lab-08 - Polymorphism, Abstract Classes, final Keyword](#) / [Lab-08-Logic Building](#)

Status	Finished
Started	Thursday, 10 October 2024, 12:12 PM
Completed	Thursday, 10 October 2024, 12:21 PM
Duration	8 mins 35 secs

Question 1

Correct

Marked out of 5.00

1. Final Variable:

- Once a variable is declared `final`, its value cannot be changed after it is initialized.
- It must be initialized when it is declared or in the constructor if it's not initialized at declaration.
- It can be used to define constants

```
final int MAX_SPEED = 120; // Constant value, cannot be changed
```

2. Final Method:

- A method declared `final` cannot be overridden by subclasses.
- It is used to prevent modification of the method's behavior in derived classes.

```
public final void display() {
    System.out.println("This is a final method.");
}
```

3. Final Class:

- A class declared as `final` cannot be subclassed (i.e., no other class can inherit from it).
- It is used to prevent a class from being extended and modified.
- `public final class Vehicle {
 // class code
}`

Given a Java Program that contains the bug in it, your task is to clear the bug to the output.

you should delete any piece of code.

For example:

Test	Result
1	The maximum speed is: 120 km/h This is a subclass of FinalExample.

Answer: (penalty regime: 0 %)

[Reset answer](#)

```
1 public class FinalExample {
2     final int MAX_SPEED = 120;
3
4     public final void display() {
5         System.out.println("The maximum speed is: " + MAX_SPEED + " km/h");
6     }
7     public static void main(String[] args){
8         Subclass obj = new Subclass();
9         obj.display();
10        obj.showMessage();
11    }
12 }
13
14 class Subclass extends FinalExample {
15     public void showMessage() {
16         System.out.println("This is a subclass of FinalExample.");
17     }
18 }
19 }
```

	Test	Expected	Got	
✓	1	The maximum speed is: 120 km/h This is a subclass of FinalExample.	The maximum speed is: 120 km/h This is a subclass of FinalExample.	✓

Passed all tests! ✓

Question 2

Correct

Marked out of 5.00

As a logic building learner you are given the task to extract the string which has vowel as the first and last characters from the given array of Strings.

Step1: Scan through the array of Strings, extract the Strings with first and last characters as vowels; these strings should be concatenated.

Step2: Convert the concatenated string to lowercase and return it.

If none of the strings in the array has first and last character as vowel, then return no matches found

input1: an integer representing the number of elements in the array.

input2: String array.

Example 1:

input1: 3

input2: {"oreo", "sirish", "apple"}

output: oreoapple

Example 2:

input1: 2

input2: {"Mango", "banana"}

output: no matches found

Explanation:

None of the strings has first and last character as vowel.

Hence the output is no matches found.

Example 3:

input1: 3

input2: {"Ate", "Ace", "Girl"}

output: ateace

For example:

Input	Result
3 oreo sirish apple	oreoapple
2 Mango banana	no matches found
3 Ate Ace Girl	ateace

Answer: (penalty regime: 0 %)

```

1 import java.util.Scanner;
2 public class VowelStringConcatenation{
3     public static boolean isVowel(char c){
4         c= Character.toLowerCase(c);
5         return c == 'a' || c=='e'|| c=='i'||c=='o'||c=='u';
6     }
7     public static String extractAndConcatenate(int numOfString, String[] arr){
8         StringBuilder result = new StringBuilder();
9         for(String str:arr){
10             if(str.length()>0 && isVowel(str.charAt(0)) && isVowel(str.charAt(str.length()-1))){
11                 result.append(str);
12             }
13         }
14         if(result.length() == 0){
15             return "no matches found";
16         }
17         return result.toString().toLowerCase();
18     }
19 }
```

```
20     Scanner scanner = new Scanner(System.in);
21     int numOfStrings=scanner.nextInt();
22     scanner.nextLine();
23     String[] arr = new String[numOfStrings];
24     String inputLine = scanner.nextLine();
25     String[] inputStrings = inputLine.split(" ");
26     for(int i=0;i<numOfStrings;i++){
27         arr[i]=inputStrings[i];
28     }
29     String result = extractAndConcatenate(numOfStrings,arr);
30     System.out.println(result);
31     scanner.close();
32 }
33 }
```

	Input	Expected	Got	
✓	3 oreo sirish apple	oreoapple	oreoapple	✓
✓	2 Mango banana	no matches found	no matches found	✓
✓	3 Ate Ace Girl	ateace	ateace	✓

Passed all tests! ✓



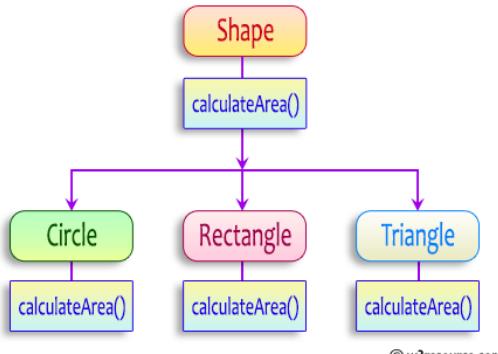
Question 3

Correct

Marked out of 5.00

Create a base class Shape with a method called calculateArea(). Create three subclasses: Circle, Rectangle, and Triangle. Override the calculateArea() method in each subclass to calculate and return the shape's area.

In the given exercise, here is a simple diagram illustrating polymorphism implementation:



```

abstract class Shape {
    public abstract double calculateArea();
}
  
```

System.out.printf("Area of a Triangle :%.2f%n",((0.5)*base*height)); // use this statement

sample Input :

```

4 // radius of the circle to calculate area PI*r*r
5 // length of the rectangle
6 // breadth of the rectangle to calculate the area of a rectangle
4 // base of the triangle
3 // height of the triangle
  
```

OUTPUT:

Area of a circle :50.27
Area of a Rectangle :30.00
Area of a Triangle :6.00

For example:

Test	Input	Result
1	4 5 6 4 3	Area of a circle: 50.27 Area of a Rectangle: 30.00 Area of a Triangle: 6.00
2	7 4.5 6.5 2.4 3.6	Area of a circle: 153.94 Area of a Rectangle: 29.25 Area of a Triangle: 4.32

Answer: (penalty regime: 0 %)

```

1 import java.util.Scanner;
2 abstract class Shape{
3     public abstract double calculateArea();
4 }
5 class Circle extends Shape{
6     private double radius;
7     public Circle(double radius){
8         this.radius = radius;
9     }
10    @Override
11    public double calculateArea(){
12        return Math.PI * radius*radius;
13    }
  
```

```

13     }
14 }
15 class Rectangle extends Shape{
16     private double length;
17     private double breadth;
18 public Rectangle(double length,double breadth){
19     this.length=length;
20     this.breadth=breadth;
21 }
22 @Override
23 public double calculateArea(){
24     return length * breadth;
25 }
26 }
27 class Triangle extends Shape{
28     private double base;
29     private double height;
30 public Triangle(double base,double height){
31     this.base=base;
32     this.height=height;
33 }
34 @Override
35 public double calculateArea(){
36     return 0.5*base*height;
37 }
38 }
39 public class Main{
40 public static void main(String[] args){
41     Scanner scanner = new Scanner(System.in);
42     double radius = scanner.nextDouble();
43     double length = scanner.nextDouble();
44     double breadth=scanner.nextDouble();
45     double base=scanner.nextDouble();
46     double height=scanner.nextDouble();
47     Shape circle=new Circle(radius);
48     Shape rectangle=new Rectangle(length,breadth);
49     Shape triangle = new Triangle(base,height);
50     System.out.printf("Area of a circle: %.2f%n", circle.calculateArea());
51     System.out.printf("Area of a Rectangle: %.2f%n", rectangle.calculateArea());
52     System.out.printf("Area of a Triangle: %.2f%n", triangle.calculateArea());

```

	Test	Input	Expected	Got	
✓	1	4 5 6 4 3	Area of a circle: 50.27 Area of a Rectangle: 30.00 Area of a Triangle: 6.00	Area of a circle: 50.27 Area of a Rectangle: 30.00 Area of a Triangle: 6.00	✓
✓	2	7 4.5 6.5 2.4 3.6	Area of a circle: 153.94 Area of a Rectangle: 29.25 Area of a Triangle: 4.32	Area of a circle: 153.94 Area of a Rectangle: 29.25 Area of a Triangle: 4.32	✓

Passed all tests! ✓

◀ Lab-08-MCQ

Jump to...

FindStringCode ►

Question 1

Complete

Marked out of
1.00

 Flag question

Given the following,

```
public class MyProgram {  
    public static void throwit() {  
        throw new RuntimeException();  
    }  
    public static void main(String args[]){  
        try {  
            System.out.println("Hello world ");  
            throwit();  
            System.out.println("Done with try block ");  
        }  
        finally {  
            System.out.println("Finally executing ");  
        }  
    }  
}
```

Which answer most closely indicates the behavior of the program?

- a. The program will not compile.
- b. The program will print Hello world, then will print that a RuntimeException has occurred, and then will print Finally executing.
- c. The program will print Hello world, then will print Finally executing, then will print that a RuntimeException has occurred.
- d. The program will print Hello world, then will print that a RuntimeException has occurred, then will print Done with try block, and then will print Finally executing.

Question 2

Complete

Marked out of
1.00

 Flag question

Given:

```
public class TestException {  
    public static void main(String... args) {  
        try {  
            // some piece of code  
        } catch (NullPointerException e1) {  
            System.out.print("n");  
        } catch (RuntimeException e2) {  
            System.out.print("r");  
        } finally {  
            System.out.print("f");  
        }  
    }  
}
```

What is the output if NullPointerException occurs when executing the code in the try block?

- a. nrf
- b. f
- c. nf
- d. rf

Question 3

Complete

Marked out of
1.00

 Flag question

Given the following:

```
1. class Base {  
2.     void display() throws Exception { throw new Exception(); }  
3. }  
4. public class Derived extends Base {  
5.     void display() { System.out.println("Derived"); }  
6.     public static void main(String[] args) {  
7.         new Derived().display();  
8.     }  
9. }
```

What is the result ?

- a. The code runs with no output.
- b. Compilation fails because of an error in line 2.
- c. Derived
- d. Compilation fails because of an error in line 7.

Question 4

Complete

Marked out of
1.00

 Flag question

Given:

```
1. public class B {  
2.     Integer x;  
3.     int sum;  
4.     public B(int y) {  
5.         sum=x+y;  
6.         System.out.println(sum);  
7.     }  
8.     public static void main(String[] args) {  
9.         new B(new Integer(23));  
10.    }  
11.}
```

What is the expected output?

- a. The value "23" is printed at the command line.
- b. A NumberFormatException occurs at runtime.
- c. Compilation fails because of an error in line 9.
- d. A NullPointerException occurs at runtime.

Question 5

Complete

Marked out of
1.00[Flag question](#)

On occurrence of which of the following is it possible for a program to recover?

- a. Exceptions
- b. Both errors and exceptions
- c. Errors
- d. Neither

Question 6

Complete

Marked out of
1.00[Flag question](#)

```
public class MyClass {  
    public static void main(String[] args) {  
        RuntimeException re = null;  
        throw re;  
    }  
}
```

What will be the result of attempting to compile and run the above program?

- a. The program will compile without error and will throw java.lang.RuntimeException when run.
- b. The program will compile without error and will throw java.lang.NullpointerException when run.
- c. The code will fail to compile, since the main() method does not declare that it throws RuntimeException in its declaration.
- d. The program will compile without error and will run and terminate without any output.

Question 7

Complete

Marked out of
1.00[Flag question](#)

What type of exception is thrown by parseInt() if it gets illegal data?

- a. ArithmeticException
- b. NumberFormatException
- c. RunTimeException
- d. NumberError

Question 8

Complete

Marked out of
1.00[Flag question](#)

What is the result of compiling and executing the below code with the mentioned arguments ?

```
java TestInvocation Welcome Year 2009
```

```
public class TestInvocation
{
    public static void main(String... args)
    {
        String arg1 = args[1];
        String arg2 = args[2];
        String arg3 = args[3];
    }
}
```

- a. Compilation fails
- b. Throws exception at runtime
- c. Compilation succeeds
- d. None of the mentioned.

Question 9

Complete

Marked out of
1.00

 Flag question

When is a finally{} block executed?

- a. Only when any exception is thrown in a try{} block.
- b. Always after execution has left a try catch{} block, no matter for what reason
- c. Only when an unhandled exception is thrown in a try{} block.
- d. Always just as a method is about to finish.

Question 10

Complete

Marked out of
1.00

 Flag question

Both class Error and class Exception are children of this parent:

- a. Catchable
- b. Runnable
- c. Throwable
- d. Problem

Question 11

Complete

Marked out of
1.00

Flag question

Given the following:

```
1. class ShapeException extends Exception {}  
2.  
3. class CircleException extends ShapeException {}  
4.  
5. public class Circle1 {  
6.     void m1() throws CircleException {throw new ShapeException();}  
7.  
8.     public static void main (String[] args) {  
9.         Circle1 circle1 = new Circle1();  
10.        int a=1, b=1;  
11.  
12.        try {circle1.m1(); a--;} catch (CircleException e) {b--;}  
13.  
14.        System.out.printf("a=%d, b=%d", a, b);  
15.    }  
16.}
```

What is the expected output?

- a. Compile time error at line 6.
- b. a=1, b=0
- c. a=0, b=1
- d. a=1, b=1

Question 12

Complete

Marked out of
1.00[Flag question](#)

Given the following:

```
public class TestDivide {  
    public static void main(String[] args) {  
        int value=0;  
        try {  
            int result = 10/value;  
        } finally {  
            System.out.println("f");  
        }  
    }  
}
```

What is the result ?

- a. Prints only "f" in the output.
- b. Only a runtime error is displayed.
- c. Prints an "f" in the output and a runtime error is also displayed.
- d. Compilation fails since a catch block is not present.

Question 13

Complete

Marked out of
1.00[Flag question](#)

Given the following code in the 3 java files:

NewException.java

```
class NewException extends Exception {  
}
```

Welcome.java

```
class Welcome {  
    public String displayWelcome(String name) throws NewException {  
        if(name == null) {  
            throw new NewException();  
        }  
        return "Welcome " + name;  
    }  
}
```

TestNewException.java

```
class TestNewException {  
    public static void main(String... args) {  
        Welcome w = new Welcome();  
        System.out.println(w.displayWelcome("Ram"));  
    }  
}
```

What is the result on compiling and executing it ?

- a. Compiles successfully and displays Ram when TestNewException is executed.
- b. Compilation of TestNewException.java fails
- c. Runtime exception occurs on executing the class TestNewException.
- d. Compilation of Welcome.java fails.

Question 14

Complete

Marked out of
1.00[Flag question](#)

Given the following,

```
1. import java.io.*;  
2. public class MyProgram {  
3.     public static void main(String args[]){  
4.         FileOutputStream out = null;  
5.         try {  
6.             out = new FileOutputStream("test.txt");  
7.             out.write(122);  
8.         }  
9.         catch(IOException io) {  
10.            System.out.println("IO Error.");  
11.        }  
12.        finally {  
13.            out.close();  
14.        }  
15.    }  
16.}
```

and given that all methods of class FileOutputStream, including close(), throw an IOException, which one of these is true?

- a. This program fails to compile due to an error at line 9.
- b. This program fails to compile due to an error at line 6.
- c. This program fails to compile due to an error at line 13.
- d. This program will compile successfully.

Question 15

Complete

Marked out of
1.00

 Flag question

What is the output of following code

```
class Main {  
    public static void main(String args[]) {  
        try {  
            throw 10;  
        }  
        catch(int e) {  
            System.out.println("Got the Exception " + e);  
        }  
    }  
}
```

- a. Runtime error
- b. Compiler Error
- c. Got the exception 10
- d. Got the exception 0

Question 16

Complete

Marked out of
1.00 Flag question

Given the following program, which one of the statements is true?

```
public class Exceptions {  
    public static void main(String[] args) {  
        try {  
            if (args.length == 0) return;  
            System.out.println(args[0]);  
        } finally {  
            System.out.println("The end");  
        }  
    }  
}
```

- a. The program will throw an `ArrayIndexOutOfBoundsException`.
- b. If run with one argument, the program will print the given argument followed by "The end".
- c. If run with one argument, the program will produce no output.
- d. If run with one argument, the program will simply print the given argument.

Question 17

Complete

Marked out of
1.00[Flag question](#)

Given the following:

```
class ShapeException extends Exception {  
}  
  
class CircleException extends ShapeException {  
}
```

```
public class Circle2 {  
    void m1() throws ShapeException {  
        throw new CircleException();  
    }  
}
```

```
public static void main(String[] args) {  
    Circle2 circle2 = new Circle2();  
    int a = 0, b = 0;
```

```
    try {  
        circle2.m1();  
        a++;  
    } catch (ShapeException e) {  
        b++;  
    }
```

```
    System.out.printf("a=%d, b=%d", a, b);  
}
```

What is the expected output ?

- a. a=0, b=0
- b. a=1, b=0
- c. Compile time error at line 6.
- d. a=0, b=1

Question 18

Complete

Marked out of
1.00[Flag question](#)

```
class A {  
    public static void main (String[] args) {  
        Error error = new Error();  
        Exception exception = new Exception();  
        System.out.print((exception instanceof Throwable) + ",");  
        System.out.print(error instanceof Throwable);  
    }  
}
```

What is the result of attempting to compile and run the program?

- a. Prints: false,true
- b. Prints: false,false
- c. Prints: true,true
- d. Prints: true,false

Question 19

Complete

Marked out of
1.00[Flag question](#)

Which of the following lists exception types from MOST specific to LEAST specific?

- a. Throwable, RunTimeException
- b. Error, Exception
- c. Exception, RunTimeException
- d. ArithmeticException, RunTimeException

Question 20

Complete

Marked out of
1.00[Flag question](#)

Which statement is TRUE about the try{} block?

- a. The try{} block can appear after the catch{} blocks.
- b. The try{} block can contain loops or branches.
- c. The statements in a try{} block can only throw one exception type and not several types.
- d. It is mandatory for statements in a try{} block to throw at least one exception type.

Question 21

Complete

Marked out of
1.00

 Flag question

What is the output of following code?

```
class Main {  
    public static void main(String args[]) {  
        int x = 0;  
        int y = 10;  
        int z = y/x;  
    }  
}
```

- a. Compiles and runs fine
- b. Compiles fine but throws ArithmeticException
- c. Complier Error
- d. None of the mentioned

Question 22

Complete

Marked out of
1.00

Flag question

Given the following,

```
1. public class RTEexcept {  
2.     public static void throwit () {  
3.         System.out.print("throwit ");  
4.         throw new RuntimeException();  
5.     }  
6.     public static void main(String [] args) {  
7.         try {  
8.             System.out.print("hello ");  
9.             throwit();  
10.        }  
11.        catch (Exception re ) {  
12.            System.out.print("caught ");  
13.        }  
14.        finally {  
15.            System.out.print("finally ");  
16.        }  
17.        System.out.println("after ");  
18.    }  
19. }
```

What is the output ?

- a. hello throwit RuntimeException caught after
- b. hello throwit caught
- c. hello throwit caught finally after
- d. hello throwit caught finally after RuntimeException

Question 23

Complete

Marked out of
1.00

 Flag question

```
class A {A() throws Exception {}} // 1
class B extends A {B() throws Exception {}} // 2
class C extends A {C() {}} // 3
```

Which one of the following statements is true?

- a. Compile-time error at 2.
- b. Compile-time error at 1.
- c. No compile-time errors.
- d. Compile-time error at 3.

Question 24

Complete

Marked out of
1.00[Flag question](#)

```
public class ExceptionTest {  
    public static void main(String[] args)  
    {  
        try  
        {  
            ExceptionTest a = new ExceptionTest();  
            a.badMethod();  
            System.out.println("A");  
        }  
        catch (Exception e)  
        {  
            System.out.println("B");  
        }  
        finally  
        {  
            System.out.println("C");  
        }  
    }  
  
    void badMethod()  
    {  
        throw new Error();  
    }  
}
```

What is the output?

- a. C followed by Error exception
- b. Error exception followed by C
- c. BC followed by Error exception
- d. Error exception followed by BC

Question 25

Complete

Marked out of
1.00

 Flag question

Given the following,

```
1. public class MyProgram {  
2.     public static void main(String args[]){  
3.         try {  
4.             System.out.print("Hello world ");  
5.         }  
6.         finally {  
7.             System.out.println("Finally executing ");  
8.         }  
9.     }  
10.}
```

What is the result?

- a. Nothing. The program will not compile because no catch clauses are specified.
- b. Nothing. The program will not compile because no exceptions are specified.
- c. Hello world.
- d. Hello world Finally executing

Question 26

Complete

Marked out of
1.00

 Flag question

What is the result of compiling and executing the below code ?

```
public class TryTest {  
    public static void main(String[] args)  
    {  
        try  
        {  
            return;  
        }  
        finally  
        {  
            System.out.println("Finally");  
        }  
    }  
}
```

- a. Runtime Error
- b. Finally
- c. Compilation Error
- d. Outputs nothing

Question 27

Complete

Marked out of
1.00

 Flag question

Which of these statement is true ?

- a. finally block gets executed only when there are exceptions.
- b. finally block gets executed only when there are no exceptions.
- c. finally block can be present only when a catch block is present.
- d. Finally gets always executed irrespective of the flow in try catch block.

Question 28

Complete

Marked out of
1.00

 Flag question

Given the following code:

```
import java.io.IOException;

public class ExceptionTest {
    public static void main(String[] args) {
        try {
            methodA();
        } catch (IOException e) {
            System.out.println("Caught IO Exception");
        } catch (Exception e) {
            System.out.println("Caught Exception");
        }
    }

    static public void methodA() {
        throw new IOException();
    }
}
```

What is the output ?

- a. Program executes normally without printing a message.
- b. The output is "Caught IO Exception".
- c. The output is "Caught Exception".
- d. Code will not compile.

Question 29

Complete

Marked out of
1.00

 Flag question

```
class A {  
    public static void main (String[] args) {  
        Object error = new Error();  
        Object runtimeException = new RuntimeException();  
        System.out.print((error instanceof Exception) + ",");  
        System.out.print(runtimeException instanceof Exception);  
    }  
}
```

What is the result of attempting to compile and run the program?

- a. Prints: true,true
- b. Prints: false,false
- c. Prints: false,true
- d. Prints: true,false

Question 30

Complete

Marked out of
1.00[Flag question](#)

Given the following:

```
1. System.out.print("Start ");
2. try {
3.     System.out.print("Hello world");
4.     throw new FileNotFoundException();
5. }
6. System.out.print(" Catch Here ");
7. catch(EOFException e) {
8.     System.out.print("End of file exception");
9. }
10. catch(FileNotFoundException e) {
11.     System.out.print("File not found");
12. }
```

and given that EOFException and FileNotFoundException are both subclasses of IOException, and further assuming this block of code is placed into a class, which statement is most true concerning this code?

- a. Code output: Start Hello world File Not Found.
- b. Code output: Start Hello world Catch Here File not found.
- c. The code will not compile.
- d. Code output: Start Hello world End of file exception.

Question 31

Complete

Marked out of
1.00

 Flag question

Which statement is true?

- a. A method declaring that it throws a certain exception class may throw instances of any subclass of that exception class.
- b. If an exception is uncaught in a method, the method will terminate and normal execution will resume.
- c. An overriding method must declare that it throws the same exception classes as the method it overrides.
- d. The main() method of a program cannot declare that it throws checked exceptions.

Question 32

Complete

Marked out of
1.00

 Flag question

If a try statement has catch blocks for both Exception and IOException, then which of the following statements is correct?

- a. The catch blocks for these two exception types can be declared in any order.
- b. The catch block for IOException must appear before the catch block for Exception.
- c. The catch block for Exception must appear before the catch block for IOException.
- d. A try statement cannot be declared with these two catch block types because they are incompatible.

Question 33

Complete

Marked out of
1.00

 Flag question

Given the following:

```
public class TestIfBoolean {  
    public static void main(String[] args) {  
        Boolean bFlag = null;  
        if (bFlag) {  
            System.out.print("A");  
        } else if (bFlag == false) {  
            System.out.print("B");  
        } else {  
            System.out.print("C");  
        }  
    }  
}
```

What is the expected output?

- a. C
- b. java.lang.NullPointerException is thrown at runtime
- c. B
- d. A

Question 34

Complete

Marked out of
1.00

 Flag question

Which statement is TRUE about catch{} blocks?

- a. The catch{} block for a child exception class must FOLLOW that of a parent exception class.
- b. A catch{} block need not be present even if there is no finally{} block.
- c. The catch{} block for a child exception class must PRECEDE that of a parent exception class.
- d. There can only be one catch{} block in a try/catch structure.

Question 35

Complete

Marked out of
1.00

 Flag question

Given the following code:

```
public class ArithmeticTest {  
    public static void main(String[] args){  
        try  
        {  
            int x=0;  
            int y=5/x;  
            System.out.println(y);  
        }  
        catch (Exception e)  
        {  
            System.out.println("Exception");  
        }  
        catch (ArithmaticException ae)  
        {  
            System.out.println("ArithmaticException");  
        }  
    }  
}
```

What is the output?

- a. Exception
- b. NaN
- c. Compilation Error
- d. ArithmaticException

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Status Finished

Started Wednesday, 16 October 2024, 4:56 PM

Completed Wednesday, 16 October 2024, 5:00 PM

Duration 3 mins 50 secs

Question 1

Correct

Marked out of 5.00

Write a Java program to create a method that takes an integer as a parameter and throws an exception if the number is odd.

Sample input and Output:

```
82 is even.  
Error: 37 is odd.
```

Fill the preloaded answer to get the expected output.

For example:

Result
82 is even. Error: 37 is odd.

Answer: (penalty regime: 0 %)

[Reset answer](#)

```
1 class OddNumberException extends Exception {  
2     public OddNumberException(String message) {  
3         super(message);  
4     }  
5 }  
6  
7 class prog {  
8     public static void checkEvenOdd(int num) throws OddNumberException {  
9         if (num % 2 != 0) {  
10             throw new OddNumberException("Error: " + num + " is odd.");  
11         } else {  
12             System.out.println(num + " is even.");  
13         }  
14     }  
15  
16     public static void main(String[] args) {  
17         try {  
18             checkEvenOdd(82);  
19             checkEvenOdd(37);  
20         } catch (OddNumberException e) {  
21             System.out.println(e.getMessage());  
22         }  
23     }  
24 }
```

	Expected	Got	
✓	82 is even. Error: 37 is odd.	82 is even. Error: 37 is odd.	✓

Passed all tests! ✓

Question 2

Correct

Marked out of 5.00

Write a Java program to handle `ArithmaticException` and `ArrayIndexOutOfBoundsException`.

Create an array, read the input from the user, and store it in the array.

Divide the 0th index element by the 1st index element and store it.

If the 1st element is zero, it will throw an exception.

If you try to access an element beyond the array limit throws an exception.

Input:

5

10 0 20 30 40

Output:**java.lang.ArithmaticException: / by zero****I am always executed**

Input:

3

10 20 30

Output

java.lang.ArrayIndexOutOfBoundsException: Index 3 out of bounds for length 3

I am always executed

For example:

Test	Input	Result
1	6 1 0 4 1 2 8	java.lang.ArithmaticException: / by zero I am always executed

Answer: (penalty regime: 0 %)

```

1 import java.util.Scanner;
2
3 public class ExceptionHandlingDemo {
4     public static void main(String[] args) {
5         Scanner scanner = new Scanner(System.in);
6
7         try {
8             int n = scanner.nextInt();
9             int[] arr = new int[n];
10
11         for (int i = 0; i < n; i++) {
12             arr[i] = scanner.nextInt();
13         }
14
15         int result = arr[0] / arr[1];
16
17         System.out.println(arr[3]); // This will cause ArrayIndexOutOfBoundsException if n < 4
18
19     } catch (ArithmaticException e) {
20         System.out.println("java.lang.ArithmaticException: " + e.getMessage());
21         return; // Exit the program after handling ArithmaticException
22     } catch (ArrayIndexOutOfBoundsException e) {
23         System.out.println("java.lang.ArrayIndexOutOfBoundsException: " + e.getMessage());
24         return; // Exit the program after handling ArrayIndexOutOfBoundsException
25     } finally {
26         System.out.println("I am always executed");
27     }
28
29     scanner.close();
30 }
31
32 }
```

	Test	Input	Expected	Got	
✓	1	6 1 0 4 1 2 8	java.lang.ArithmetricException: / by zero I am always executed	java.lang.ArithmetricException: / by zero I am always executed	✓
✓	2	3 10 20 30	java.lang.ArrayIndexOutOfBoundsException: Index 3 out of bounds for length 3 I am always executed	java.lang.ArrayIndexOutOfBoundsException: Index 3 out of bounds for length 3 I am always executed	✓

Passed all tests! ✓

Question 3

Correct

Marked out of 5.00

In the following program, an array of integer data is to be initialized.

During the initialization, if a user enters a value other than an integer, it will throw an InputMismatchException exception.

On the occurrence of such an exception, your program should print "You entered bad data."

If there is no such exception it will print the total sum of the array.

```
/* Define try-catch block to save user input in the array "name"
```

```
If there is an exception then catch the exception otherwise print the total sum of the array. */
```

Sample Input:

```
3  
5 2 1
```

Sample Output:

```
8
```

Sample Input:

```
2  
1 g
```

Sample Output:

```
You entered bad data.
```

For example:

Input	Result
3	8
5 2 1	
2	You entered bad data.
1 g	

Answer: (penalty regime: 0 %)

```
1 import java.util.InputMismatchException;  
2 import java.util.Scanner;  
3  
4 public class ArraySum {  
5     public static void main(String[] args) {  
6         Scanner scanner = new Scanner(System.in);  
7         int n;  
8  
9         try {  
10             n = scanner.nextInt();  
11             int[] arr = new int[n];  
12             int sum = 0;  
13  
14             for (int i = 0; i < n; i++) {  
15                 arr[i] = scanner.nextInt();  
16                 sum += arr[i];  
17             }  
18  
19             System.out.println(sum);  
20         } catch (InputMismatchException e) {  
21             System.out.println("You entered bad data.");  
22         } finally {  
23             scanner.close();  
24         }  
25     }  
26 }  
27
```

	Input	Expected	Got	
✓	3 5 2 1	8	8	✓
✓	2 1 g	You entered bad data.	You entered bad data.	✓

Passed all tests! ✓

[◀ Lab-09-MCQ](#)

Jump to...

[The “Nambiar Number” Generator ►](#)

Question 1

Complete

Marked out of
1.00[Flag question](#)

Which of these classes implements Set interface?

- a. HashSet
- b. LinkedList
- c. DynamicList
- d. ArrayList

Question 2

Complete

Marked out of
1.00[Flag question](#)

What will be the output of the following Java program?

```
1. import java.util.*;  
2. class Output  
3. {  
4.     public static void main(String args[]){  
5.         {  
6.             TreeSet t = new TreeSet();  
7.             t.add("3");  
8.             t.add("9");  
9.             t.add("1");  
10.            t.add("4");  
11.            t.add("8");  
12.            System.out.println(t);  
13.        }  
14.    }
```

- a. [3, 4, 1, 8, 9]
- b. [1, 3, 4, 8, 9]
- c. [1, 3, 5, 8, 9]
- d. [9, 8, 4, 3, 1]

Question 3

Complete

Marked out of
1.00[Flag question](#)

What is the output of this program?

```
import java.util.*;  
  
class Output  
{  
  
    public static void main(String args[])  
    {  
  
        ArrayList obj = new ArrayList();  
        obj.add("A");  
        obj.add(0, "B");  
        System.out.println(obj.size());  
    }  
}
```

- a. 0
- b. 1
- c. 3
- d. 2

Question 4

Complete

Marked out of
1.00[Flag question](#)

Which of this method is used to change an element in a LinkedList Object?

- a. set()
- b. change()
- c. redo()
- d. add()

Question 5

Complete

Marked out of
1.00

 Flag question

What is the difference between TreeSet and SortedSet?

- a. TreeSet is an interface; SortedSet is a concrete class
- b. SortedSet is more efficient than TreeSet
- c. SortedSet is an interface; TreeSet is a concrete class
- d. TreeSet is more efficient than SortedSet

Question 6

Complete

Marked out of
1.00

 Flag question

How to sort elements of ArrayList?

- a. listObj.sort();
- b. Collection.sort(listObj);
- c. Collections.sort(listObj);
- d. Sorter.sortAsc(listObj);

Question 7

Complete

Marked out of
1.00

 Flag question

What will be the output of the following Java program?

```
1. import java.util.*;
2. class ArrayList
3. {
4.     public static void main(String args[])
5.     {
6.         ArrayList obj = new ArrayList();
7.         obj.add("A");
8.         obj.add("B");
9.         obj.add("C");
10.        obj.add(1, "D");
11.        System.out.println(obj);
12.    }
13. }
```

- a. [A, D, C]
- b. [A, B, C, D]
- c. [A, D, B, C]
- d. [A, B, C]

Question 8

Complete

Marked out of
1.00[Flag question](#)

What is the functionality of the following piece of code? Select the most appropriate

```
public void function(int data)
{
    int flag = 0;
    if( head != null)
    {
        Node temp = head.getNext();
        while((temp != head) && (!(temp.getItem() == data)))
        {
            temp = temp.getNext();
            flag = 1;
            break;
        }
    }
    if(flag)
        System.out.println("success");
    else
        System.out.println("fail");
}
```

- a. Print success if a particular element is not found
- b. Print fail if a particular element is not found
- c. Print fail if the list is empty
- d. Print success if a particular element is equal to 1

Question 9

Complete

Marked out of
1.00[Flag question](#)

You need to store elements in a collection that guarantees that no duplicates are stored and all elements can be accessed in natural order. Which interface provides that capability?

- a. java.util.Set
- b. java.util.Collection
- c. java.util.Map
- d. java.util.List

Question 10

Complete

Marked out of
1.00[Flag question](#)

How can we remove an object from ArrayList?

- a. remove() method
- b. using Iterator
- c. remove() method and using Iterator
- d. delete() method

Question 11

Complete

Marked out of
1.00[Flag question](#)

What is the default clone of HashSet?

- a. Shallow clone
- b. Plain clone
- c. Deep clone
- d. Hollow clone

Question 12

Complete

Marked out of
1.00

Flag question

What will be the output of the following Java code snippet?

```
1. import java.util.*;
2. class Linkedlist
3. {
4.     public static void main(String args[])
5.     {
6.         LinkedList obj = new LinkedList();
7.         obj.add("A");
8.         obj.add("B");
9.         obj.add("C");
10.        obj.addFirst("D");
11.        System.out.println(obj);
12.    }
13. }
```

- a. [A, B, C, D]
- b. [D, B, C]
- c. [A, B, C]
- d. [D, A, B, C]

Question 13

Complete

Marked out of
1.00[Flag question](#)

Which of the following can be used as stack,queue,list?

- a. All of the mentioned
- b. LinkedHashMap
- c. LinkedHashSet
- d. LinkedList

Question 14

Complete

Marked out of
1.00[Flag question](#)

What will be the output of the program?

```
import java.util.*;
class I
{
    public static void main (String[] args)
    {
        Object i = new ArrayList().iterator();
        System.out.print((i instanceof List)+",");
        System.out.print((i instanceof Iterator)+",");
        System.out.print(i instanceof ListIterator);
    }
}
```

- a. Prints: false, false, false
- b. Prints: false, true, true
- c. Prints: false, false, true
- d. Prints: false, true, false

Question 15

Complete

Marked out of
1.00[Flag question](#)

Which of these method of ArrayList class is used to obtain present size of an object?

- a. length()
- b. index()
- c. capacity()
- d. size()

Question 16

Complete

Marked out of
1.00[Flag question](#)

How to create a TreeSet that stores values in descending order ?

- a. TreeSet<Integer> set = new TreeSet<>(Collection.orderReverse());
- b. TreeSet<Integer> set = new TreeSet<>().reverseCollection();
- c. TreeSet<Integer> set = new TreeSet<>(Collections.reverseOrder());
- d. TreeSet<Integer> set = new TreeSet<>().reverse();

Question 17

Complete

Marked out of
1.00[Flag question](#)

What differentiates a circular linked list from a normal linked list?

- a. Head node is known in circular linked list
- b. You may or may not have the 'next' pointer point to null in a circular linked list
- c. It is faster to traverse the circular linked list
- d. You cannot have the 'next' pointer point to null in a circular linked list

Question 18

Complete

Marked out of
1.00[Flag question](#)

Does Set permit null values?

- a. No
- b. Yes
- c. Only one
- d. throws error

Question 19

Complete

Marked out of
1.00[Flag question](#)

What will be the output of the following Java program?

```
1. import java.util.*;
2. class Linkedlist
3. {
4.     public static void main(String args[])
5.     {
6.         LinkedList obj = new LinkedList();
7.         obj.add("A");
8.         obj.add("B");
9.         obj.add("C");
10.        obj.removeFirst();
11.        System.out.println(obj);
12.    }
13. }
```

- a. [B, C]
- b. [A, B]
- c. [A, B, C, D]
- d. [A, B, C]

Question 20

Complete

Marked out of
1.00[Flag question](#)

Which of these method of HashSet class is used to add elements to its object?

- a. insert()
- b. addFirst()
- c. add()
- d. Add()

Question 21

Complete

Marked out of
1.00[Flag question](#)

You need to store elements in a collection that guarantees that no duplicates are stored and all elements can be accessed in natural order. Which interface provides that capability?

- a. java.util.Map
- b. java.util.Set
- c. java.util.List
- d. java.util.Collection

Question 22

Complete

Marked out of
1.00[Flag question](#)

Since Set interface in java closely resembles the mathematical set model, which of the following operations in mathematical set model can be implemented by the Set interface as well?

- a. intersection
- b. All of the mentioned
- c. difference
- d. Union

Question 23

Complete

Marked out of
1.00[Flag question](#)

Which collection class allows you to grow or shrink its size and provides indexed access to its elements, but whose methods are not synchronized?

- a. `java.util.LinkedHashSet`
- b. `java.util.HashSet`
- c. `java.util.List`
- d. `java.util.ArrayList`

Question 24

Complete

Marked out of
1.00[Flag question](#)

What will be the output of the following Java program?

```
1. import java.util.*;
2. class Output
3. {
4.     public static void main(String args[])
5.     {
6.         ArrayList obj = new ArrayList();
7.         obj.add("A");
8.         obj.add(0, "B");
9.         System.out.println(obj.size());
10.    }
11. }
```

- a. 2
- b. 1
- c. 0
- d. Any Garbage Value

Question 25

Complete

Marked out of
1.00

 Flag question

Which of these standard collection classes implements a linked list data structure?

- a. AbstractSet
- b. LinkedList
- c. HashSet
- d. AbstractList

Question 26

Complete

Marked out of
1.00

 Flag question

Which collection class allows you to grow or shrink its size and provides indexed access to its elements, but whose methods are not synchronized?

- a. java.util.List
- b. java.util.ArrayList
- c. java.util.HashSet
- d. java.util.LinkedHashSet

Question 27

Complete

Marked out of
1.00

 Flag question

What will be the output of the following Java program?

```
1. import java.util.*;
2. class Output
3. {
4.     public static void main(String args[])
5.     {
6.         ArrayList obj = new ArrayList();
7.         obj.add("A");
8.         obj.ensureCapacity(3);
9.         System.out.println(obj.size());
10.    }
11. }
```

- a. 1
- b. 3
- c. 4
- d. 2

Question 28

Complete

Marked out of
1.00

Flag question

What will be the output of the following Java program?

```
1. import java.util.*;
2. class Output
3. {
4.     public static void main(String args[])
5.     {
6.         HashSet obj = new HashSet();
7.         obj.add("A");
8.         obj.add("B");
9.         obj.add("C");
10.        System.out.println(obj + " " + obj.size());
11.    }
12. }
```

- a. ABC 3
- b. [A, B, C] 2
- c. [A, B, C] 3
- d. ABC 2

Question 29

Complete

Marked out of
1.00

 Flag question

What implementation of Iterator can traverse a collection in both directions?

- a. Iterator
- b. ListIterator
- c. SetIterator
- d. MapIterator

Question 30

Complete

Marked out of
1.00

 Flag question

What is the difference between length() and size() of ArrayList?

- a. length() is not defined in ArrayList
- b. length() returns the capacity of ArrayList and size() returns the actual number of elements stored in the list
- c. length() and size() return the same value
- d. size() is not defined in ArrayList

Question 31

Complete

Marked out of
1.00

Flag question

What will be the output of the following Java code snippet?

```
1. public class Test
2. {
3.     public static void main(String[] args)
4.     {
5.         Set s = new HashSet();
6.         s.add(new Long(10));
7.         s.add(new Integer(10));
8.         for(Object object : s)
9.         {
10.             System.out.println("test - "+object);
11.         }
12.     }
13. }
```

- a. Test – 10
- b. Runtime Exception
- c. Compilation Failure
- d. Test - 10

Test - 10

Question 32

Complete

Marked out of
1.00

Flag question

What are the initial capacity and load factor of HashSet?

- a. 32, 0.75
- b. 10, 1.0
- c. 16, 0.75
- d. 32, 1.0

Question 33

Complete

Marked out of
1.00[Flag question](#)

What is the unique feature of LinkedHashSet?

- a. It maintains the insertion order and guarantees uniqueness
- b. The elements in the collection are linked to each other
- c. It provides a way to store key values with uniqueness
- d. It is not a valid class

Question 34

Complete

Marked out of
1.00[Flag question](#)

Which of these methods can be used to delete the last element in a LinkedList object?

- a. deleteLast()
- b. remove()
- c. removeLast()
- d. delete()

Question 35

Complete

Marked out of
1.00[Flag question](#)

How to remove duplicates from List?

- a. HashSet<String> listToSet = duplicateList.getSet();
- b. HashSet<String> listToSet = new HashSet<String>(duplicateList);
- c. HashSet<String> listToSet = duplicateList.toSet();
- d. HashSet<String> listToSet = Collections.convertToSet(duplicateList);

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Status Finished

Started Sunday, 10 November 2024, 2:36 PM

Completed Sunday, 10 November 2024, 2:39 PM

Duration 2 mins 28 secs

Question 1

Correct

Marked out of 1.00

Given an ArrayList, the task is to get the first and last element of the ArrayList in Java.

```
Input: ArrayList = [1, 2, 3, 4]
Output: First = 1, Last = 4
```

```
Input: ArrayList = [12, 23, 34, 45, 57, 67, 89]
Output: First = 12, Last = 89
```

Approach:

1. Get the ArrayList with elements.
2. Get the first element of ArrayList using the get(index) method by passing index = 0.
3. Get the last element of ArrayList using the get(index) method by passing index = size - 1.

Answer: (penalty regime: 0 %)

```
1 import java.util.ArrayList;
2 import java.util.Scanner;
3
4 public class FirstLastElementUserInput {
5     public static void main(String[] args) {
6         Scanner scanner = new Scanner(System.in);
7         ArrayList<Integer> arrayList = new ArrayList<>();
8         int n = scanner.nextInt();
9         for (int i = 0; i < n; i++) {
10             int element = scanner.nextInt();
11             arrayList.add(element);
12         }
13         System.out.print("ArrayList: [");
14         for(int i=0;i<n-1;i++)
15         {
16             System.out.print(arrayList.get(i)+", ");
17         }
18         System.out.println(arrayList.get(n-1)+"]");
19
20
21         if (arrayList.size() > 0) {
22             int firstElement = arrayList.get(0);
23             int lastElement = arrayList.get(arrayList.size() - 1);
24             System.out.println("First : " + firstElement + ", Last : " + lastElement);
25         } else {
26             System.out.println("The ArrayList is empty.");
27         }
28
29         scanner.close();
30     }
31 }
32 }
```

	Test	Input	Expected	Got	
✓	1	6 30 20 40 50 10 80	ArrayList: [30, 20, 40, 50, 10, 80] First : 30, Last : 80	ArrayList: [30, 20, 40, 50, 10, 80] First : 30, Last : 80	✓
✓	2	4 5 15 25 35	ArrayList: [5, 15, 25, 35] First : 5, Last : 35	ArrayList: [5, 15, 25, 35] First : 5, Last : 35	✓

Passed all tests! ✓

Question 2

Correct

Marked out of 1.00

The given Java program is based on the ArrayList methods and its usage. The Java program is partially filled. Your task is to fill in the incomplete statements to get the desired output.

```
list.set();
list.indexOf();
list.lastIndexOf()
list.contains()
list.size();
list.add();
list.remove();
```

The above methods are used for the below Java program.

Answer: (penalty regime: 0 %)

[Reset answer](#)

```
1 import java.util.ArrayList;
2 import java.util.Scanner;
3
4 class prog {
5
6     public static void main(String[] args)
7     {
8         Scanner sc= new Scanner(System.in);
9         int n = sc.nextInt();
10
11        ArrayList<Integer> list = new ArrayList<Integer>();
12
13        for(int i = 0; i<n;i++)
14            list.add(sc.nextInt());
15
16        // printing initial value ArrayList
17        System.out.println("ArrayList: " + list);
18
19        //Replacing the element at index 1 with 100
20        list.set(1,100);
21
22        //Getting the index of first occurrence of 100
23        System.out.println("Index of 100 = "+list.indexOf(100));
24
25        //Getting the index of last occurrence of 100
26        System.out.println("LastIndex of 100 = "+list.lastIndexOf(100));
27        // Check whether 200 is in the list or not
28        System.out.println(list.contains(200)); //Output : false
29        // Print ArrayList size
30        System.out.println("Size Of ArrayList = "+list.size());
31        //Inserting 500 at index 1
32        list.add(1,500); // code here
33        //Removing an element from position 3
34        list.remove(3); // code here
35        System.out.print("ArrayList: " + list);
36    }
37 }
```

	Test	Input	Expected	Got	
✓	1	5 1 2 3 100 5	ArrayList: [1, 2, 3, 100, 5] Index of 100 = 1 LastIndex of 100 = 3 false Size Of ArrayList = 5 ArrayList: [1, 500, 100, 100, 5]	ArrayList: [1, 2, 3, 100, 5] Index of 100 = 1 LastIndex of 100 = 3 false Size Of ArrayList = 5 ArrayList: [1, 500, 100, 100, 5]	✓

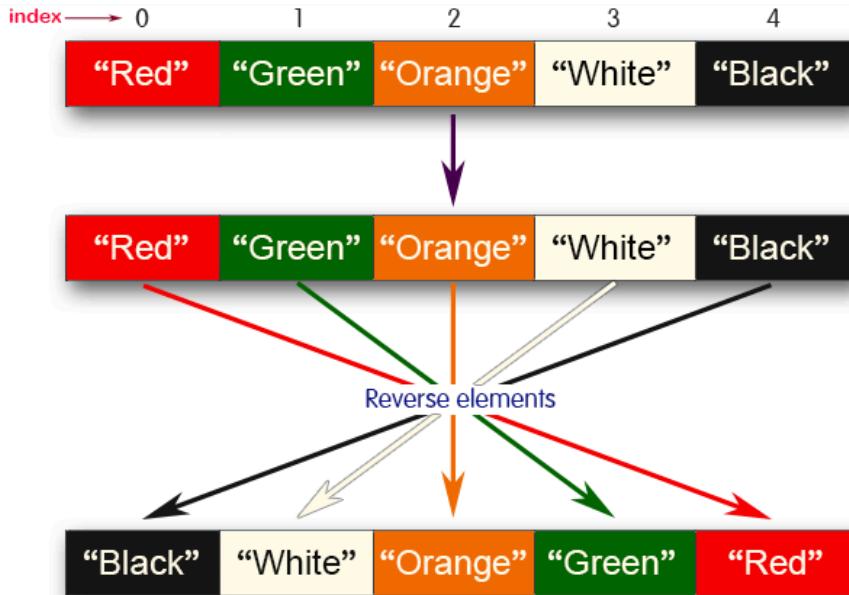
Passed all tests! ✓

Question 3

Correct

Marked out of 1.00

Write a Java program to reverse elements in an array list.



Sample input and Output:

Red
Green
Orange
White
Black

Sample output

List before reversing :
[Red, Green, Orange, White, Black]
List after reversing :
[Black, White, Orange, Green, Red]

Answer: (penalty regime: 0 %)

```

1 import java.util.ArrayList;
2 import java.util.Collections;
3 import java.util.Scanner;
4
5 public class ReverseStringArrayList {
6     public static void main(String[] args) {
7         Scanner scanner = new Scanner(System.in);
8         ArrayList<String> arrayList = new ArrayList<>();
9         int n = scanner.nextInt();
10        scanner.nextLine();
11        for (int i = 0; i < n; i++) {
12            String element = scanner.nextLine();
13            arrayList.add(element);
14        }
15        System.out.println("List before reversing :");
16        System.out.println(arrayList);
17        Collections.reverse(arrayList);
18        System.out.println("List after reversing :");
19        System.out.println(arrayList);
20
21        scanner.close();
22    }
23}

```

	Test	Input	Expected	Got	
✓	1	5 Red Green Orange White Black	List before reversing : [Red, Green, Orange, White, Black] List after reversing : [Black, White, Orange, Green, Red]	List before reversing : [Red, Green, Orange, White, Black] List after reversing : [Black, White, Orange, Green, Red]	✓
✓	2	4 CSE AIML AIDS CYBER	List before reversing : [CSE, AIML, AIDS, CYBER] List after reversing : [CYBER, AIDS, AIML, CSE]	List before reversing : [CSE, AIML, AIDS, CYBER] List after reversing : [CYBER, AIDS, AIML, CSE]	✓

Passed all tests! ✓

◀ Lab-10-MCQ

Jump to...

Lab-11-MCQ ►

WEEK 11

Lab 11-MCQ Attempt review | REC-CIS - Google Chrome
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REC-CIS

13 14 15 16 17 18
19 20 21 22 23 24
25 26 27 28 29 30
31 32 33 34 35

Show one page at a time

Finish review

Question 1
Complete
Marked out of 1.00
Flag question

Which of these method is used to remove all keys/values pair from the invoking map?

a. removeAll()
 b. delete()
 c. remove()
 d. clear()

Question 2
Complete
Marked out of 1.00
Flag question

What will the output for the following code snippet?

```
HashMap map1 = new HashMap();
HashMap map2 = new HashMap();
map1.put(1, "E-BOX");
map1.put(2, "Learning and Assessment");
map1.put(3, "Platform");
map2.putAll(map1);
System.out.println(map2);
```

a. 1,2,3
 b. {}
 c. {1=E-BOX, 2=Learning and Assessment, 3=Platform}
 d. CompileTimeError

REC-CIS

Question 3
Complete
Marked out of 1.00
Flag question

Is hashmap an ordered collection.

a. False
 b. True

Question 4
Complete
Marked out of 1.00
Flag question

Which interface does java.util.Hashtable implement?

a. Java.util.Collection
 b. Java.util.HashTable
 c. Java.util.Map
 d. Java.util.List

Question 5
Complete
Marked out of 1.00
Flag question

What is the result of attempting to compile and run the following code?

```
import java.util.TreeSet;
public class Test {

    public static void main(String[] args){
        Integer a = new Integer(4);
        Integer b = new Integer(8);
        Integer c = new Integer(4);
    }
}
```

Question 6

Complete

Marked out of
1.00[Flag question](#)

What is the output of this program?

```
import java.util.*;  
  
class Maps {  
    public static void main(String args[]) {  
        HashMap obj = new HashMap();  
        obj.put("A", new Integer(1));  
        obj.put("B", new Integer(2));  
        obj.put("C", new Integer(3));  
        System.out.println(obj);  
    }  
}
```

- a. {A, B, C}
- b. {A-1, B-1, C-1}
- c. {A=1, B=2, C=3}
- d. {A 1, B 1, C 1}

Question 7

Complete

Marked out of
1.00

Which of these method Map class is used to obtain an element in the map having specified key?

- a. look()
- b. search()

Question 8

Complete

Marked out of
1.00[Flag question](#)

Given:

```
public static void before() {  
    Set set = new TreeSet();  
    set.add("2");  
    set.add(3);  
    set.add("1");  
    Iterator it = set.iterator();  
    while (it.hasNext())  
        System.out.print(it.next() + " ");  
}
```

Which of the following statements are true?

- a. The before() method will print 1 2
- b. The before() method will print three numbers, but the order cannot be determined
- c. The before() method will not compile
- d. The before() method will print 1 2 3
- e. The before() method will throw an exception at runtime

Question 9
Complete
Marked out of 1.00
[Flag question](#)

Which of these classes provide implementation of map interface?

- a. HashMap
- b. LinkedList
- c. ArrayList
- d. DynamicList

Question 10
Complete
Marked out of 1.00
[Flag question](#)

What will be the output of the following?

```
import java.util.Iterator;
import java.util.TreeSet;
```

```
public class Test {
    public static void main(String[] args) {
        TreeSet map = new TreeSet();
        map.add("one");
        map.add("two");
        map.add("three");
        map.add("four");
        map.add("one");
        Iterator it = map.iterator();
        while(it.hasNext()) {
```

Question 11
Complete
Marked out of 1.00
[Flag question](#)

Which of these methods can be used to obtain set of all keys in a map?

- a. getAll()
- b. keySet()
- c. keyall()
- d. getKeys()

Question 12
Complete
Marked out of 1.00
[Flag question](#)

Which interface does java.util.Hashtable implement?

- a. java.util.Map
- b. java.util.Collection
- c. java.util.HashTable
- d. java.util.List

Question 13
Complete
Marked out of 1.00
[Flag question](#)

Which of these method is used add an element and corresponding key to a map?

- a. add()
- b. set()
- c. redo()
- d. put()

Question 14
Complete
Marked out of 1.00
[Flag question](#)

Which code will sort the keys of props hashmap?

```
HashMap props=new HashMap();
props.put("Key45","value45");
props.put("Key24","value24");
props.put("Key33","value33");
Set s=props.keySet();
//Insert code here
```

- a. Array.sort(s)
- b. Collections.sort(s);
- c. s=new TreeSet(s)
- d. s=new SortedSet(s);

Question **15**
Complete
Marked out of
1.00
[Flag question](#)

Map implements collection interface?

- a. True
- b. False

Question **16**
Complete
Marked out of
1.00
[Flag question](#)

Select one or more true statements:

- A. Set does not store duplicate values
- B. All Set implementations are sorted.
- C. HashMap and Hashtable both store key value pairs, Hashtable we would use in case of synchronization requirements.
- D. List implementations dynamically grow in size, allow duplicates and are not sorted

- a. A, C, D
- b. only C
- c. only B
- d. Both A and D

Question **17**
Complete
Marked out of
1.00
[Flag question](#)

Which of these methods can be used to obtain set of all keys in a map?

- a. getKey()

Question **17**
Complete
Marked out of
1.00
[Flag question](#)

Which of these methods can be used to obtain set of all keys in a map?

- a. getKey()
- b. keyall()
- c. keySet()
- d. getAll()

Question **18**
Complete
Marked out of
1.00
[Flag question](#)

Which collection class allows you to associate its elements with key values, and allows you to retrieve objects in FIFO (first-in, first-out) sequence?

- a. java.util.TreeMap
- b. java.util.LinkedHashMap
- c. java.util.ArrayList
- d. java.util.HashMap

Question **19**
Complete
Marked out of
1.00
[Flag question](#)

Which of the following method is used to remove all key/value pair map?

- a. remove()
- b. deleteAll()
- c. removeAll()

Question 20

Complete

Marked out of
1.00[Flag question](#)

What will be the output of the following Java code snippet?

1. public class Demo
 2. {
 3. public static void main(String[] args)
 4. {
 5. Map<Integer, Object> sampleMap = new TreeMap<Integer, Object>();
 6. sampleMap.put(1, null);
 7. sampleMap.put(5, null);
 8. sampleMap.put(3, null);
 9. sampleMap.put(2, null);
 10. sampleMap.put(4, null);
 - 11.
 12. System.out.println(sampleMap);
 13. }
 14. }
-
- a. Exception is thrown
 - b. {5=null}
 - c. {1=null, 5=null, 3=null, 2=null, 4=null}
 - d. {1=null, 2=null, 3=null, 4=null, 5=null}

Lab-11-MCQ: Attempt review | REC-CIS - Google Chrome

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Question 21
Complete
Marked out of 1.00
[Flag question](#)

Which of these method is used add an element and corresponding key to a map?

- a. redo()
- b. add()
- c. put()
- d. set()

Question 22
Complete
Marked out of 1.00
[Flag question](#)

What will be the output of the following Java program?

1. import java.util.*;
2. class Maps
3. {
4. public static void main(String args[])
5. {
6. TreeMap obj = new TreeMap();
7. obj.put("A", new Integer(1));
8. obj.put("B", new Integer(2));
9. obj.put("C", new Integer(3));
10. System.out.println(obj.entrySet());
11. }
12. }

- a. [A, B, C]
- b. {A=1, B=2, C=3}
- c. [A=1, B=2, C=3]
- d. [1, 2, 3]

Question 23

Complete

Marked out of
1.00[Flag question](#)

What happens if we put a key object in a HashMap which exists?

- a. The old object is removed from the map
- b. It throws an exception as the key already exists in the map
- c. The new object is discarded
- d. The new object replaces the older object

Question 24

Complete

Marked out of
1.00[Flag question](#)

Which interface provides the capability to store objects using a key-value pair?

- a. Java.util.Map
- b. Java.util.List
- c. Java.util.Set
- d. Java.util.Collection

Question 25

Complete

Marked out of
1.00[Flag question](#)

What will be the output of the following Java program?

```

1. import java.util.*;
2. class Maps
3. {
4.     public static void main(String args[])
5.     {
6.         HashMap obj = new HashMap();
7.         obj.put("A", new Integer(1));
8.         obj.put("B", new Integer(2));
9.         obj.put("C", new Integer(3));
10.        System.out.println(obj);
11.    }
12. }
```

- a. {A, B, C}
- b. {A=1, B=2, C=3}
- c. [A 1, B 1, C 1]
- d. {A-1, B-1, C-1}

Question 26

Complete

Marked out of
1.00[Flag question](#)

Given:

```

TreeSet map = new TreeSet();
map.add("one");
map.add("two");
map.add("three");
map.add("four");
map.add("one");
Iterator it = map.iterator();
while (it.hasNext() ) {
System.out.print( it.next() + " " );
}
```

What is the result?

- a. four one three two
- b. An exception is thrown at runtime.
- c. four three two one
- d. one two three four one
- e. one two three four

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Question 27
Complete
Marked out of 1.00
[Flag question](#)

Suppose that you would like to create an instance of a new Map that has an iteration order that is the same as the iteration order of an existing instance of a Map. Which concrete implementation of the Map interface should be used for the new instance?

- a. TreeMap
- b. LinkedHashMap
- c. The answer depends on the implementation of the existing instance.
- d. HashMap

Question 28
Complete
Marked out of 1.00
[Flag question](#)

Which of the following maintains no ordering and contains unique elements?

- a. TreeMap
- b. LinkedHashMap
- c. HashMap
- d. All of the mentioned

Question 29
Complete
Marked out of 1.00
[Flag question](#)

Which of the following are false about Collections and Collection?

- a. Collection is an interface to Set and List
- b. Collections is a special type of collection which holds Set of collections
- c. Collections is a Utility class
- d. Both Collections and Collection entity belongs to java.util package

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Question 30
Complete
Marked out of 1.00
[Flag question](#)

Which of the below does not implement Map interface?

- a. Hashtable
- b. EnumMap
- c. Vector
- d. HashMap

Question 31
Complete
Marked out of 1.00
[Flag question](#)

Which of these method Map class is used to obtain an element in the map having specified key?

- a. search()
- b. look()
- c. set()
- d. get()

Question 32
Complete
Marked out of 1.00
[Flag question](#)

What will be the output of the following Java program?

```
1. import java.util.*;
2. class Maps
3. {
4.     public static void main(String args[])
5.     {
6.         
```

```
6.             Map obj = new HashMap();
7.             obj.put("A", new Integer(1));
8.             obj.put("B", new Integer(2));
9.             obj.put("C", new Integer(3));
10.            System.out.println(obj.get("B"));
11.        }
12.    }
```

- a. 2
- b. null
- c. 3
- d. 1

Question 33
Complete
Marked out of 1.00
[Flag question](#)

While finding the correct location for saving key value pair, how many times the key is hashed?

- a. unlimited till bucket is found
- b. 1
- c. 3
- d. 2

Question 34

Question **34**
Complete
Marked out of
1.00
[Flag question](#)

Which of these object stores association between keys and values?

- a. Hash table
- b. String
- c. Array
- d. Map

Question **35**
Complete
Marked out of
1.00
[Flag question](#)

What will be the output of the following Java program?

```
1. import java.util.*;
2. class Maps
3. {
4.     public static void main(String args[])
5.     {
6.         HashMap obj = new HashMap();
7.         obj.put("A", new Integer(1));
8.         obj.put("B", new Integer(2));
9.         obj.put("C", new Integer(3));
10.        System.out.println(obj.keySet());
11.    }
12. }
```

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Status	Finished
Started	Sunday, 10 November 2024, 2:40 PM
Completed	Sunday, 10 November 2024, 2:46 PM
Duration	6 mins 5 secs

Question 1

Correct

Marked out of 1.00

Java HashSet class implements the Set interface, backed by a hash table which is actually a [HashMap](#) instance.

No guarantee is made as to the iteration order of the hash sets which means that the class does not guarantee the constant order of elements over time.

This class permits the null element.

The class also offers constant time performance for the basic operations like add, remove, contains, and size assuming the hash function disperses the elements properly among the buckets.

Java HashSet Features

A few important features of HashSet are mentioned below:

- Implements [Set Interface](#).
- The underlying data structure for HashSet is [Hashtable](#).
- As it implements the Set Interface, duplicate values are not allowed.
- Objects that you insert in HashSet are not guaranteed to be inserted in the same order. Objects are inserted based on their hash code.
- NULL elements are allowed in HashSet.
- HashSet also implements **Serializable** and **Cloneable** interfaces.

• `public class HashSet<E> extends AbstractSet<E> implements Set<E>, Cloneable, Serializable`

Sample Input and Output:

5

90

45

78

25

78

Sample Output:

78 was found in the set.

Sample Input and output:

3

2

7

9

5

Sample Input and output:

5 was not found in the set.

Answer: (penalty regime: 0 %)

Reset answer

```

1 import java.util.HashSet;
2 import java.util.Scanner;
3
4 public class Prog {
5     public static void main(String[] args) {
6         Scanner sc = new Scanner(System.in);
7
8         // Read the number of integers to be added to the set
9         int n = sc.nextInt();
10
11        // Create a HashSet object called 'numbers'
12        HashSet<Integer> numbers = new HashSet<>();
13
14        // Add values to the set
15        for (int i = 0; i < n; i++) {
16            numbers.add(sc.nextInt());
17        }
18
19        // Read the search key
20        int skey = sc.nextInt();
21
22        // Check if the skey is present in the set
23        if (numbers.contains(skey)) {
24            System.out.println(skey + " was found in the set.");
25        } else {
26            System.out.println(skey + " was not found in the set.");
27        }
28

```

```
29     sc.close(); // Close the scanner  
30 }  
31 }
```

	Test	Input	Expected	Got	
✓	1	5 90 56 45 78 25 78	78 was found in the set.	78 was found in the set.	✓
✓	2	3 -1 2 4 5	5 was not found in the set.	5 was not found in the set.	✓

Passed all tests! ✓

/

Question 2

Correct

Marked out of 1.00

Write a Java program to compare two sets and retain elements that are the same.

Sample Input and Output:

```
5
Football
Hockey
Cricket
Volleyball
Basketball
7 // HashSet 2:
```

```
Golf
Cricket
Badminton
Football
Hockey
Volleyball
Handball
```

SAMPLE OUTPUT:

```
Football
Hockey
Cricket
Volleyball
Basketball
```

Answer: (penalty regime: 0 %)

```
1 import java.util.HashSet;
2 import java.util.Scanner;
3
4 public class CompareSets {
5     public static void main(String[] args) {
6         Scanner sc = new Scanner(System.in);
7
8         // Input size for the first set
9         int n1 = sc.nextInt();
10        sc.nextLine(); // Consume the newline character
11
12        // Create the first set
13        HashSet<String> set1 = new HashSet<>();
14
15        // Input elements for the first set
16        for (int i = 0; i < n1; i++) {
17            set1.add(sc.nextLine());
18        }
19
20        // Input size for the second set
21        int n2 = sc.nextInt();
22        sc.nextLine(); // Consume the newline character
23
24        // Create the second set
25        HashSet<String> set2 = new HashSet<>();
26
27        // Input elements for the second set
28        for (int i = 0; i < n2; i++) {
29            set2.add(sc.nextLine());
30        }
31
32        // Retain common elements between the two sets
33        set1.retainAll(set2);
34
35        // Print the common elements
36        for (String element : set1) {
37            System.out.println(element);
38        }
39    }
40}
```

```
30    }  
31    System.out.println(element);  
32}  
33  
34    sc.close(); // Close the scanner  
35}  
36}  
37}
```

	Test	Input	Expected	Got	
✓	1	5 Football Hockey Cricket Volleyball Basketball 7 Golf Cricket Badminton Football Hockey Volleyball Throwball	Cricket Hockey Volleyball Football	Cricket Hockey Volleyball Football	✓
✓	2	4 Toy Bus Car Auto 3 Car Bus Lorry	Bus Car	Bus Car	✓

Passed all tests! ✓

//

Question 3

Correct

Marked out of 1.00

Java HashMap Methods

[containsKey\(\)](#). Indicate if an entry with the specified key exists in the map[containsValue\(\)](#). Indicate if an entry with the specified value exists in the map[putIfAbsent\(\)](#). Write an entry into the map but only if an entry with the same key does not already exist[remove\(\)](#). Remove an entry from the map[replace\(\)](#) [Write to an entry in the map only if it exists](#)[size\(\)](#). Return the number of entries in the map

Your task is to fill the incomplete code to get desired output

Answer: (penalty regime: 0 %)[Reset answer](#)

```

1 import java.util.HashMap;
2 import java.util.Map.Entry;
3 import java.util.Set;
4 import java.util.Scanner;
5
6 public class Prog {
7     public static void main(String[] args) {
8         // Creating HashMap with default initial capacity and load factor
9         HashMap<String, Integer> map = new HashMap<String, Integer>();
10
11     String name;
12     int num;
13     Scanner sc = new Scanner(System.in);
14
15     // Reading number of entries for the map
16     int n = sc.nextInt();
17
18     // Reading key-value pairs and adding them to the map
19     for (int i = 0; i < n; i++) {
20         name = sc.next();
21         num = sc.nextInt();
22         map.put(name, num);
23     }
24
25     // Printing the key-value pairs from the map
26     Set<Entry<String, Integer>> entrySet = map.entrySet();
27     for (Entry<String, Integer> entry : entrySet) {
28         System.out.println(entry.getKey() + " : " + entry.getValue());
29     }
30     System.out.println("-----");
31
32     // Creating another HashMap
33     HashMap<String, Integer> anotherMap = new HashMap<String, Integer>();
34
35     // Inserting key-value pairs into anotherMap
36     anotherMap.put("SIX", 6);
37     anotherMap.put("SEVEN", 7);
38
39     // Inserting key-value pairs of map to anotherMap using putAll() method
40     anotherMap.putAll(map); // This copies all entries from 'map' to 'anotherMap'
41
42     // Printing the key-value pairs of anotherMap
43     entrySet = anotherMap.entrySet();
44     for (Entry<String, Integer> entry : entrySet) {
45         System.out.println(entry.getKey() + " : " + entry.getValue());
46     }
47
48     // Adds key-value pair 'FIVE-5' only if it is not present in map
49     map.putIfAbsent("FIVE", 5);
50
51     // Retrieving a value associated with key 'TWO'
52     Integer value = map.get("TWO");

```

	Test	Input	Expected	Got	
✓	1	3 ONE 1 TWO ----- 2 THREE 3	ONE : 1 TWO : 2 THREE : 3 SIX : 6 ONE : 1 TWO : 2 SEVEN : 7 THREE : 3 2 true true 4	ONE : 1 TWO : 2 THREE : 3 SIX : 6 ONE : 1 TWO : 2 SEVEN : 7 THREE : 3 2 true true 4	✓

Passed all tests! ✓

◀ Lab-11-MCQ

Jump to...

TreeSet example ►

WEEK 12

REC-CIS

CS23333-Object Oriented Programming Using Java-2023

Quiz navigation

1	2	3	4	5	6
7	8	9	10	11	12
13	14	15	16	17	18
19	20	21	22	23	24
25	26	27	28	29	30
31	32	33	34	35	

Show one page at a time

[Finish review](#)

Status: Finished
Started: Tuesday, 19 November 2024, 2:52 PM
Completed: Tuesday, 19 November 2024, 3:02 PM
Duration: 9 mins 29 secs

Given the following,

```
public class BoolTest {  
    public static void main(String[] args) {  
        Boolean b1 = new Boolean("false");  
        boolean b2;  
        b2 = b1.booleanValue();  
        if (!b2) {  
            b2 = true;  
            System.out.print("x ");  
        }  
        if (b1 & b2) {  
            System.out.print("y ");  
        }  
    }  
}
```

REC-CIS

Question 1
Complete
Marked out of 1.00
[Flag question](#)

A program uses the `FileWriter` constructor with the string "newFile.txt". What happens if "newFile.txt" already exists?

- a. The constructor returns null.
- b. The existing file is erased and replaced with a new, empty one.
- c. The program exits.
- d. An exception is thrown.

Question 2
Complete
Marked out of 1.00
[Flag question](#)

What happens when the constructor for `FileInputStream` fails to open a file for reading?

- a. It returns null.
- b. It throws a `ArrayIndexOutOfBoundsException`.
- c. It throws a `FormatException`.
- d. It throws a `FileNotFoundException`.

Question 3
Complete
Marked out of 1.00
[Flag question](#)

What happens if `readLine()` encounters an error?

- a. It returns null.
- b. Nothing; the program must examine the returned value to see if it makes sense.
- c. It throws an `IOException`.
- d. The program immediately halts.

Question 5
Complete
Marked out of 1.00
[Flag question](#)

The input/output package usually used with Java is:

- a. java.inout
- b. java.io
- c. java.io
- d. java.input

Question 6
Complete
Marked out of 1.00
[Flag question](#)

Given the following code:

```
public class Test {
    public static void main(String[] args) {
        System.out.println(args.length);
    }
}
```

If the above code is compiled and run as follows

java Test Hello 1 2 3

What would be the output?

- a. 2
- b. 4
- c. 5

Question 7
Complete
Marked out of 1.00
[Flag question](#)

Can data flow through a given stream in both directions?

- a. No; streams only work for output.
- b. Yes; only one stream is needed to read and write a file.
- c. Yes; but only one direction at a time.
- d. No; a stream has one direction only, input or output.

Question 8
Complete
Marked out of 1.00
[Flag question](#)

Given the following,

```
1. public class WrapTest3 {
2.     public static void main(String [] args) {
3.         String s = "98.6";
4.         // insert code here
5.     }
6. }
```

Which line inserted at line 4 will cause compiler errors?

- a. float f6 = (float) Double.parseDouble("3.14");
- b. float f3 = new Float(3.14f).floatValue();

- a. float f6 = (float) Double.parseDouble("3.14");
 b. float f3 = new Float(3.14f).floatValue();
 c. float f4 = Float.parseFloat(1.23f);
 d. float f5 = Float.valueOf(s).floatValue();

Question **9**
 Complete
 Marked out of
 1.00
[Flag question](#)

Given the following,

```
public class NFE {  

  public static void main(String[] args) {  

    String s = "42";  

    try {  

      s = s.concat(".5");  

      double d = Double.parseDouble(s);  

      s = Double.toString(d);  

      int x = (int) Math.ceil(Double.valueOf(s).doubleValue());  

      System.out.println(x);  

    } catch (NumberFormatException e) {  

      System.out.println("bad number");  

    }  

  }  

}
```

What is the result?

- a. 43
 b. 42
 c. bad number
 d. 42.5
 e. Compilation fails.

Question **10**
 Complete
 Marked out of
 1.00
[Flag question](#)

What will be the output of the following Java program?

```
1. class Output  

2. {  

3.   public static void main(String args[])  

4.   {  

5.     Long i = new Long(256);  

6.     System.out.print(i.hashCode());  

7.   }  

8. }
```

- a. 256
 b. 256

Question **11**
Complete
Marked out of 1.00
[Flag question](#)

Which one of the following options correctly reads a line of string from the console?

- a. BufferedReader br =new BufferedReader(new InputStreamReader(System.in));
String str = br.readLine();
- b. String str = System.in.readLine();
String str; System.in.scannf(str);
- c. BufferedReader br = new BufferedReader(System.in);
String str = br.readLine();
- d. InputStreamReader isr = new InputStreamReader (new BufferedReader(System.in));
String str = isr.readLine();

Question **12**
Complete
Marked out of 1.00
[Flag question](#)

Given the below mentioned code

and the command-line invocation as,
java CommandArgsTwo 1 2 3
public class CommandArgsTwo {
public static void main(String[] args) {
String[] args;
int x;
x = args.length;
for (int y = 1; y <= x; y++) {
System.out.print(" " + args[y]);
}

Question **13**
Complete
Marked out of 1.00
[Flag question](#)

What will be the output of the following Java program?

```
1. class Output
2. {
3.     public static void main(String args[])
4.     {
5.         Double i = new Double(257.578123456789);
6.         float x = i.floatValue();
7.         System.out.print(x);
8.     }
9. }
```

- a. 257.57812
- b. 0
- c. 257.5781235
- d. 257

d. 257**Question 14**Complete
Marked out of
1.00[Flag question](#)

Given the below mentioned code and the command-line invocation as,
java CommandArgsFour 9 6 3

```
public class CommandArgsFour {  
    public static void main(String[] args) {  
        String[] args;  
        int a;  
        a = args.length;  
        for (int b = 1; b < a; b++) {  
            System.out.print(" " + args[b]);  
        }  
    }  
}
```

What is the result?

- a. An exception is thrown at runtime
- b. 6 3
- c. 9 6
- d. null null

Question 15[View question details](#) [Edit question](#) [Delete question](#)**Question 15**Complete
Marked out of
1.00[Flag question](#)

Which of these is a wrapper for simple data type char?

- a. Character
- b. String
- c. Integer
- d. Float

Question 16Complete
Marked out of
1.00[Flag question](#)

What will be the output of the following Java program?

```
1. class Output  
2. {  
3.     public static void main(String args[])  
4.     {  
5.         Integer i = new Integer(257);  
6.         float x = i.floatValue();  
7.         System.out.print(x);  
8.     }  
9. }
```

- a. 0
- b. 257

Question 18
Complete
Marked out of 1.00
[Flag question](#)

What will be the output of the following Java program?

```

1. class Output
2. {
3.     public static void main(String args[])
4.     {
5.         Integer i = new Integer(257);
6.         byte x = i.byteValue();
7.         System.out.print(x);
8.     }
9. }
```

a. 0
 b. 257
 c. 256
 d. 1

Question 19
Complete
Marked out of 1.00
[Flag question](#)

Which of the following opens the file "myData.stuff" for Input?

a. FileInputStream fis = new FileInputStream("myData.stuff", true)
 b. DataInputStream dis = new DataInputStream("myData.stuff")
 c. FileInputStream fis = new FileInputStream("myData.stuff")

Question 20
Complete
Marked out of 1.00
[Flag question](#)

What will be the output of the following Java program?

```

1. class Output
2. {
3.     public static void main(String args[])
4.     {
5.         char a = (char) 98;
6.         a = Character.toUpperCase(a);
7.         System.out.print(a);
8.     }
9. }
```

a. b
 b. B
 c. C
 d. c

Question 21
Complete
Marked out of 1.00
[Flag question](#)

Which of these is a super class of Character wrapper?

a. Long
 b. Digits
 c. Number
 d. Float

Question 22
Complete
Marked out of 1.00
[Flag question](#)

Given the following,

```

1. public class WrapTest3 {
2.     public static void main(String [] args) {
3.         String s = "98.6";
4.         // insert code here
5.     }
6. }
```

Which line inserted at line 4 will cause compiler errors?

a. float f6 = (float) Double.parseDouble("3.14");
 b. float f5 = Float.valueOf(s).floatValue();

Question 23
Complete
Marked out of 1.00
[Flag question](#)

Given the following,

```
1. public class WrapTest2 {  
2.     public static void main(String [] args) {  
3.         Long b = new Long(42);  
4.         int x = Integer.valueOf("345");  
5.         int x2 = (int) Integer.parseInt("345", 8);  
6.         int x3 = Integer.parseInt(42);  
7.         int x4 = Integer.parseInt("42");  
8.         int x5 = b.intValue();  
9.     }  
10.}
```

Which two lines will cause compiler errors?

- a. Line 4 and 6
- b. Line 3 and 4
- c. Line 7 and 8
- d. Line 5 and 6

Question 24
Complete
Marked out of 1.00
[Flag question](#)

What is the DataInputStream method that reads an int value?

- a. read()
- b. readInt()
- c. ReadInt()
- d. Readinteger()

Question 25
Complete
Marked out of 1.00
[Flag question](#)

_____ class is used to increase the efficiency of input operations.

- a. PipeInputStream
- b. DataInputStream
- c. BufferedInputStream
- d. FileInputStream

Question 26
Complete
Marked out of 1.00
[Flag question](#)

Given the below mentioned code
and the command-line invocation as,

```
java CommandArgsThree 1 2 3
```

```
public class CommandArgsThree {  
    public static void main(String[] args) {
```

Question 27
Complete
Marked out of 1.00
[Flag question](#)

Given the following code:

```
public class Foo {
    public static void main(String[] args) {
        System.out.println(args[1]);
    }
}
```

If the above code is compiled and run as follows

`java Foo Apples 9 8 7`

What would be the output?

- a. Apples
- b. Foo
- c. 9
- d. java

Question 28
Complete
Marked out of 1.00
[Flag question](#)

Given the following,

```
11. try {
12.     Float f1 = new Float("3.0");
13.     int x = f1.intValue();
14.     byte b = f1.byteValue();
15.     double d = f1.doubleValue();
```

- a. Compilation fails on line 13.
- b. Compilation fails on line 14.
- c. 9
- d. bad number

Question 29
Complete
Marked out of 1.00
[Flag question](#)

Which of these is used to perform all input & output operations in Java?

- a. streams
- b. Variables
- c. Methods
- d. classes

Question 30
Complete
Marked out of 1.00
[Flag question](#)

Choose the correct option to fill the below code

```
import java.io.BufferedReader;
import java.io.IOException;
import java.io.InputStreamReader;
public class Test
{
    public static void main(String[] args) throws IOException
    {
```

- a. Integer.parseInt(br.readLine());
- b. Integer.parseInteger(br.read());
- c. Integer.parseInteger(br.readLine());
- d. Int.parseInteger(br.readLine());

Question 31

Complete

Marked out of

1.00

[Flag question](#)

Given Ajava contains

class A {public static void main(String... args) {}} // 1

and B.java contains

class B {protected static void main(String[] args) {}} // 2

What is the result of attempting to compile each of the two class declarations and invoke each main method from the command line?

- a. Compile-time error at line 1.
- b. Compile-time error at line 2.
- c. An attempt to run A from the command line fails.
- d. An attempt to run B from the command line fails.

Question 32

Complete

Marked out of

1.00

Given the below mentioned code and the command-line invocation as,

java CommandArgsFive 9 8 7 6

public class CommandArgsFive {

Question 33

Complete

Marked out of

1.00

[Flag question](#)

What is the ancestor class of all character-oriented input streams?

- a. WeeklyReader
- b. BufferedReader
- c. Reader
- d. FileReader

Question 34

Complete

Marked out of

1.00

[Flag question](#)

What will be the output of the following Java program?

```

1. class Output
2. {
3.   public static void main(String args[])
4.   {
5.     String str = "true";
6.     boolean x = Boolean.valueOf(str);
7.     System.out.print(x);
8.   }
9. }
```

- a. False
- b. Compilation Error
- c. True

- a. False
- b. Compilation Error
- c. True
- d. Runtime Error

Question 35

Complete
Marked out of
1.00
[Flag question](#)

Given the following,

```
1. public class WrapTest3 {  
2.     public static void main(String [] args) {  
3.         String s = "98.6";  
4.         // insert code here  
5.     }  
6. }
```

Which line inserted at line 4 will cause compiler errors?

- a. float f3 = new Float(3.14f).floatValue();
- b. float f5 = Float.valueOf(s).floatValue();
- c. float f6 = (float) Double.parseDouble("3.14");
- d. float f1 = Float.floatValue(s);

[Dashboard](#) / [My courses](#) / [CS23333-OOPUJ-2023](#) / [Lab-12-Introduction to I/O, I/O Operations, Object Serialization](#) / [Lab-12-Logic Building](#)

Status	Finished
Started	Sunday, 10 November 2024, 2:54 PM
Completed	Sunday, 10 November 2024, 2:58 PM
Duration	3 mins 59 secs

Question 1

Correct

Marked out of 5.00

You are provided with a string which has a sequence of 1's and 0's.

This sequence is the encoded version of a English word. You are supposed write a program to decode the provided string and find the original word.

Each alphabet is represented by a sequence of 0s.

This is as mentioned below:

z:0

Y: 00

X : 000

W : 0000

V : 00000

U : 000000

T : 0000000

and so on upto A having 26 0's (00000000000000000000000000000000).

The sequence

Example 1:

Input1: 010010001

The decoder

Example 2:

Input 1: 0000100000000000100000

The decoded string (original word) will be: WIPRO

Answer: (penalty regime: 0 %)

```
1 import java.util.Scanner;
2
3 public class Decoder {
4
5     public static String decode(String encodedString) {
6         // Split the encoded string by the separator '1'
7         String[] segments = encodedString.split("1");
8
9         StringBuilder decodedWord = new StringBuilder();
10
11        for (String segment : segments) {
12            if (segment.length() > 0) {
13                // The length of the segment corresponds to a letter
14                int letterPosition = segment.length(); // Length of the segment (number of 0's)
15                if (letterPosition >= 1 && letterPosition <= 26) {
16                    // Convert the segment length to corresponding letter
17                    char letter = (char) ('Z' - (letterPosition - 1));
18                    decodedWord.append(letter);
19                }
20            }
21        }
22
23        return decodedWord.toString();
24    }
25
26    public static void main(String[] args) {
27        // Create Scanner object to take input from the user
28    }
29}
```

```
28     Scanner scanner = new Scanner(System.in);
29
30
31     String encodedString = scanner.nextLine();
32
33     // Decode the string and print the result
34     String decodedWord = decode(encodedString);
35     System.out.println(decodedWord);
36
37     // Close the scanner
38     scanner.close();
39 }
40 }
```

Passed all tests! ✓

Question 2

Correct

Marked out of 5.00

Write a function that takes an input String (sentence) and generates a new String (modified sentence) by reversing the words in the original String, maintaining the words position.

In addition, the function should be able to control the reversing of the case (upper or lowercase) based on a case_option parameter, as follows:

If case_option = 0, normal reversal of words i.e., if the original sentence is "Wipro TechNologies BangaLore", the new reversed sentence should be "orpiW seigoloNhceT eroLagnaB".

If case_option = 1, reversal of words with retaining position's case i.e., if the original sentence is "Wipro TechNologies BangaLore", the new reversed sentence should be "Orpiw SeigOlOnhcet ErolaGnab".

Note that positions 1, 7, 11, 20 and 25 in the original string are uppercase W, T, N, B and L.

Similarly, positions 1, 7, 11, 20 and 25 in the new string are uppercase O, S, O, E and G.

NOTE:

- Only space character should be treated as the word separator i.e., "Hello World" should be treated as two separate words, "Hello" and "World". However, "Hello,World", "Hello;World", "Hello-World" or "Hello/World" should be considered as a single word.
- Non-alphabetic characters in the String should not be subjected to case changes. For example, if case option = 1 and the original sentence is "Wipro TechNologies, Bangalore" the new reversed sentence should be "Orpiw ,seiGolonhceT Erolagnab". Note that comma has been treated as part of the word "Technologies," and when comma had to take the position of uppercase T it remained as a comma and uppercase T took the position of comma. However, the words "Wipro and Bangalore" have changed to "Orpiw" and "Erolagnab".
- Kindly ensure that no extra (additional) space characters are embedded within the resultant reversed String.

Examples:

S. No.	input1	input2	output
1	Wipro Technologies Bangalore	0	orpiW seigolonhceT erolagnaB
2	Wipro Technologies, Bangalore	0	orpiW ,seigolonhceT erolagnaB
3	Wipro Technologies Bangalore	1	Orpiw Seigolonhcet Erolagnab
4	Wipro Technologies, Bangalore	1	Orpiw ,seigolonhceT Erolagnab

For example:

Input	Result
Wipro Technologies Bangalore 0	orpiW seigolonhceT erolagnaB
Wipro Technologies, Bangalore 0	orpiW ,seigolonhceT erolagnaB
Wipro Technologies Bangalore 1	Orpiw Seigolonhcet Erolagnab
Wipro Technologies, Bangalore 1	Orpiw ,seigolonhceT Erolagnab

Answer: (penalty regime: 0 %)

```

1 import java.util.Scanner;
2
3 public class ReverseWordsWithCaseControl {
4
5     // Function to reverse words and modify case based on the case_option
6     public static String reverseWordsWithCase(String sentence, int case_option) {
7         // Split the sentence into words using spaces as separators
8         String[] words = sentence.split(" ");
9         StringBuilder result = new StringBuilder();
10
11         // Iterate through each word
12         for (String word : words) {
13             String reversedWord = reverseWord(word);
14
15             // Handle case_option:
16             if (case_option == 1) {
17                 // Retain original word case positions but reverse word characters

```

```

18     reversedWord = reverseCaseWithOriginalPosition(reversedWord, word);
19 }
20
21 // Add the reversed word to the result string with space between words
22 result.append(reversedWord).append(" ");
23 }
24
25 // Remove the trailing space and return the result
26 return result.toString().trim();
27 }
28
29 // Helper function to reverse the word (ignores case)
30 private static String reverseWord(String word) {
31     StringBuilder reversed = new StringBuilder(word);
32     return reversed.reverse().toString();
33 }
34
35 // Helper function to reverse the case of characters based on the original word
36 private static String reverseCaseWithOriginalPosition(String reversedWord, String originalWord) {
37     StringBuilder result = new StringBuilder(reversedWord);
38
39     // Iterate over the characters of the original and reversed words
40     for (int i = 0; i < originalWord.length(); i++) {
41         char originalChar = originalWord.charAt(i);
42         char reversedChar = reversedWord.charAt(i);
43
44         // If the original character is uppercase, make the reversed character uppercase
45         if (Character.isUpperCase(originalChar)) {
46             result.setCharAt(i, Character.toUpperCase(reversedChar));
47         } else if (Character.isLowerCase(originalChar)) {
48             result.setCharAt(i, Character.toLowerCase(reversedChar));
49         }
50     }
51
52     return result.toString();

```

	Input	Expected	Got	
✓	Wipro Technologies Bangalore 0	orpiW seigolonhceT erolagnaB	orpiW seigolonhceT erolagnaB	✓
✓	Wipro Technologies, Bangalore 0	orpiW ,seigolonhceT erolagnaB	orpiW ,seigolonhceT erolagnaB	✓
✓	Wipro Technologies Bangalore 1	Orpiw Seigolonhcet Erolagnab	Orpiw Seigolonhcet Erolagnab	✓
✓	Wipro Technologies, Bangalore 1	Orpiw ,seigolonhceT Erolagnab	Orpiw ,seigolonhceT Erolagnab	✓

Passed all tests! ✓

Question 3

Correct

Marked out of 5.00

Given two char arrays input1[] and input2[] containing only lower case alphabets, extracts the alphabets which are present in both arrays (common alphabets).

Get the ASCII values of all the extracted alphabets.

Calculate sum of those ASCII values. Lets call it sum1 and calculate single digit sum of sum1, i.e., keep adding the digits of sum1 until you arrive at a single digit.

Return that single digit as output.

Note:

1. Array size ranges from 1 to 10.
2. All the array elements are lower case alphabets.
3. Atleast one common alphabet will be found in the arrays.

Example 1:

input1: {'a', 'b', 'c'}

input2: {'b', 'c'}

output: 8

Explanation:

'b' and 'c' are present in both the arrays.

ASCII value of 'b' is 98 and 'c' is 99.

$$98 + 99 = 197$$

$$1 + 9 + 7 = 17$$

$$1 + 7 = 8$$

For example:

Input	Result
a b c	8
b c	

Answer: (penalty regime: 0 %)

```

1 import java.util.HashSet;
2
3 public class CommonCharacterSum {
4
5     public static int singleDigitAsciiSum(char[] input1, char[] input2) {
6
7         HashSet<Character> set1 = new HashSet<>();
8         for (char c : input1) {
9             set1.add(c);
10        }
11
12
13        int asciiSum = 0;
14        for (char c : input2) {
15            if (set1.contains(c)) {
16                asciiSum += (int) c;
17            }
18        }
19
20
21        while (asciiSum >= 10) {
22            asciiSum = sumOfDigits(asciiSum);
23        }
24
25        return asciiSum;
26    }
27
28
29    private static int sumOfDigits(int num) {
30        int sum = 0;

```

```
31 v     while (num > 0) {  
32         sum += num % 10;  
33         num /= 10;  
34     }  
35     return sum;  
36 }  
37  
38 v public static void main(String[] args) {  
39     char[] input1 = {'a', 'b', 'c'};  
40     char[] input2 = {'b', 'c'};  
41     System.out.println(singleDigitAsciiSum(input1, input2)); // Output: 8  
42 }  
43 }  
44 }
```

	Input	Expected	Got	
✓	a b c b c	8	8	✓

Passed all tests! ✓

◀ Lab-12-MCQ

Jump to...

Identify possible words ►

/

Grocery Management System: Automating Inventory

This presentation introduces a comprehensive system for automating inventory management within grocery stores. This system leverages modern technologies to streamline operations, improve accuracy, and enhance efficiency.

 by Hemalatha

Artificial Intelligence and Data Science Department



Abstract

Purpose

To develop a system for automating inventory management in grocery stores, streamlining operations and reducing manual errors.

Technologies

Java Swing for the user interface, MySQL hosted on XAMPP for secure and reliable database management.



Problem Statement and Solution

Problem

Manual inventory management in grocery stores is prone to errors and inefficiencies due to the complex nature of product flow.

Solution

A digital system that leverages Java, XAMPP, and MySQL to provide real-time inventory tracking, secure storage, and user-friendly management.



Objectives

1

Automation

Automate key inventory management processes, simplifying operations and reducing manual workloads.

2

Functionality

Provide functionalities for adding, viewing, and managing grocery items with ease and accuracy.

3

Database

Leverage XAMPP to host a reliable and secure MySQL database, ensuring data integrity and performance.

Technologies Used



Java

The primary programming language for developing the application, leveraging its robust features and vast libraries.



MySQL

A powerful and reliable database system, hosted on XAMPP, for managing grocery item data and transactions.



XAMPP

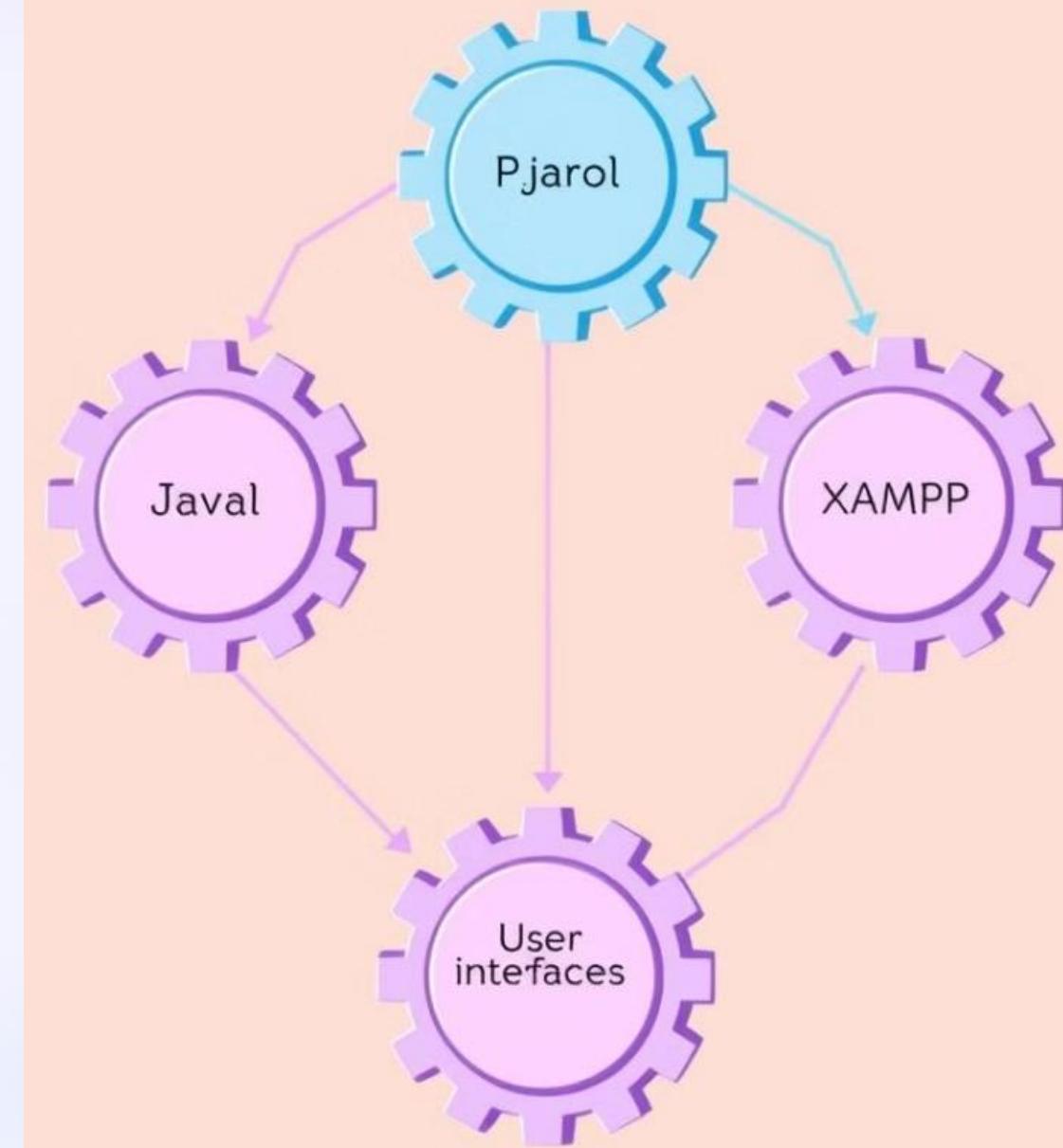
Provides a local development and testing environment for the MySQL database, enabling a streamlined workflow.



Connector/J

Enables seamless communication between the Java application and the MySQL database, ensuring data synchronization.

Grocery Management seep arsitektor



Key Features

Admin Module

Provides secure login for administrators, enabling them to manage grocery items, update inventory, and perform other administrative tasks.

Inventory Module

A comprehensive catalog that provides a structured view of all grocery items, including details like name, category, price, and quantity.

User Module

Allows users to browse and search the inventory, with role-based access to specific data and functionalities.

Implementation Details

1

GUI

Developed using Java Swing to provide an intuitive and user-friendly interface for managing inventory and accessing data.

2

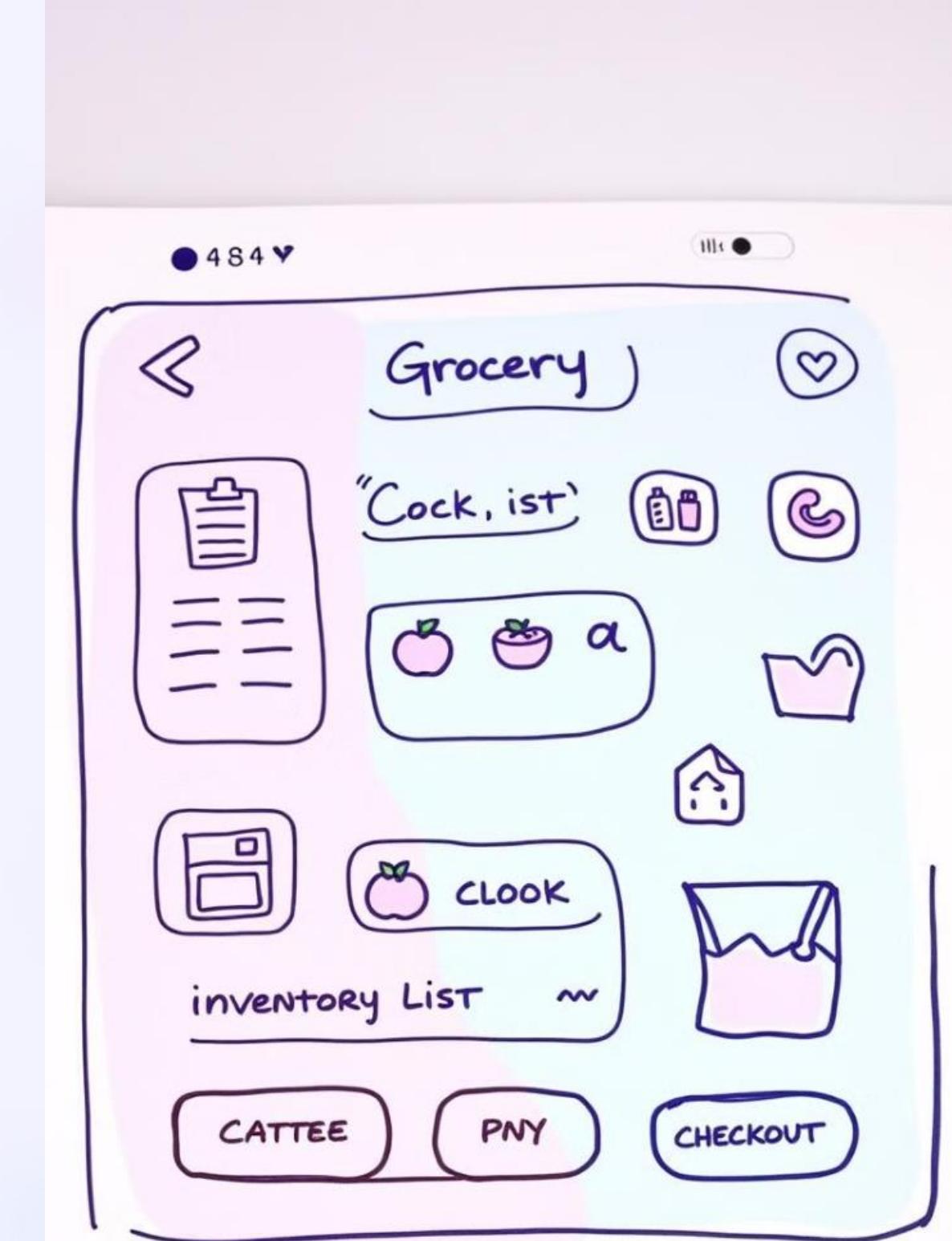
Database Design

A carefully designed MySQL schema is hosted on XAMPP to ensure data consistency, reliability, and security.

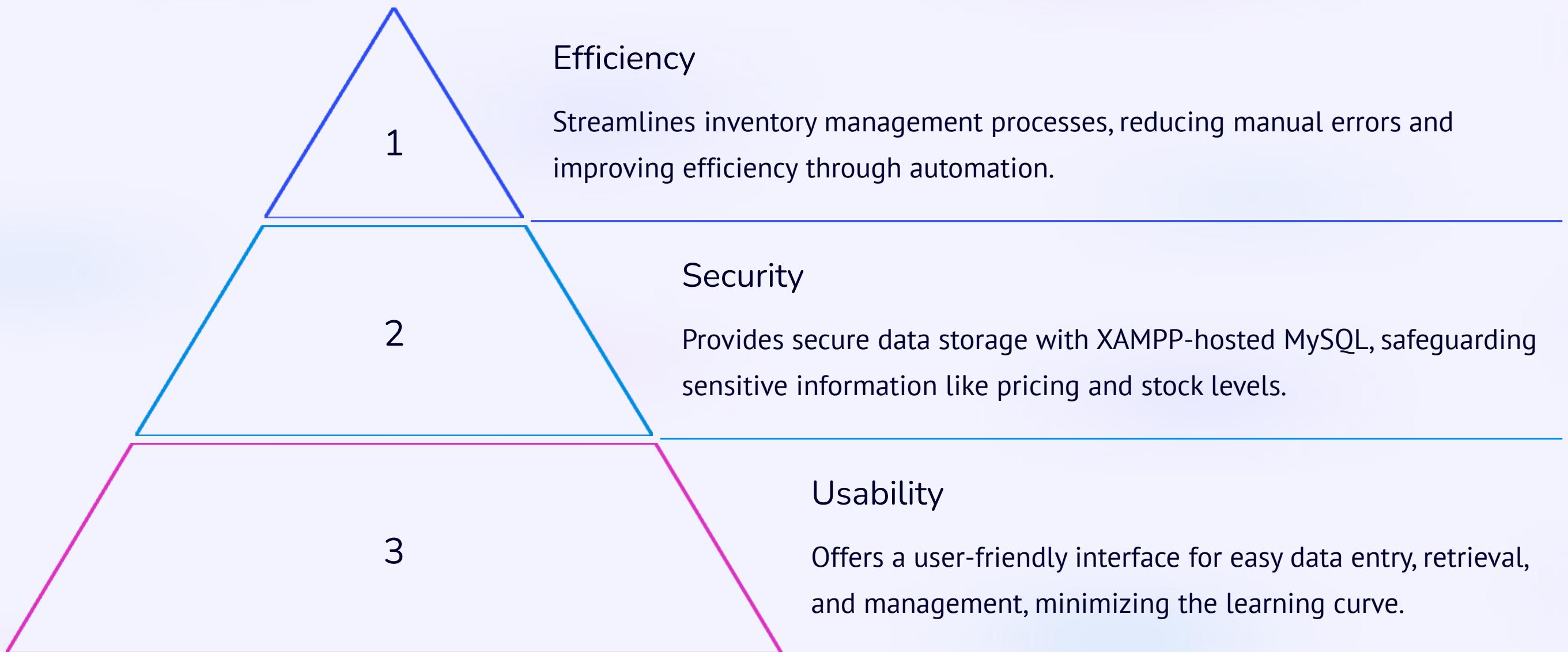
3

Connectivity

Real-time interaction between the application and the MySQL database is enabled through the MySQL Connector/J, ensuring seamless data flow.



Results





Discussion

- 1
- 2

Strengths

The system leverages real-time updates, a scalable design, and robust data handling with XAMPP and MySQL, ensuring a reliable and adaptable solution.

Future Enhancements

Planned enhancements include low-stock alerts, integration with sales systems, and advanced reporting features to further optimize operations.



Conclusion

1

Efficiency

Simplifies grocery inventory management, automating processes and reducing manual errors.

2

Integration

Combines Java, XAMPP, and MySQL for seamless integration and high performance, delivering a comprehensive solution.

3

Scalability

Adaptable and scalable design to accommodate future needs and growing business demands.



GROCERY MANAGEMENT SYSTEM

A MINI PROJECT REPORT

Submitted by

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In partial fulfillment for the award of the degree of
BACHELOR OF
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TABLE OF CONTENTS

1. INTRODUCTION

1.1 INTRODUCTION.....
1.2 OBJECTIVES.....
1.3 MODULES.....

2. SURVEY OF TECHNOLOGIES

2.1 SOFTWARE DESCRIPTION.....
2.2 LANGUAGES.....
2.2.1 MySQL.....
2.2.2 Java jdk

3. REQUIREMENTS AND ANALYSIS

3.1 REQUIREMENT SPECIFICATION.....
3.2 HARDWARE AND SOFTWARE REQUIREMENTS.....
3.3 DATA DICTIONARY.....

4. PROGRAM CODE

5. RESULTS AND DISCUSSIONS.....

6. CONCLUSION.....

7. REFERENCES.....

ABSTRACT

The **Grocery Management System** is a robust and efficient mini-project aimed at simplifying inventory management in retail settings. This system integrates a Java Swing-based graphical user interface with a MySQL database back-end to provide a seamless and user-friendly solution for managing grocery item data. The system's core functionalities include adding new grocery items by capturing their details, displaying the complete inventory in a tabular format, and securely storing all item records in a structured database schema. Administrators can input item details such as name, category, price, and quantity, which are validated to ensure accuracy before being stored in the database. The project leverages Java's JDBC library for real-time database connectivity, enabling smooth insertion, retrieval, and updates of inventory data while maintaining data integrity and consistency.

The graphical user interface is designed to be intuitive and error-free, with input fields and real-time validation mechanisms that prevent incomplete or incorrect entries. The inventory display feature allows administrators to browse the entire catalog of items, showing key details such as name, category, price, and stock quantity. This functionality ensures transparency and provides easy access to inventory data, supporting informed decision-making for restocking and management. The system also incorporates prepared statements in its database queries to enhance security and prevent SQL injection, making it a reliable choice for handling sensitive business data.

This project addresses critical challenges in inventory management, including maintaining data consistency, preventing redundancy, and minimizing errors through automation. The database schema uses primary key constraints to ensure unique identification of each item and incorporates proper data types to maintain the accuracy of records. By automating repetitive tasks such as manual inventory entry and validation, the system significantly reduces manual effort, allowing administrators to focus on other essential operations. The **Grocery Management System** is scalable and can be enhanced with advanced features such as inventory updates, deletion of outdated items, search and filter functionalities, low-stock alerts, and integration with point-of-sale systems for real-time stock adjustments. Additionally, it could support role-based access for staff and administrators, ensuring a secure and efficient multi-user environment.

By providing an organized framework for inventory management and automating key processes, the **Grocery Management System** ensures operational efficiency and reliability for grocery businesses. The project serves as a strong foundation for future enhancements, making it an adaptable and future-ready solution for diverse retail environments.

INTRODUCTION

1.1 Introduction

The **Grocery Management System** is an automated software application designed to streamline the inventory management process for grocery stores and similar retail environments. The system provides a simple yet effective solution for managing grocery stock, reducing manual effort, and improving accuracy in inventory tracking. Traditionally, grocery stores have relied on manual methods to record stock details, monitor availability, and update inventory, which often leads to inefficiencies, errors, and time-consuming processes. This project addresses these challenges by digitizing the inventory management workflow, ensuring real-time data handling and reducing human error.

The system employs Java as the front-end technology, offering a responsive and intuitive graphical user interface (GUI) for administrators and staff. The back-end is powered by MySQL, hosted via XAMPP, to securely manage and store inventory data such as item names, categories, prices, and quantities. MySQL's relational database management system (RDBMS) ensures scalability and reliability, making the system capable of handling large and dynamic datasets effectively. This combination of technologies allows for seamless integration between user actions on the interface and back-end data operations.

Key features of the Grocery Management System include adding new grocery items, displaying the complete inventory catalog, and storing all records in a structured and well-organized database. Administrators can input detailed information about grocery items, which is validated for accuracy and consistency before being added to the inventory. The system also provides an inventory viewing feature, enabling users to browse the list of items and check stock availability. The intuitive interface makes it easy to navigate through the system, ensuring a smooth user experience.

The primary objective of this system is to optimize inventory management processes, making them more efficient, accurate, and user-friendly. By automating various tasks, the system reduces repetitive manual efforts, prevents data redundancy, and ensures that records are consistent and up-to-date. The implementation of real-time database connectivity further enhances the reliability of the system, enabling administrators to manage the inventory with greater precision. Additionally, the system lays the groundwork for generating reports that can provide insights into stock levels and support decision-making.

This project serves as a foundational tool for grocery stores to transition from manual inventory management to an automated, streamlined system that enhances efficiency and accuracy. Future enhancements could include advanced features such as stock update functionality, automated low-stock alerts, integration with sales systems, and search and filter capabilities to improve usability and scalability.

1.2 OBJECTIVES

Primary Objectives

1. **Develop a Grocery Item Entry System:** Create a user-friendly platform for administrators to add new grocery items to the inventory. The system will capture essential details such as item name, category, price, and quantity, ensuring all information is recorded accurately.
2. **Enable Inventory Management:** Provide functionality for administrators to store grocery item details in a well-organized inventory catalog. Ensure the database structure allows efficient storage and retrieval of item data.
3. **Display Added Items:** Once grocery items are added, they should automatically appear in the inventory table in a structured format. This will allow administrators to easily review and monitor stock levels.
4. **Simplify Item Viewing and Browsing:** Offer an intuitive mechanism for users to view and browse inventory items by category, name, or stock availability, helping staff quickly locate items for updates or checks.

Business Objectives

1. **Increase Operational Efficiency:** Automate the process of adding and managing grocery items to reduce manual work, minimize human error, and ensure a streamlined workflow for grocery store staff.
2. **Enhance User Experience:** Develop an intuitive, easy-to-navigate system that allows users to seamlessly input, view, and manage inventory, providing a smooth and hassle-free experience for administrators.
3. **Improve Inventory Accuracy:** Ensure that all grocery items are added to the inventory with accurate and complete details, reducing errors and maintaining up-to-date stock information.
4. **Ensure Data Integrity and Security:** Protect sensitive grocery data with secure database connectivity and validation mechanisms. Prevent unauthorized access to system features, ensuring only authorized personnel can manage inventory.

MODULES

Admin Module

- **Login & Dashboard**

The system will have a secure login functionality for administrators to access inventory management functions. The dashboard will display an overview of the grocery catalog, including the number of available items, low-stock alerts, and recent activity in the system.

- **Inventory Management**

Administrators will be able to add new grocery items to the catalog, edit item details (name, category, price, quantity), or delete outdated items. This module will also allow admins to track item availability and manage stock levels, ensuring that the catalog remains up-to-date and accurate.

- **User Registration Management**

Admin users will be able to manage system access for regular users (e.g., grocery store staff). They can view, approve, or delete registered users from the system and assign roles (e.g., admin, staff) to control access to various functionalities.

- **Reporting & Analytics**

The admin will be able to generate reports on inventory levels, item categories, and stock movements. The system will provide insights into product sales, low-stock alerts, and inventory trends, helping the admin optimize grocery stock management.

User Module

- **Login & Registration**

Users (store staff or managers) can create accounts to log into the system. The registration process will involve providing basic information, such as name, contact details, and role within the grocery store. Only authorized users can access inventory management features.

- **Search & View Items**

Users will have the ability to search the grocery catalog by item name, category, or price. The system will display a structured inventory list, showing key details such as item name, price, quantity available, and category.

- **Inventory Management (for Admins)**

Admins will have the ability to add, edit, or delete grocery items from the catalog. This module ensures that the inventory remains up-to-date and that the grocery store's stock is accurately recorded.

Inventory Module

- **Grocery Catalog**

The system will maintain a catalog of grocery items with detailed information such as item name, category, price, and quantity. All items added by administrators or managers will be stored in this catalog.

- **Item Addition**

Admins will be able to add new items by entering their details into a user-friendly form. Newly added grocery items will then appear in the inventory table, keeping the catalog updated in real time.

- **Item Viewing**

The system will display grocery items in a structured table format, with the ability to sort and filter based on criteria like name, category, or price. This feature ensures users and administrators can quickly browse through available products.

Database Module

- **User Data Management**

The system will securely store user information, including registration details, role information, and activity logs. This ensures that each user's data is maintained and easily retrievable for access control and reporting purposes.

- **Item Data Management**

The system will manage item details in a structured database format. This includes attributes such as item name, category, price, quantity, and stock availability, ensuring that inventory data is accurate and reliable.

- **Transaction Tracking**

The system will track user interactions with the inventory, including item additions, updates, and deletions. Admins can monitor inventory transactions to ensure accurate stock management and record-keeping.

Security Module

- **User Authentication**

Secure login functionality will be implemented with role-based access control to ensure that only authorized personnel (admins or managers) can add, update, or delete inventory items. Regular users will have limited access to browsing and searching the catalog.

- **Session Management**

The system will monitor user sessions to prevent unauthorized access. Session timeouts will be implemented to automatically log out users after a period of inactivity, enhancing security.

- **Data Protection**

Sensitive data, such as user profiles and inventory records, will be encrypted and stored securely. The system will comply with privacy regulations to ensure data protection and safeguard against potential threats.

II. SURVEY OF TECHNOLOGY

2.1 Software Description

Java JDK (Java Development Kit)

The Java Development Kit (JDK) is a software development environment used to develop Java applications. It provides the necessary tools, libraries, and runtime environment for developing Java programs. The JDK includes the Java Runtime Environment (JRE), an interpreter/loader (Java), a compiler (javac), an archiver (jar), a documentation generator (Javadoc), and various other tools for Java development.

Key Features of Java JDK:

- **Cross-Platform:** Java programs, once written, can be run on any platform that supports the Java Runtime Environment (JRE), making it platform-independent.
- **Object-Oriented:** Java follows the object-oriented programming paradigm, making it easy to structure and maintain code.
- **Robust Libraries:** The JDK comes with a rich set of libraries for handling file I/O, networking, security, GUI development, and much more.
- **Automatic Memory Management:** Java handles memory management through automatic garbage collection, reducing the risk of memory leaks.
- **Multithreading:** Java supports multithreading, which allows multiple threads to run concurrently, improving the performance of applications.

In this project, Java JDK is used as the primary programming language for developing the back-end functionality of the Library Management System. It is used to create the server-side logic for user management, book management, and database interaction.

XAMPP (Windows Version 8.0.30-0-VS16-Installer)

XAMPP is an open-source, cross-platform web server solution stack package. It contains Apache, MySQL, PHP, and Perl, providing everything needed to set up a local server environment on a system for web development and database management. In this project, XAMPP is used to host the MySQL database locally, allowing for efficient and easy access to the back-end database.

Key Features of XAMPP:

- **Easy Installation:** XAMPP offers a simple, one-click installation for setting up a local server environment with Apache and MySQL.
- **Local Hosting:** Provides local web server capabilities, allowing developers to test and run websites and applications locally before deployment.
- **Cross-Platform:** Available for Windows, macOS, and Linux, making it suitable for various development environments.

- **Preconfigured Software:** Comes preconfigured with all necessary software components, making it ready to use out of the box.

In this project, XAMPP serves as the local server platform to host the MySQL database, ensuring smooth interaction between the Java-based front-end application and the back-end database.

MySQL 8.4

MySQL is an open-source relational database management system (RDBMS) based on Structured Query Language (SQL). It is widely used in many applications to store and manage data. MySQL 8.4 is the version used in this project for storing library data such as user information, book details, and transaction records.

Key Features of MySQL 8.4:

- **ACID Compliance:** MySQL ensures data integrity through ACID-compliant transactions (Atomicity, Consistency, Isolation, Durability).
- **High Performance:** MySQL is optimized for high-performance querying and can handle large datasets efficiently.
- **Security Features:** MySQL 8.4 includes advanced security features like data encryption, user authentication, and authorization.
- **Data Consistency:** The system supports complex queries, joins, and transactions to maintain data consistency across the database.
- **Scalability:** MySQL can scale to handle large databases and high volumes of queries, making it ideal for growing systems.

In this project, MySQL 8.4 is used to manage all library data, including books, users, and transactions, enabling efficient data retrieval, insertion, and updates.

MySQL Connector 9.1

MySQL Connector is a Java library that allows Java applications to connect to a MySQL database. The MySQL Connector 9.1 version is used in this project to enable the Java-based front-end application to communicate with the MySQL database, ensuring smooth data exchange between the application and the database.

Key Features of MySQL Connector 9.1:

- **Seamless Integration:** MySQL Connector 9.1 provides seamless integration between Java applications and MySQL databases, allowing for easy communication between the two.
- **JDBC Support:** The connector is based on Java Database Connectivity (JDBC) API, providing standard methods for querying and manipulating MySQL databases from Java.

- **Efficient Data Handling:** It allows for fast data transfer between Java and MySQL, supporting high-performance applications.
- **Platform Independence:** Being a Java-based connector, it works across all platforms that support Java, ensuring compatibility in cross-platform development environments.
- **Security Features:** Supports SSL connections to MySQL databases for secure data transmission.

In this project, MySQL Connector 9.1 is used to establish a secure and efficient connection between the Java-based Library Management System and the MySQL database, enabling operations such as user registration, book management, and transaction logging.

Integration of Java, XAMPP, MySQL, and MySQL Connector

This project integrates **Java** for the front-end user interface and back-end logic, **XAMPP** to host the MySQL database, and **MySQL Connector** for database communication. The integration allows for seamless interaction between the front-end (user interface) and back-end (database), where users can register, search for books, and manage transactions, while administrators can add books, view user data, and generate reports. The combination of Java's power for back-end processing, MySQL's robust data management, and the ease of local hosting with XAMPP makes the system efficient, reliable, and scalable.

This breakdown describes the technologies used in your **Library Management System** project and how they integrate to provide a smooth, user-friendly, and efficient system.

III. REQUIREMENTS AND ANALYSIS

3.1 Requirements Specification

User Requirements:

1. **User Registration:** The system should allow users (staff and administrators) to register their accounts with basic personal details such as name, contact information, and role (e.g., administrator or staff). This registration process will provide access to specific functionalities based on the user's role.
2. **Grocery Management (for Administrators):** Administrators should be able to add, edit, or remove grocery items from the system, including details such as item name, category, price, quantity, and availability. The system should allow admins to update or delete outdated products from the inventory.
3. **Item Browsing & Search (for Users):** The system should allow users (store staff) to browse and search the grocery catalog by item name, category, price, or quantity. The search results should display available products in a clear, user-friendly table format, allowing users to easily view stock details.
4. **User Authentication:** The system should require a secure login for users, with role-based access control (admin, manager, or staff) ensuring that each user can only access the features that are relevant to their role (e.g., only admins can add or delete items, while staff members can browse and search the inventory).
5. **View Added Items:** Once a new grocery item is added by an administrator, it should immediately appear in the inventory catalog. This ensures the grocery catalog is always up-to-date and that all staff can access the latest inventory data in real time.
6. **Report Generation (for Administrators):** The system should allow administrators to generate detailed reports on inventory status, including stock levels, low-stock items, and price categories. These reports will also include transaction histories for better tracking of item sales or restocking actions.
7. **Data Security:** The system should implement encryption and secure storage of sensitive data, such as user profiles, item details, and transaction records, ensuring compliance with privacy regulations and safeguarding against unauthorized access or data breaches.

System Requirements:

1. **Programming Language:** The system will be developed using **Java** for both front-end and back-end functionality.
2. **Database:** **MySQL** will be used to store the library's data, such as user accounts, book details, and transaction records.
3. **Database Connector:** **MySQL Connector (Java)** will be used to establish the connection between the Java application and the MySQL database.

4. **Server:** The **XAMPP** software (Windows version) will be used to host the local MySQL database and facilitate communication between the front-end and back-end components.
5. **Operating System Compatibility:** The system will run on **Windows, macOS, and Linux** operating systems.
6. **Security:** The system will use secure login functionality and encrypt sensitive user and transaction data, ensuring security and privacy.

3.2 HARDWARE AND SOFTWARE REQUIREMENTS

Software Requirements:

- **Operating System:**
 - **Windows 10/11, macOS, Linux** (for server and client applications)
- **Front End:**
 - **Java (JDK 8 or higher)**: Used for developing the graphical user interface (GUI) and back-end logic of the system.
- **Back End:**
 - **MySQL 8.4**: Used as the database to store user, book, and transaction data.
 - **MySQL Connector 9.1**: Enables communication between the Java application and the MySQL database.
- **Database Server:**
 - **XAMPP (Windows version 8.0.30-0-VS16)**: Used for setting up the local MySQL server environment.

Hardware Requirements:

- **System Type:**
 - **Desktop PC or Laptop** with sufficient resources for development and running the system.
- **Processor:**
 - **Intel® Core™ i3-6006U CPU** or equivalent (minimum requirement).
- **Memory:**
 - **4.00 GB RAM** or higher for smooth operation.
- **Storage:**
 - At least **500 MB** of free disk space for the operating system, software, and database storage.
- **Operating System:**

- **Windows 10/11** or any other supported OS (macOS/Linux).
- **Monitor:**
 - **1024 x 768** resolution or higher to ensure proper display of the graphical interface.
- **Input Devices:**
 - **Keyboard** and **Mouse** for system navigation and interaction.
- **Printer (Optional):**
 - Printer can be optionally used for generating hard copies of reports (though this is not mandatory for basic system functionality).

3.3 DATA DICTIONARY

BOOK TABLE:

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	item_id	int(11)			No	None		AUTO_INCREMENT	Change Drop More
2	item_name	varchar(100)	utf8mb4_general_ci		No	None			Change Drop More
3	category	varchar(50)	utf8mb4_general_ci		Yes	NULL			Change Drop More
4	price	double			Yes	NULL			Change Drop More
5	quantity	int(11)			Yes	NULL			Change Drop More

Stored added Groceries

◀ T ➡	▼	item_id	item_name	category	price	quantity
<input type="checkbox"/>	Edit Copy Delete	1	mango	fruits	30	2
<input type="checkbox"/>	Edit Copy Delete	2	Cheese	dairy	20	5

IV. PROGRAM CODE

Creating Table:

```
import java.sql.Connection;
import java.sql.DriverManager;
import java.sql.SQLException;
import java.sql.Statement;

public class CreateTableExample {
    private static final String URL = "jdbc:mysql://localhost:3306/grocery_management"; // Database URL
    private static final String USER = "root"; // Default XAMPP username
    private static final String PASSWORD = ""; // Leave blank if no password is set

    public static Connection getConnection() {
        try {
            return DriverManager.getConnection(URL, USER, PASSWORD);
        } catch (SQLException e) {
            System.out.println("Connection Failed!");
            e.printStackTrace();
            return null;
        }
    }

    public static void createTable() {
        String createTableSQL = "CREATE TABLE IF NOT EXISTS item (" +
                "item_id INT PRIMARY KEY AUTO_INCREMENT, " +
                "item_name VARCHAR(100) NOT NULL, " +
                "category VARCHAR(50), " +
                "price DOUBLE, " +
                "quantity INT" +
                ");";
    }
}
```

```
try (Connection conn = getConnection(); Statement stmt = conn.createStatement()) {  
    if (conn != null) {  
        stmt.executeUpdate(createTableSQL);  
        System.out.println("Table 'item' created or already exists.");  
    } else {  
        System.out.println("Failed to connect to the database.");  
    }  
} catch (SQLException e) {  
    System.out.println("Error creating table.");  
    e.printStackTrace();  
}  
}  
  
public static void main(String[] args) {  
    createTable();  
}  
}
```

ADD Groceries:

```
import javax.swing.*;
import java.awt.*;
import java.awt.event.ActionEvent;
import java.awt.event.ActionListener;
import java.sql.Connection;
import java.sql.DriverManager;
import java.sql.PreparedStatement;
import java.sql.SQLException;

public class GroceryManagementSystem {

    private static final String URL = "jdbc:mysql://localhost:3306/grocery_management";
    private static final String USER = "root"; // XAMPP default username
    private static final String PASSWORD = ""; // leave blank if no password is set

    public static Connection getConnection() {
        try {
            return DriverManager.getConnection(URL, USER, PASSWORD);
        } catch (SQLException e) {
            System.out.println("Connection Failed!");
            e.printStackTrace();
            return null;
        }
    }

    // Method to create the popup window for adding grocery information
    public static void showGroceryEntryPopup() {
        // Creating a JFrame for the popup
        JFrame frame = new JFrame("Enter Grocery Information");
        frame.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
```

```
frame.setSize(300, 250);

// Creating the form elements
JLabel nameLabel = new JLabel("Item Name:");
JTextField nameField = new JTextField(15);

JLabel categoryLabel = new JLabel("Category:");
JTextField categoryField = new JTextField(15);

JLabel priceLabel = new JLabel("Price:");
JTextField priceField = new JTextField(15);

JLabel quantityLabel = new JLabel("Quantity:");
JTextField quantityField = new JTextField(15);

JButton submitButton = new JButton("Submit");

// Adding an action listener to the submit button
submitButton.addActionListener(new ActionListener() {
    public void actionPerformed(ActionEvent e) {
        String itemName = nameField.getText();
        String category = categoryField.getText();
        String priceText = priceField.getText();
        String quantityText = quantityField.getText();

        // Validate the input
        if (itemName.isEmpty() || category.isEmpty() || priceText.isEmpty() ||
            quantityText.isEmpty()) {
            JOptionPane.showMessageDialog(frame, "Please fill all fields.", "Error",
                JOptionPane.ERROR_MESSAGE);
            return;
        }
    }
});
```

```
    }

    try {
        double price = Double.parseDouble(priceText);
        int quantity = Integer.parseInt(quantityText);

        // Call method to insert into database
        insertGroceryItem(itemName, category, price, quantity);
        JOptionPane.showMessageDialog(frame, "Grocery item added successfully!");

        // Clear the input fields after successful insertion
        nameField.setText("");
        categoryField.setText("");
        priceField.setText("");
        quantityField.setText("");

    } catch (NumberFormatException ex) {
        JOptionPane.showMessageDialog(frame, "Price and quantity must be numbers.", "Error", JOptionPane.ERROR_MESSAGE);
    }
}

// Adding the components to the frame
frame.setLayout(new GridLayout(5, 2));
frame.add(nameLabel);
frame.add(nameField);
frame.add(categoryLabel);
frame.add(categoryField);
frame.add(priceLabel);
frame.add(priceField);
frame.add(quantityLabel);
```

```
frame.add(quantityField);
frame.add(submitButton);

frame.setVisible(true); // Display the popup
}

// Method to insert a grocery item into the database
public static void insertGroceryItem(String itemName, String category, double price, int quantity) {
    String insertQuery = "INSERT INTO item (item_name, category, price, quantity)
VALUES (?, ?, ?, ?)";

    try (Connection conn = getConnection(); PreparedStatement pstmt =
conn.prepareStatement(insertQuery)) {
        pstmt.setString(1, itemName);
        pstmt.setString(2, category);
        pstmt.setDouble(3, price);
        pstmt.setInt(4, quantity);

        pstmt.executeUpdate();
        System.out.println("Grocery item inserted successfully.");
    } catch (SQLException e) {
        System.out.println("Error inserting grocery item.");
        e.printStackTrace();
    }
}

public static void main(String[] args) {
    showGroceryEntryPopup(); // Show the popup window on startup
}
```

V. RESULT AND DISCUSSION

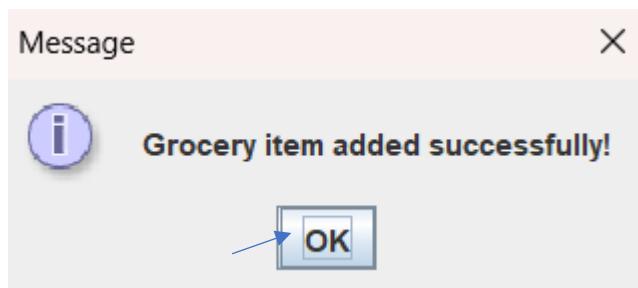
ADDING GROCERIES FORM

The screenshot shows a window titled "Enter Grocery Infor...". Inside, there are four input fields labeled "Item Name", "Category", "Price", and "Quantity", each with a corresponding text input box. Below these fields is a blue "Submit" button.

Entering the groceries name:

The screenshot shows the same window as above, but the input fields now contain data: "Rice" in the "Item Name" field, "pantry" in the "Category" field, "3000" in the "Price" field, and "3" in the "Quantity" field. A blue arrow points to the "Submit" button at the bottom left.

The grocery items are added:



DATABASE TABLE:

	<input type="button" value="←"/>	<input type="button" value="→"/>	<input type="button" value="▼"/>	item_id	item_name	category	price	quantity
<input type="checkbox"/>				1	mango	fruits	30	2
<input type="checkbox"/>				2	Cheese	dairy	20	5
<input type="checkbox"/>				3	Rice	pantry	3000	3

The item is added successfully in the database

RESULTS

1. User Features:

- **User Registration:** The user registration functionality was successfully implemented. Users (administrators and staff) are able to register by entering their details, such as name and role. Upon successful registration, users can log into the system using their credentials, ensuring secure access to the platform.
- **Add Grocery Item (Admin Functionality):** The item addition feature was successfully implemented for administrators. Administrators can add new grocery items to the system by entering details such as item name, category, price, and quantity. The items are then stored in the database and immediately become part of the inventory, ready for management or viewing by staff.
- **View Grocery Items (User & Admin Functionality):** Both administrators and regular users (staff) can view the complete list of grocery items in the inventory. The system displays the item name, category, price, and available quantity. This feature allows users to browse the inventory and check stock availability in a user-friendly table format.

2. Admin Functionality:

- **Manage Grocery Inventory:** Administrators have the ability to manage the grocery inventory. They can view all items in the catalog and update or remove entries when needed. This ensures that the inventory remains accurate and up-to-date, reducing inconsistencies and errors in stock management.

3. Performance & Security:

- **Performance:** The system performed well during testing, allowing users to register, add grocery items, and view the inventory without any issues. Item details were correctly added to the database and displayed in an intuitive table format for easy access.
- **Security:** Basic security measures were implemented, including secure user login. User data and grocery item records are securely stored in the database, and only registered users can access specific functionalities based on their roles. This ensures the system is reliable and safe from unauthorized access.

DISCUSSION

1. User Experience:

- **Strengths:** The system's interface is simple and user-friendly, allowing users to add grocery items, view inventory, and navigate through the catalog with ease. The input forms are intuitive and include validation to prevent errors during data entry.
- **Areas for Improvement:** The interface could be enhanced with search and filter functionalities for categories or item availability, allowing users to locate specific products quickly. Optimizing the system for mobile devices would further improve accessibility for users on the go.

2. Notification Integration:

- **Strengths:** Notifications or messages within the system work well for confirming item addition or invalid inputs, ensuring users are informed during interactions.
- **Areas for Improvement:** As the system scales, integrating email or SMS notifications for low-stock alerts or important updates could provide additional value for inventory management.

3. Admin Efficiency:

- **Strengths:** Administrators can efficiently add, view, and remove grocery items from the inventory. The structured database and real-time updates make inventory management straightforward and reliable.
- **Areas for Improvement:** Adding features like item updates, detailed reporting, and automated alerts for low-stock items would significantly enhance administrative oversight and reduce manual monitoring.

4. Security Concerns:

- **Discussion:** Basic security features, such as role-based access control and secure login mechanisms, were implemented to ensure authorized usage. However, incorporating advanced security measures, such as two-factor authentication, session timeout management, and encrypted storage of sensitive data, would strengthen the system against potential vulnerabilities.

5. Performance:

- **Observation:** The system performed well with a small number of users and inventory items during testing. However, performance testing under larger datasets and concurrent user scenarios is necessary to ensure scalability and consistent performance as the system grows.

VII. REFERENCES

Java Development and Backend Resources:

- **Java Documentation:** Official Java documentation for learning and implementing Java-based applications. Available at: <https://docs.oracle.com/en/java/>

Database Management:

- **MySQL Documentation:** Official documentation for MySQL, covering database setup, queries, and best practices. Available at: <https://dev.mysql.com/doc>
- **MySQL Connector:** Documentation for MySQL Connector/J, which allows Java applications to communicate with MySQL databases. Available at: <https://dev.mysql.com/doc/connector-j/>

Frontend Development and User Interface:

- **Java Swing Documentation:** Resources for building GUI applications using Java Swing for creating the user interface. Available at: <https://docs.oracle.com/javase/8/docs/api/javax/swing/package-summary.html>

Project Management and Development Tools:

- **GitHub:** For version control and collaboration during the development process. Documentation available at: <https://docs.github.com>