

```
1 program 1
2 // java.lang.ArithmeticException:
3 class Test
4 {
5     public static void main(String[] args)
6     {
7         System.out.println("Hello World!");
8         System.out.println("Hello World!");
9         System.out.println(5/0); //
10        System.out.println("Hello World!");
11        System.out.println("Hello World!");
12    }
13 }
14
15
16 D:\AY 2023-24\SEM-I\JAVA\DIVB>javac Test_Exception.java
17
18 D:\AY 2023-24\SEM-I\JAVA\DIVB>java Test
19 Hello World!
```

```
20 Hello World!
21 Exception in thread "main" java.lang.ArithmeticException: / by
22     at Test.main(Test_Exception.java:7)
23
24 =====
25 program 2
26 // unchecked exception    / unchecked exceptions are child clas.
27 //RuntimeException
28 class DemoException
29 {
30     public static void main(String[] args)
31     {
32         System.out.println("Hello World!");
33         System.out.println("Hello World!");
34         //System.out.println(10/0);    // ArithmeticException: /
35
36         //int [] x = {10,20,35};
37         //System.out.println(x[10]); //ArrayIndexOutOfBoundsException
38
```

```
39         String s = "Venu";
40         System.out.println(s.charAt(30)); // StringIndexOutOfBoundsException
41         System.out.println("Remaining code ");
42     }
43 }
44 =====
45 program 3
46 // checked exceptions / are child class of Exception class
47 import java.io.*;
48 class DemoException
49 {
50     public static void main(String[] args)
51     {
52         //FileInputStream fis = new FileInputStream("venu.txt");
53
54         System.out.println("Hello students ");
55         System.out.println("Hello students ");
56         Thread.sleep(3000); // InterruptedException
57         System.out.println("Hello students ");
```

```
58     }
59 }
60 =====
61 program 4
62 // Error OutOfMemoryError
63 package com.DIVB;
64
65 public class DemoException {
66
67     public static void main(String[] args) {
68         int [] x = new int [1000000000];
69     }
70
71 }
72 Exception in thread "main" java.lang.OutOfMemoryError: Java heap
73 at DivB_Programs/com.DIVB.DemoException.main(DemoException.java:68)
74 =====
75 program 5
76 // handling exception using try-catch block
```

```
77 import java.io.*;
78 class DemoException
79 {
80     public static void main(String[] args)
81     {
82         try
83         {
84             System.out.println("Hello World!");
85             System.out.println("Hello World!");
86             System.out.println(10/0); // ArithmeticException:
87             System.out.println("Remaining code ");
88         }
89         catch(ArithmeticException ae)
90         {
91             System.out.println("dividing by zero is not allowed");
92         }
93         System.out.println("code ");
94     }
95 }
```

```
96 D:\AY 2023-24\SEM-I\JAVA\DIVB>javac DemoException.java
97
98 D:\AY 2023-24\SEM-I\JAVA\DIVB>java DemoException
99 Hello World!
100 Hello World!
101 dividing by zero is not allowed
102 code
103 =====
104 program 6
105 // 'try' without 'catch'
106 import java.io.*;
107 class DemoException
108 {
109     public static void main(String[] args)
110     {
111         try
112         {
113             System.out.println("Hello World!");
114             System.out.println("Hello World!");
```

```
115         System.out.println(10/0); // ArithmeticException:
116         System.out.println("Remaining code ");
117     }
118     /*catch(ArithmeticException ae)
119     {
120         System.out.println("dividing by zero is not allowed");
121     }*/
122     System.out.println("code ");
123 }
124 }
125
```

```
126 D:\AY 2023-24\SEM-I\JAVA\DIVB>javac DemoException.java
```

```
127 DemoException.java:6: error: 'try' without 'catch', 'finally'
128 or resource declarations
```

```
129         try
130         ^
```

```
131 1 error
```

```
132 =====
```

```
133 program 7
```

```
134 //Exception class can handle all type of exceptions
135 import java.io.*;
136 import java.util.*;
137 class DemoException
138 {
139     public static void main(String[] args)
140     {
141         try
142         {
143
144             Scanner sc = new Scanner(System.in);
145             System.out.println("Enter number ");
146             int num = sc.nextInt();
147             System.out.println(10/num); // ArithmeticException
148             System.out.println("Hello World!");
149             System.out.println("Hello World!");
150             System.out.println("venu".charAt(10)); // StringIndexOutOfBoundsException
151             System.out.println("Remaining code ");
152         }
```



```
153         catch(Exception ae)
154         {
155             System.out.println(" "+ae);
156         }
157         System.out.println("code ");
158     }
159 }
160
161 D:\AY 2023-24\SEM-I\JAVA\DIVB>javac DemoException.java
162
163 D:\AY 2023-24\SEM-I\JAVA\DIVB>java DemoException
164 Enter number
165 0
166 java.lang.ArithmeticException: / by zero
167 code
168 =====
169 program 8
170 import java.util.*;
171 class DemoException
```

```
172 {
173     public static void main(String[] args)
174     {
175         try
176         {
177             Scanner sc = new Scanner(System.in);
178             System.out.println("Enter number ");
179             int num = sc.nextInt();
180             System.out.println(10/num); // ArithmeticException
181             String s = "venu";
182             System.out.println(s.charAt(5));
183         }
184         catch (ArithmeticException ae)
185         {
186             System.out.println("divide by zero is not allowed");
187         }
188         catch (StringIndexOutOfBoundsException se)
189         {
190             System.out.println("character at that index is not
```

```
191         }
192
193         System.out.println("rest of app code");
194     }
195
196 }
197
198 D:\AY 2023-24\SEM-I\JAVA\DIVA>java DemoException
199 Enter number
200 10
201 1
202 character at that index is not available
203 rest of app code
204 =====
205 program 9
206 // 3 ways of printing exception messages and try with multiple
207 import java.util.*;
208 class DemoException
209 {
```

```
210     public static void main(String[] args)
211     {
212         try
213         {
214             Scanner sc = new Scanner(System.in);
215             System.out.println("Enter number ");
216             int num = sc.nextInt();
217             System.out.println(10/num); // ArithmeticException
218             String s = "venu";
219             System.out.println(s.charAt(2));
220             int [] x = {10,20,30};
221             System.out.println(x[10]);
222         }
223         catch (ArithmeticException ae)
224         {
225             System.out.println("divide by zero is not allowed
226         }
227         catch(StringIndexOutOfBoundsException se)
228         {
```

```
229         System.out.println("character at that index is not
230     }
231     catch(Exception e)
232     {
233         System.out.println("Error Message: "+e);
234         System.out.println("Error Message: "+e.getMessage().
235             e.printStackTrace());
236     }
237
238
239     System.out.println("rest of app code");
240 }
241
242 }
243
244 D:\AY 2023-24\SEM-I\JAVA\DIVA>java DemoException
245 Enter number
246 5
247 2
```

```
248 n
249 Error Message: java.lang.ArrayIndexOutOfBoundsException: Index
250 Error Message: Index 10 out of bounds for Length 3
251 java.lang.ArrayIndexOutOfBoundsException: Index 10 out of boun
252         at DemoException.main(DemoException.java:15)
253 rest of app code
254 =====
255 program 10
256 // parent to child exception is not allowed
257 import java.util.*;
258 class DemoException
259 {
260     public static void main(String[] args)
261     {
262         try
263         {
264             Scanner sc = new Scanner(System.in);
265             System.out.println("Enter number ");
266             int num = sc.nextInt();
```

```
267         System.out.println(10/num); // ArithmeticException
268         String s = "venu";
269         System.out.println(s.charAt(20)); // SIOBE
270         int [] x = {10,20,30};
271         System.out.println(x[1]); // AIOBE
272     }
273     // parent to child
274     catch(Exception e)
275     {
276         System.out.println("error: "+e);
277     }
278     catch (ArithmeticException ae)
279     {
280         System.out.println("divide by zero is not allowed
281     }
282
283
284     System.out.println("rest of app code");
285 }
```

```
286
287 }
288
289 D:\AY 2023-24\SEM-I\JAVA\DIVA>javac DemoException.java
290 DemoException.java:21: error: exception ArithmeticException has
291         catch (ArithmeticException ae)
292             ^
293 1 error
294
295 =====
296 program 11
297 //statement between try and catch is not allowed
298 import java.util.*;
299 class DemoException
300 {
301     public static void main(String[] args)
302     {
303         try
304         {
```



```
305     Scanner sc = new Scanner(System.in);
306     System.out.println("Enter number ");
307     int num = sc.nextInt();
308     System.out.println(10/num); // ArithmeticException
309     String s = "venu";
310     System.out.println(s.charAt(20)); // SIOBE
311     int [] x = {10,20,30};
312     System.out.println(x[1]); // AIOBE
313 } // parent to child
314 System.out.println("hello ");
315 catch (ArithmeticException ae)
316 {
317     System.out.println("divide by zero is not allowed
318 }
319 catch(Exception e)
320 {
321     System.out.println("error: "+e);
322 }
323
```

```
324
325     System.out.println("rest of app code");
326 }
327
328 }
329     ^
330 1 error
331
332 D:\AY 2023-24\SEM-I\JAVA\DIVA>javac DemoException.java
333 DemoException.java:6: error: 'try' without 'catch', 'finally' or
334 declarations
335         try
336         ^
337 DemoException.java:18: error: 'catch' without 'try'
338         catch (ArithmeticException ae)
339         ^
340 DemoException.java:22: error: 'catch' without 'try'
341         catch(Exception e)
342         ^
```

343 3 errors

344 =====

345 program 12

346 // finally block

347 import java.util.*;

348 class DemoException

349 {

350 public static void main(String[] args)

351 {

352 try

353 {

354 Scanner sc = new Scanner(System.in);

355 System.out.println("Enter number ");

356 int num = sc.nextInt();

357 System.out.println(10/num); // ArithmeticException

358 }

359 catch (ArithmeticException ae)

360 {

361 System.out.println("divide by zero is not allowed

```
362     }
363     finally
364     {
365
366         System.out.println("fially block");
367     }
368     System.out.println("rest of app code");
369
370
371
372 }
373
374 }
375 D:\AY 2023-24\SEM-I\JAVA\DIVA>java DemoException
376 Enter number
377 5
378 2
379 fially block
380 rest of app code
```

```
381 =====
382 program 13
383 // finally block executed even if exception is raised
384 import java.util.*;
385 class DemoException
386 {
387     public static void main(String[] args)
388     {
389         try
390         {
391             Scanner sc = new Scanner(System.in);
392             System.out.println("Enter number ");
393             int num = sc.nextInt();
394             System.out.println(10/num); // ArithmeticException
395         }
396         catch (ArithmeticException ae)
397         {
398             System.out.println("divide by zero is not allowed
399         }
```

```
400         finally
401         {
402
403             System.out.println("fially block");
404         }
405         System.out.println("rest of app code");
406     }
407
408 }
409 D:\AY 2023-24\SEM-I\JAVA\DIVA>java DemoException
410 Enter number
411 0
412 divide by zero is not allowed
413 fially block
414 rest of app code
415 =====
416 program 14
417 // try with finally block without catch block
418 import java.util.*;
```

```
419 class DemoException
420 {
421     public static void main(String[] args)
422     {
423         try
424         {
425             Scanner sc = new Scanner(System.in);
426             System.out.println("Enter number ");
427             int num = sc.nextInt();
428             System.out.println(10/num); // ArithmeticException
429         }
430         finally
431         {
432
433             System.out.println("fially block");
434         }
435         System.out.println("rest of app code");
436     }
437
```

```
438 }
439 D:\AY 2023-24\SEM-I\JAVA\DIVA>java DemoException
440 Enter number
441 5
442 2
443 finally block
444 rest of app code
445 =====
446 program 15
447 // exception in finally block
448 import java.util.*;
449 class DemoException
450 {
451     public static void main(String[] args)
452     {
453         try
454         {
455             Scanner sc = new Scanner(System.in);
456             System.out.println("Enter number ");
```



```
457         int num = sc.nextInt();
458         System.out.println(10/num); // ArithmeticException
459     }
460     catch(ArithmeticException ae)
461     {
462         int [] x = {10,20};
463         System.out.println(x[5]); // AIOBE
464     }
465     finally
466     {
467         System.out.println("venu".charAt(10)); // SIOBE
468         System.out.println("fially block");
469     }
470     System.out.println("rest of app code");
471 }
472
473 }
474 D:\AY 2023-24\SEM-I\JAVA\DIVA>java DemoException
475 Enter number
```

```
476 5
477 2
478 Exception in thread "main" java.lang.StringIndexOutOfBoundsException:
479 index out of range: 10
480     at java.base/java.lang.StringLatin1.charAt(StringLatin1.
481     at java.base/java.lang.String.charAt(String.java:1515)
482     at DemoException.main(DemoException.java:20)
483 =====
484 program 16
485 // when multiple exceptions then it will print only finally bl
486 import java.util.*;
487 class DemoException
488 {
489     public static void main(String[] args)
490     {
491         try
492         {
493             Scanner sc = new Scanner(System.in);
494             System.out.println("Enter number ");
```

```
495         int num = sc.nextInt();
496         System.out.println(10/num); // ArithmeticException
497     }
498     catch(ArithmeticException ae)
499     {
500         int [] x = {10,20};
501         System.out.println(x[5]); // AIOBE
502     }
503     finally
504     {
505         System.out.println("venu".charAt(10)); // SIOBE
506         System.out.println("fially block");
507     }
508     System.out.println("rest of app code");
509 }
510
511 }
512 D:\AY 2023-24\SEM-I\JAVA\DIVA>java DemoException
513 Enter number
```

```
514 0
515 Exception in thread "main" java.lang.StringIndexOutOfBoundsException:
516 index out of range: 10
517     at java.base/java.lang.StringLatin1.charAt(StringLatin1.
518     at java.base/java.lang.String.charAt(String.java:1515)
519     at DemoException.main(DemoException.java:20)
520 =====
521 program 17
522 // finally block not execute if try block not execute
523 import java.util.*;
524 class DemoException
525 {
526     public static void main(String[] args)
527     {
528         System.out.println(10/num); // ArithmeticException
529         try
530         {
531             Scanner sc = new Scanner(System.in);
532             System.out.println("Enter number ");
```

```
533         int num = sc.nextInt();
534
535     }
536     catch(ArithmeticException ae)
537     {
538         int [] x = {10,20};
539         System.out.println(x[5]); // AIOBE
540     }
541     finally
542     {
543         System.out.println("venu".charAt(10)); // SIOBE
544         System.out.println("fially block");
545     }
546     System.out.println("rest of app code");
547 }
548
549 }
```

```
550 D:\AY 2023-24\SEM-I\JAVA\DIVA>javac DemoException.java
```

```
551 DemoException.java:6: error: cannot find symbol
```

```
552         System.out.println(10/num); // ArithmeticExcep
553                                     ^
554     symbol:    variable num
555     location:  class DemoException
556 1 error
557
558
559 =====
560 program 18
561 // finally block not execute as exit(0) is called
562 import java.util.*;
563 class DemoException
564 {
565     public static void main(String[] args)
566     {
567         try
568         {
569             System.out.println("try block ");
570             System.exit(0);
```

```
571     }
572     catch(ArithmeticException ae)
573     {
574         int [] x = {10,20};
575         System.out.println(x[5]); // AIOBE
576     }
577     finally
578     {
579         System.out.println("venu".charAt(10)); // SIOBE
580         System.out.println("fially block");
581     }
582     System.out.println("rest of app code");
583 }
584 }
585 D:\AY 2023-24\SEM-I\JAVA\DIVA>java DemoException
586 try block
587 =====
588 program 19
589 //userdefined checked exception : Executes without exception i
```

```
590 import java.util.*;
591 class UserChecked
592 {
593
594     static int cetmarks(int marks) throws InvalidCetMarks
595     {
596         if (marks>=1)
597         {
598             System.out.println("you are eligible to take admis.
599         }
600         else
601         {
602             throw new InvalidCetMarks();
603         }
604         return 0;
605     }
606     public static void main(String[] args) throws InvalidCetM
607     {
608         Scanner sc = new Scanner(System.in);
```



```
609         System.out.println("Enter marks ");
610         int marks = sc.nextInt();
611         UserChecked.cetmarks(marks);
612
613     }
614
615 }
616 D:\AY 2023-24\SEM-I\JAVA\DIVA>java UserChecked
617 Enter marks
618 10
619 you are eligible to take admissin in MCA
620 =====
621 program 20
622 //userdefined checked exception : Executes with exception in c
623 import java.util.*;
624 class UserChecked
625 {
626
627     static int cetmarks(int marks) throws InvalidCetMarks
```

```
628     {
629         if (marks>=1)
630         {
631             System.out.println("you are eligible to take admis.
632         }
633         else
634         {
635             throw new InvalidCetMarks();
636         }
637         return 0;
638     }
639     public static void main(String[] args) throws InvalidCetM
640     {
641         Scanner sc = new Scanner(System.in);
642         System.out.println("Enter marks ");
643         int marks = sc.nextInt();
644         UserChecked.cetmarks(marks);
645
646     }
```

```
647
648 }
649 D:\AY 2023-24\SEM-I\JAVA\DIVA>java UserChecked
650 Enter marks
651 0
652 Exception in thread "main" InvalidCetMarks
653         at UserChecked.cetmarks(DemoException.java:13)
654         at UserChecked.main(DemoException.java:22)
655 =====
656 program 21
657 // userdefined checked exception with description
658 //InvalidCetMarks.java
659 // user defined checked exception
660 class InvalidCetMarks extends Exception
661 {
662     InvalidCetMarks(String str)
663     {
664         super(str);
665     }
```

```
666 }
667 // DemoException.java
668 import java.util.*;
669 class UserChecked
670 {
671
672     static int cetmarks(int marks) throws InvalidCetMarks
673     {
674         if (marks>=1)
675         {
676             System.out.println("you are eligible to take admis.
677         }
678         else
679         {
680             throw new InvalidCetMarks("your score is not valid
681         }
682         return 0;
683     }
684     public static void main(String[] args) throws InvalidCetM
```

```
685     {
686         Scanner sc = new Scanner(System.in);
687         System.out.println("Enter marks ");
688         int marks = sc.nextInt();
689         UserChecked.cetmarks(marks);
690
691     }
692
693 }
694 // user defined checked exception
695 class InvalidCetMarks extends Exception
696 {
697     InvalidCetMarks(String str)
698     {
699         super(str);
700     }
701 }
702 D:\AY 2023-24\SEM-I\JAVA\DIVA>java UserChecked
703 Enter marks
```

704 0

705 **Exception** in thread "main" InvalidCetMarks

706 at UserChecked.cetmarks(DemoException.java:13)

707 at UserChecked.main(DemoException.java:22)

708

709 D:\AY 2023-24\SEM-I\JAVA\DIVA>javac DemoException.java

710

711 D:\AY 2023-24\SEM-I\JAVA\DIVA>java UserChecked

712 Enter marks

713 0

714 **Exception** in thread "main" InvalidCetMarks: your score is not
715 to take admission

716 at UserChecked.cetmarks(DemoException.java:13)

717 at UserChecked.main(DemoException.java:22)

718

719 =====

720

721

722

723
724
725
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728
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735
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