



รายงานวิชา การเขียนโปรแกรมภาษาจawa รหัสวิชา CPSC 462



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## คำนำ

รายงานฉบับนี้จัดทำขึ้นเพื่อ เป็นส่วนหนึ่งของรายวิชา CPSC 462 การเขียนโปรแกรมภาษา  
จawa โดยมีจุดประสงค์เพื่อการศึกษาค้นคว้าเกี่ยวกับเรื่อง การเขียนโปรแกรมภาษาจawa  
ข้าพเจ้าหวังว่ารายงานฉบับนี้จะทำให้ทุกท่านที่ได้เห็นผลงานในรายวิชา CPSC 462 การ  
เขียนโปรแกรมภาษาจawa ของข้าพเจ้าที่ทำขึ้น ผู้จัดทำขอขอบคุณ ผศ.บุรินทร์ รุจันพันธุ์ ที่ให้ความรู้  
และ แนวทางในการศึกษา และเพื่อนๆ ที่มี ส่วนร่วมในการให้ความช่วยเหลือ ข้อมูลที่เป็นประโยชน์  
ผู้จัดทำหวังว่ารายงานฉบับนี้จะให้ความรู้ และเป็นประโยชน์แก่ผู้อ่านทุกท่าน

นายสัมพันธ์ สุริยา

ผู้จัดทำ

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# งานมอบหมายที่ 1 คัดลอก Source code ด้วยมือ ถึงบรรทัด 1022 #J1203

Source Code

---

```

1. class J0100 {
2.     public static void main (String args[]) {
3.         System.out.println (args.length);
4.         System.out.println (args[0]);
5.     }
}
[กิจกรรมที่ 2]
6. class J0101 {
7.     public static void main (String args[]) {
8.         boolean b = true;
9.         System.out.println ("boolean = " + b);
10.        char y;
11.        y = 'a';
12.        System.out.println ("character = " + y);
13.        byte c;
14.        c = 127;
15.        System.out.println ("byte = " + c);
16.        short a;
17.        a = 32767;
18.        System.out.println ("short = " + a);
19.        int x;
20.        x = 2147483647;
21.        System.out.println ("integer = " + x);
22.        long b;
23.        b = 923372031954775907L;
24.        System.out.println ("long = " + b);
25.    }
}
[กิจกรรมที่ 3]
26. class J0102 {
27.     public static void main (String args[]) {
28.         float d;
29.         d = 340ooooooooooooooooooooooooooooof;
30.         System.out.println ("float = " + d);
31.         double e;
32.         e = 179000000000000000000000000000000d;
33.         System.out.println ("double = " + e);
34.         String z = "Thai A";
35.         System.out.println ("string = " + z);
36.         System.out.print (z.substring (0,4));
37.         System.out.print (z.substring (2,5));
38.         System.out.print (z.substring (4));
39.         System.out.println (z.toUpperCase ());
40.         System.out.println (z.toLowerCase ());
41.         char ar [] = new char [12];
42.         ar [0] = 'A';
43.         System.out.println (char [0]);
44.         ar [1] = 'B';
45.         System.out.println (ar [0]);
46.         System.out.println (ar [2] + ar [4]);
47.         z = "1234.1";
48.         int m = Integer.parseInt (z.substring (0,3)) + 5;
49.         double n = Double.parseDouble (z) + 0.2;
50.         System.out.println (m+n);
51.         System.out.println (Integer.toString (m) + 5);
}
[กิจกรรมที่ 4]
52. class J0201 {
53.     public static void main (String args[]) {
54.         int x;
55.         if (x > 5) System.out.println ("more than 5");
56.         if (x > 5 && x < 10)
57.             System.out.println ("five to ten");
58.         if (x > 5 || x < 10) System.out.println ("all numbers");
59.         if (x > 10)
60.             System.out.println ("more than 10");
61.         System.out.println (x);
62.     }
}
[กิจกรรมที่ 5]
63. import java.lang.*;
64. class J0202 {
65.     public static void main (String args[]) {
66.         int x;
67.         x = 6;
68.         if (x > 5) System.out.println ("more than 5");
69.         else if (System.out.println ("less than or equal 10"));
70.         Comparable a [] = new Comparable [5];
71.         a [0] = new Integer (3);
72.         a [1] = new Integer (10);
73.         a [2] = "abc";
74.         System.out.println (a [0] + " " + a [1] + " " + a [2]);
75.         if (a [0].compareTo (a [1]) < 0)
76.             System.out.print (a [0]);
77.         if (a [1].compareTo (a [0]) > 0)
78.             System.out.print (a [1]);
79.         if (a [0].compareTo (a [0]) == 0)
80.             System.out.print ("equal");
81.         System.out.print (a [0].compareTo (a [1]));
82.     }
}

```

## [Java Programming] 6

```

27 import java.util.Date;
28 class JC209 {
29 public static void main(String args[]) {
30 byte a = (byte)(new Date().getTime() % 5);
31 switch(a) {
32 case 1:
33 System.out.println("one"); break;
34 case 2:
35 System.out.println("two"); break;
36 default:
37 System.out.println("not found" + a);
38 break;
39 }
40 }
41 }
42 }

```

## [Java Programming] 9

```

115 class J0206 {
116 public static void main(String args[]) {
117 System.out.println("print 1 to 10:::");
118 int i;
119 i = 1;
120 try {
121 do {
122 System.out.println(i);
123 i++;
124 } while (i <= 10);
125 } catch (ArrayIndexOutOfBoundsException e) {
126 System.out.println("over index of array");
127 }
128 }
129 }
130 }

```

## [Java Programming] 7

```

132 class J0207 {
133 public static void main (String args[]) {
134 System.out.println("ASCII character ::");
135 for (int i = 0; i < 256; i++) {
136 System.out.print((char)i + " ");
137 }
138 String s = "thaiall";
139 System.out.println(s + s.length());
140 }
141 }
142 }

```

## [Java Programming] 10

```

131 import java.io.*;
132 class J0301 {
133 public static void main (String args[])
134 throws IOException {
135 char buf;
136 buf > (char)System.in.read();
137 System.out.println("Output is " + buf);
138 }
139 }
140 }

```

## [Java Programming] 8

```

142 class J0208 {
143 public static void main (String args[]) {
144 System.out.println("print 1 to 10:::");
145 int i = 1;
146 i = -5;
147 while (i <= 5) {
148 try {
149 i++;
150 System.out.println((double)5/i);
151 System.out.println(5/i);
152 }
153 catch (ArithmeticException e) {
154 System.out.println("may divide by zero");
155 }
156 }
157 int k = 0;
158 i = 0;
159 while (i < 5) {
160 System.out.print (++k);
161 k = k + (i++);
162 System.out.print(k - );
163 }
164 }
165 }

```

## [Java Programming] 11

```

159 import java.io.*;
160 class J0302 {
161 public static void main (String args[])
162 throws IOException {
163 char buf1, buf2;
164 buf1 = (char)System.in.read();
165 buf2 = (char)System.in.read();
166 System.out.println("Output is " + buf1 + buf2);
167 }
168 }
169 }

```

## [Java Programming] 12

```

168 import java.io.*;
169 class J0303 {
170 public static void main (String args[])
171 throws IOException {
172 System.out.println("Get until receive '0'");
173 [hidden is 19, 10];
174 char buf;
175 do {
176 buf = (char)System.in.read();
177 System.out.println("Output is " + buf);
178 } while (buf != '0');
179 }
180 }
181 }

```

## Übungsaufgabe 13

```

178 import java.io.*;
179 class J0304 {
180 public static void main (String args []) throws IOException {
181 BufferedReader stdIn = new
182 BufferedReader(new InputStreamReader(System.in));
183 String buf;
184 int i1,i2,i3;
185 i1 = Integer.parseInt(buf);
186 buf = stdIn.readLine();
187 i2 = Integer.parseInt(buf);
188 i3 = i1+i2;
189 System.out.println("Output is " + i1 +
190 * i2 + " = " + i3);
191 }

```

## Übungsaufgabe 14

```

192 import java.io.*;
193 class J0305 {
194 public static void main (String args []) throws IOException {
195 BufferedReader stdIn = new
196 BufferedReader (System.in));
197 String buf;
198 int i;
199 System.out.println("Get until receive
200 0");
201 do {
202 buf = stdIn.readLine();
203 i = Integer.parseInt(buf);
204 System.out.println("Output is " + i);
205 } while (i != 0);
206 }

```

## Übungsaufgabe 15

```

207 class JC0401 {
208 public static void main (String args []) {
209 sub1(); sub2(); sub1();
210 }
211 static void sub1 () {
212 System.out.print("X");
213 }
214 static void sub2 () {
215 System.out.print("Y");
216 }
217 }

```

## Übungsaufgabe 16

```

218 class J0402 {
219 public static void main (String args []) {
220 int s = 0;
221 s = sub(2,4,s);
222 s = sub(4,5,s);
223 System.out.println("Sum: " + s);
224 }
225 public static int sub (int x, int y, int z) {
226 int a = y + x + z;
227 return (a + y + x + z);
228 }

```

## Übungsaufgabe 17

```

229 class J0403 {
230 public static void main (String args []) {
231 int j = 3;
232 System.out.println(doubleOfNumber(j));
233 }
234 static int doubleOfNumber (int i) {
235 int j = i * 2;
236 return (j);
237 }
238 }

```

## Übungsaufgabe 18

```

239 class sub01 {
240 void subx () {
241 System.out.println("subx in sub01");
242 }
243 class sub02 {
244 void subx () {
245 System.out.println("subx in sub02");
246 }
247 }
248 }

```

```
249 class J0404 extends sub02 {
```

```

250 J0404 () {
251 super.subx ();
252 this.subx ();
253 }
254 public static void main (String args []) {
255 sub01 x = new sub01 ();
256 System.out.println("main");
257 x.subx ();
258 J0404 y = new J0404 ();
259 y.subx ();
260 void subx () {
261 System.out.println("subx in main");
262 }
263 }
```

```

1 [FileIO1]
2 class J0501 {
3 public static void main (String args[]) {
4 int x [] = { 4, 14, 12 };
5 System.out.println ("Amount of array = "
6 " " + x.length);
7 for (int i = 0; i < x.length; i++) {
8 System.out.println ("element " + i + " = "
9 " " + x[i]);
10 }
11 }
12 }

13 [FileIO2]
14 class J0502 {
15 public static void main (String args[]) {
16 File d = new File (args[0]);
17 String n [] = d.list();
18 for (int i = 0; i < n.length(); i++) {
19 File f = new File (args[0] + "/" + n[i]);
20 System.out.println ("File : " + n[i] + "
21 " + f.length());
22 }
23 }
24 }

25 [FileIO3]
26 class J0601 {
27 public static void main (String args[]) {
28 String a [][] = new String [2][3];
29 a [0][0] = "101";
30 a [0][1] = "102";
31 a [0][2] = "103";
32 int i = 0;
33 a [1][i++] = "tom";
34 a [1][i++] = "dang";
35 a [1][i++] = "boy";
36 for (i = 0; i < a [0].length; i++) {
37 System.out.println ("element of 0, " + i +
38 " = " + a [0][i]);
39 }
40 for (i = 0; i < a [1].length; i++) {
41 System.out.println ("element of 1, " + i +
42 " = " + a [1][i]);
43 }
44 }
45 }

46 [FileIO4]
47 import java.io.*;
48 class J0602 {
49 public static void main (String args[]) {
50 String s = "Hello.java";
51 File file = new File (s);
52 boolean success = file.createNewFile();
53 if (success) {
54 File file2 = new File ("newHello.java");
55 success = file.renameTo (file2);
56 }
57 }
58 }

59 [FileIO5]
60 class J0603 {
61 public static void main (String args[]) throws IOException {
62 int n = 0;
63 byte b [] = new byte [128];
64 FileInputStream fin = new
65 FileInputStream ("j0602.java");
66 while ((n = fin.read (b)) != -1) {
67 for (int i = 0; i < n; i++)
68 System.out.print ((char) b [i]);
69 }
70 fin.close();
71 }
72 }

73 [FileIO6]
74 class J0604 {
75 public static void main (String args[]) throws IOException {
76 File f = new File ("j0601.java");
77 System.out.println ("getName : " + f.getName ());
78 System.out.println ("getPath : " + f.getPath ());
79 System.out.println ("getAbsolutePath :
80 " + f.getAbsolutePath ());
81 System.out.println ("exists : " + f.exists ());
82 System.out.println ("isFile : " + f.isFile ());
83 System.out.println ("isDirectory : " + f.isDirectory ());
84 System.out.println ("canWrite : " + f.canWrite ());
85 System.out.println ("canRead : " + f.canRead ());
86 System.out.println ("length : " + f.length ());
87 File file = new File ("hello.txt");
88 boolean success = file.createNewFile ();
89 File file2 = new File ("newHello.java");
90 success = file.renameTo (file2);
91 }
92 }

93 [FileIO7]
94 class J0605 {
95 public static void main (String args[]) {
96 import java.io.*;
97 public static void main (String args[]) {
98 FileOutputStream fout = new File
99 OutputStream ("tmp.txt");
100 for (int i = 0; i < 256; i++) {
101 fout.write (i);
102 }
103 fout.close();
104 }
105 }
106 }

```

Program 25

```

339 import java.io.*;
340 class J0605 {
341 public static void main (String args[])
    throws IOException {
342     FileOutputStream fout = new
        FileOutputStream ("tmp.txt");
343     for (int i=1; i<=10; i++) {
344         fout.write (i+47);
345         fout.write (13);
346         fout.write (10);
347     }
348     fout.close ();
349 }
350 }
```

Program 26

```

351 import java.io.*;
352 class J0606 {
353 public static void main (String args[])
    throws IOException {
354     int i=1, n=0;
355     char b [] = new char [16];
356     FileReader fin = new
        FileReader ("tmp.txt");
357     while ((n = fin.read (b)) != -1) {
358         System.out.print ((i-1)*16 + " - "
            +(i*16-1)+": ");
359         System.out.print (b[0]+b[1]+b[2]+b[3]
            +b[4]+b[5]+b[6]+b[7]+b[8]);
360         System.out.print (b[9]+b[10]+b[11]+
            b[12]+b[13]+b[14]+b[15]);
361     i=i+1;
362 }
363 fin.close ();
364 System.out.println (b = bin.readLine ());
365 fin.close ();
366 }
367 }
```

Program 27

```

358 import java.io.*;
359 class J0607 {
360 public static void main (String args[])
    throws IOException {
361     int j=1, n=0;
362     char b [] = new char [16];
363     FileReader fin = new
        FileReader ("tmp.txt");
364     while ((n = fin.read (b)) != -1) {
365         System.out.println (j+n+": "+b[0]);
366         j=j+1;
367 }
368 fin.close ();
369 System.out.println (b = bin.readLine ());
370 fin.close ();
371 }
```

Program 28

```

372 import java.io.*;
373 class J0608 {
374 public static void main (String args[])
    throws IOException {
375     int i=1;
376     String b;
377     FileReader fin = new
        FileReader ("data.txt");
378     BufferedReader bin = new
        BufferedReader (fin);
379     while ((b = bin.readLine ()) != null) {
380         System.out.print (i+" : "+b);
381         i=i+1;
382     }
383     bin.close ();
384 }
```

Program 29

```

385 import java.io.*;
386 class J0701 {
387 public static void main (String args[])
    throws IOException {
388     int i=1;
389     int tot = 0;
390     String b;
391     String [] fields;
392     String patternStr = ",";
393     FileReader fin = new
        FileReader ("data.txt");
394     BufferedReader bin = new
        BufferedReader (fin);
395     while ((b = bin.readLine ()) != null) {
396         fields = b.split (patternStr);
397         System.out.println (i+" : "+fields[0]);
398         tot = tot + Integer.parseInt (fields[1]);
399         i=i+1;
400     }
401     System.out.println ("Total : " +tot);
402 }
```

```

1. J0701 Solution 3.0
420 import java.io.*;
421 import java.lang.*;
422 class J0702 {
423 public static void main (String args[])
throws IOException {
424 int i = 1;
425 String b;
426 String [] fields;
427 String patternStr = " ";
428 FileReader fin = new
FileReader ("data.txt");
429 BufferedReader bin = new
BufferedReader (fin);
430 fileOutputStream fout = new
FileOutputStream ("data.htm");
431 BufferedOutputStream bout = new
BufferedOutputStream (fout);
432 PrintStream pout = new
PrintStream (fout);
433 pout.println("<body");
434 bgcolor=yellow><table border=1
width=100%>");
435 while ((b = bin.readLine ()) != null) {
436 fields = b.split (patternStr);
437 pout.println ("<tr>");
438 pout.println ("<td>" + i + "</td> ");
439 pout.println ("<td>" + ID + "
" + fields [0] + "</td> ");
440 pout.println ("<td>" + Name + "
" + fields [1] + "</td> ");
441 pout.println ("<td>" + Status + "
" + fields [3] + "</td> ");
442 pout.println ("</tr> ");
443 i = i + 1;
444 }
445 pout.println ("</table></body> ");
446 fin.close ();
447 pout.close ();
448 }

2. J0901 Solution 3.2
478 import java.io.*;
479 class J0901 {
480 public static void main (String args[])
throws IOException {
481 int found = 0;
482 char buf;
483 String bg_g = "";
484 String [] fields;
485 String patternStr = " ";
486 System.out.println ("What id and end
character with [x] ?");
487 buf = (char) System.in.read ();
488 while (buf != 'x') {
489 g = g + buf;
490 buf = (char) System.in.read ();
491 }
492
493 FileReader fin = new
fileReader ("data.txt");
494 BufferedReader bin = new
BufferedReader (fin);
495 while ((b = bin.readLine ()) != null) {
496 fields = b.split (patternStr);
497 if (fields [0].equals (g)) {
498 System.out.println (fields [1]);
499 found = 1;
500 }
501 if (found == 0)
502 System.out.println ("Not found");
}
}

```

```

503 fin.close();
}
}

[ ] main function 33
504 import java.io.*;
505 class J0902 {
506 public static void main (String args[])
throws IOException {
507 int found=0;
508 String b,q="";
509 String [] fields;
510 System.out.println ("What string and enter");
511 BufferedReader stdin = new
BufferedReader (new InputStreamReader
(System.in));
512 q=stdin.readLine ();
513 String patternStr=q;
514 FileReader fin = new FileReader ("data.txt");
515 BufferedReader bin = new
BufferedReader (fin);
516 while ((b=bin.readLine ()) != null) {
517 fields = b.split (patternStr);
518 if (fields.length > 1) {
519 fields = b.split (" ");
520 System.out.println (fields [0] + fields [1]
+ fields [2] + fields [3]);
521 found = 1;
522 }
523 }
524 if (found == 0)
, System.out.println ("Not found");
525 fin.close ();
526 }
527 }

[ ] main function 34.
528 import java.io.*;
529 class J0901 {
530 public static void main (String args[])
throws IOException {
531 int i=0,t1,t2;
532 String b, status;
533 String [] fields [];
534 String [] recs1 = new String [10];
535 String [] recs2 =
" A, Active ", " R, Retire ";
536 String patternStr = ",";
537 FileReader fin = new
FileReader ("data.txt");
538 BufferedReader bin = new
BufferedReader (fin);
539 while ((b=bin.readLine ()) != null) {
540 recs1 [i] = b;
541 i=i+1;
542 }

[ ] main function 35.
543 fin.close ();
544 t1 = i;
545 t2 = recs2.length;
546 for (int j=0; j < t1; j++) {
547 fields = recs1 [j].split (patternStr);
548 System.out.print (fields [0] + fields [1] +
fields [2] + fields [3]);
549 status = fields [3];
550 for (int k=0; k < t2; k++) {
551 fields = recs2 [k].split (patternStr);
552 if (fields [0].equals (status)) {
553 System.out.println (fields [1]);
554 }
555 }
556 }
557 }
558 }

[ ] main function 35.
559 import java.io.*;
560 class J0902 {
561 public static void main (String args[])
throws IOException {
562 int i = 0, t1, t2;
563 String b, status;
564 String [] fields [];
565 String [] recs1 = { "A", "Active", "R", "Retire" };
566 String [] recs2 = new String [2];
567 FileReader fin = new
FileReader ("data.txt");
568 BufferedReader bin = new
BufferedReader (fin);
569 while ((b=bin.readLine ()) != null) {
570 recs1 [i] = b;
571 i = i+1;
572 }
573 fin.close ();
574 t1 = i;
575 i = 0;
576 FileReader fin2 = new
FileReader ("data.txt");
577 BufferedReader bin2 = new
BufferedReader (fin2);
578 while ((b=bin2.readLine ()) != null) {
579 recs2 [i] = b;
580 i = i+1;
581 }
582 fin2.close ();
583 t2 = i;
584 for (int j=0; j < t1; j++) {
585 fields = recs1 [j].split ",";
586 System.out.print (fields [0] + fields [1] +
fields [2] + fields [3]);
587 status = fields [3];
588 for (int k=0; k < t2; k++) {
589 fields = recs2 [k].split ",";

```

```

149 if (fields[0].equals(status)) {
150 System.out.println(fields[1]);
151 }
152 }
153 }
154 }

155 class J1101 {
156 public static void main(Storing args[]) {
157 int tmp, x [] = {5,6,1,2,9,1,2,9,3,7};
158 for (int i = 1; i < x.length; i++) {
159 for (int j = x.length - 1; j >= i; j--) {
160 if (x[j-1] > x[j]) {
161 tmp = x[j];
162 x[j] = x[j-1];
163 x[j-1] = tmp;
164 }
165 }
166 }

167 for (int i = 0; i < x.length; i++) {
168 System.out.println(x[i]);
169 }
170 }

171 }

172 import java.io.*;
173 class J1102 {
174 public static void main(String args[]) {
175 String tmp, x [] =
176 {"ac","abc","adbc","ar","aa","acd","aa","ad"};
177 System.out.println("Before sorting");
178 printlist(x);
179 for (int i = 1; i < x.length; i++) {
180 for (int j = x.length - 1; j >= i; j--) {
181 if (x[j-1].compareTo(x[j]) > 0) {
182 tmp = x[j];
183 x[j] = x[j-1];
184 x[j-1] = tmp;
185 }
186 }
187 }

188 System.out.println("After sorting");
189 printlist(x);
190 }

191 }

192 public static void printlist(String[] x) {
193 for (int i = 0; i < x.length; i++) {
194 System.out.println(x[i]);
195 }
196 }

197 }

198 import java.applet.*;
199 import java.awt.*;
200 public class J1101 extends java.applet.Applet {
201 public void paint(Graphics g) {
202 g.setColor(new Color(240,240,240));
203 g.drawString("test", 10, 20);
204 }
205 }

206 import java.applet.*;
207 import java.awt.*;
208 public class J1102 extends Applet {
209 int i, j;
210 String iStr, p;
211 public void init() {
212 setBackground(Color.yellow);
213 p = getParameter("x");
214 }

215 public void paint(Graphics g) {
216 g.setColor(Color.black);
217 g.drawString(p, 0, 10);
218 i = 1;
219 while (i <= 10) {
220 j = 10 * i;
221 iStr = Integer.toString(i);
222 g.drawString(iStr, 72, j);
223 i++;
224 }
225 }

226 }

227 import java.applet.*;
228 import java.awt.*;
229 public class J1103 implements Runnable {
230 Thread timer;
231 int row = 10;
232 public void paint(Graphics g) {
233 row = row + 2;
234 g.drawLine(5, row, 30, row);
235 }

236 public void start() {
237 timer = new Thread(this);
238 timer.start();
239 }

240 public void run() {
241 Thread me = Thread.currentThread();
242 while (timer == me) {
243 try {
244 Thread.currentThread().sleep(1000);
245 } catch (InterruptedException e) {}
246 repaint();
247 }
248 }

249 }

```

```

    [J]nstruction 41
690 import java.applet.*;
691 import java.awt.*;
692 public class J1104 extends Applet {
693     Image img;
694     public void init() {
695         setBackground(Color.green);
696         img = getImage(getDocumentBase(),
697             "x.gif");
698     }
699     public void paint(Graphics g) {
700         g.setColor(Color.black);
701         g.drawLine(5, 10, 20, 40);
702         g.drawRect(50, 50, 40, 40);
703         g.drawOval(10, 10, 20, 30);
704         g.setColor(Color.white);
705         g.fillRect(50, 50, 20, 30);
706         g.setColor(Color.red);
707         g.drawArc(40, 30, 55, 55, 0, 120);
708         int[] x = {0, 20, 10, 5, 10};
709         int[] y = {0, 50, 90, 80, 30};
710         g.drawPolygon(x, y, 5);
711         g.drawImage(img, 0, 200, this);
712     }
    [J]nstruction 42
713 import java.applet.*;
714 import java.awt.*;
715 import java.awt.event.*;
716 public class J1105 extends Applet
717     implements ActionListener {
718     Button b1 = new Button("1");
719     Label l1 = new Label("Hello");
720     }
721     public void actionPerformed(ActionEvent e) {
722         if (e.getSource() == b1) {
723             l1.setText("Good Morning");
724         }
725     }
    [J]nstruction 43
726 import java.io.*;
727 class J1201 {
728     public static void main(String args[])
729         throws IOException {
730         int buf = 49;
731         while (buf != 51) {
732             if (buf >= 49 && buf <= 51) {
733                 System.out.println("What is your option?");
734                 buf = System.in.read();
735                 switch (buf) {
736                     Case 49:
737                     for (int i = 1; i <= 10; i++) {
738                         System.out.println(i);
739                     }
740                 break;
741             case 50:
742                 System.out.println("ok");
743                 break;
744             case 51:
745                 break;
746             case 13:
747                 break;
748             default:
749                 System.out.println("Nothing to do");
750             break;
751         }
752         System.out.println("See you again");
753     }
754 }
    [J]nstruction 44
755 import java.io.*;
756 class J1202 {
757     public static void main(String args[])
758         throws IOException {
759         BufferedReader stdIn = new
760         BufferedReader(new InputStreamReader(System.in));
761         String buf = "";
762         while (!buf.equals("s")) {
763             System.out.println("What is your option.");
764             System.out.print("1.print 1 to 10");
765             System.out.print("2.print 'ok'");
766             System.out.print("3.exit");
767             buf = stdIn.readLine();
768             if (buf.equals("1")) {
769                 for (int i = 1; i <= 10; i++) {
770                     System.out.println(i);
771                 }
772             } else if (buf.equals("2")) {
773                 System.out.println("ok");
774             } else if (buf.equals("3")) {
775                 System.out.println("See you again");
776             }
777         }
778     }
    [J]nstruction 45
779 import java.io.*;
780 class J1203 {
781     public static void main(String args[])
782         throws IOException {
783         BufferedReader stdIn = new
784         BufferedReader(new InputStreamReader(System.in));
785         String buf = "";
786         while (!buf.equals("3")) {
787             System.out.print("What is your option?");
788             System.out.print("1.print 1 to 10");
789             System.out.print("2.print 'ok'");
790             System.out.print("3.exit");
791             buf = stdIn.readLine();
792             if (buf.equals("1")) {
793                 for (int i = 1; i <= 10; i++) {
794                     System.out.println(i);
795                 }
796             } else if (buf.equals("2")) {
797                 System.out.println("ok");
798             } else if (buf.equals("3")) {
799                 System.out.println("exit");
800             }
801         }
802     }

```

งานมอบหมายที่ 2 เขียน 36 พีระมิดของตัวเลขด้วยภาษา Java

(1)

```
public class black01 {  
    public static void main(String den[]) {  
        int black = 4;  
  
        for (int sampan = 1; sampan <= black; sampan++) {  
            for (int j = 2; j <= sampan; j++) {  
                System.out.print(" ");  
            }  
  
            System.out.print(sampan + "" + sampan);  
  
            for (int j = black; j >= (sampan + 1); j--) {  
                System.out.print("**");  
            }  
  
            System.out.println(sampan + "" + sampan);  
        }  
    }  
}
```

```
}
```

```
}
```

```
}
```

(2)

```
public class black02 {
```

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

```
        int black = 4;
```

```
        for (int sampan = 1; sampan <= black; sampan++) {
```

```
            for (int j = sampan; j <= sampan + 2; j++) {
```

```
                System.out.print(j);
```

```
}
```

```
            for (int j = 1; j <= sampan + 1; j++) {
```

```
                System.out.print("*");
```

```
}
```

```
            System.out.println("");
```

```
 }  
  
}  
  
}  
  
(3)  
  
public class black03 {  
  
    public static void main(String den[]) {  
  
        int black = 5;  
  
        for (int sampan = 1; sampan < black; sampan++) {  
  
            System.out.print(sampan + " " + (sampan + 4));  
  
            for (int j = 1; j <= sampan + 4; j++) {  
  
                System.out.print("*");  
  
            }  
  
            System.out.println("");  
  
        }  
  
    }  
}
```

}

(4)

```
public class black04 {
```

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

```
        int black = 5;
```

```
        for (int sampan = 1; sampan <= black; sampan++) {
```

```
            for (int j = 1; j <= sampan; j++) {
```

```
                System.out.print("*");
```

```
            }
```

```
            for (int j = sampan; j >= 1; j--) {
```

```
                System.out.print(j);
```

```
            }
```

```
            for (int j = 1; j < sampan; j++) {
```

```
                System.out.print(j + 1);
```

```
            }
```

```
    System.out.println();  
}  
}  
}
```

(5)

```
public class black05 {  
  
    public static void main(String den[]) {  
  
        int black = 4;  
  
        for (int sampan = 1; sampan <= black; sampan++) {  
  
            for (int j = black - 1; j >= sampan; j--) {  
  
                System.out.print(" ");  
            }  
  
            System.out.print(sampan);  
  
            for (int j = 1; j < sampan; j++) {  
  
                System.out.print("**");  
            }  
        }  
    }  
}
```

```
}

System.out.println(sampan);

}

for (int sampan = 1; sampan < black; sampan++) {

    for (int j = 1; j <= sampan; j++) {

        System.out.print(" ");

    }

    System.out.print(black - sampan);

    for (int j = black - 1; j > sampan; j--) {

        System.out.print("**");

    }

    System.out.println(black - sampan);

}

}

}
```

(6)

```
public class black06 {  
  
    public static void main(String den[]) {  
  
        int black = 7;  
  
        for (int sampan = black; sampan >= 1; sampan--) {  
  
            for (int j = black; j > sampan; j--) {  
  
                System.out.print(" ");  
  
            }  
  
            for (int j = 1; j <= sampan * 2 - 1; j++) {  
  
                System.out.print((j % 2));  
  
            }  
  
            System.out.println();  
  
        }  
  
    }  
}
```

(7)

```
public class black07 {  
  
    public static void main(String den[]) {  
  
        int black = 5;  
  
        for (int sampan = 1; sampan <= black; sampan++) {  
  
            for (int j = 1; j <= black - sampan; j++) {  
  
                System.out.print(" ");  
  
            }  
  
            for (int j = 1; j <= sampan; j++) {  
  
                System.out.print(j);  
  
            }  
  
            System.out.print(sampan);  
  
            for (int j = sampan; j >= 1; j--) {  
  
                System.out.print(j);  
  
            }  
        }  
    }  
}
```

```
    System.out.println();  
}  
}  
}
```

(8)

```
public class black08 {  
  
    public static void main(String den[]) {  
  
        int black = 7;  
  
        for (int sampan = 1; sampan <= black; sampan++) {  
  
            for (int j = 1; j < sampan; j++) {  
  
                System.out.print(" ");  
            }  
  
            System.out.print(sampan + " " + (sampan + 1) + " " + (sampan + 2));  
  
            for (int j = 0; j <= sampan; j++) {  
  
                System.out.print("*");  
            }  
        }  
    }  
}
```

```
 }

System.out.println();

}

}

}

(9)
```

```
public class black09 {

public static void main(String den[]) {

int black = 5;

for (int sampan = 1; sampan <= black; sampan++) {

for (int j = 1; j < sampan; j++) {

System.out.print(" ");

}

for (int j = sampan; j <= (black * 2) - sampan; j++) {

System.out.print(sampan);
```

```
 }

System.out.println();

}

}

(10)
```

```
public class black10 {

public static void main(String den[]) {

int black = 5;

for (int sampan = 1; sampan <= black; sampan++) {

for (int j = sampan; j < black; j++) {

System.out.print(" ");

}

for (int j = 1; j <= sampan; j++) {

System.out.print(j);

}
```

```
}

System.out.print(black - sampan + 1);

for (int j = sampan; j >= 1; j--) {

    System.out.print(j);

}

System.out.println();

}

}

(11)
```

```
public class black11 {

    public static void main(String den[]) {

        int black = 5;

        for (int sampan = 1; sampan <= black; sampan++) {

            for (int j = black; j > sampan; j--) {
```

```
System.out.print(" ");

}

System.out.print(sampan);

for (int j = 1; j < sampan; j++) {

    System.out.print(" ");

}

System.out.println(sampan);

}

}

(12)

public class black12 {

    public static void main(String den[]) {

        int black = 5;

        for (int sampan = 1; sampan <= black; sampan++) {
```

```
for (int j = 1; j < sampan; j++) {  
  
    System.out.print(" ");  
  
}  
  
for (int j = sampan; j <= (black * 2 - sampan); j++) {  
  
    System.out.print(j);  
  
}  
  
System.out.println();  
  
}  
  
}  
  
(13)  
  
public class black13 {  
  
    public static void main(String den[]) {  
  
        int black = 5;  
  
        for (int sampan = 1; sampan <= black; sampan++) {
```

```
for (int j = 1; j < sampan * 2 - 1; j++) {  
    System.out.print(" ");  
}  
  
for (int j = black * 2 - (sampan * 2 - 1); j >= 1; j--) {  
    System.out.print(j);  
}  
  
System.out.println();  
}  
}  
}  
  
(14)  
  
public class black14 {  
  
    public static void main(String den[]) {  
        int black = 5;  
  
        for (int sampan = 1; sampan <= black; sampan++) {
```

```
for (int j = sampan; j > 1; j--) {  
  
    System.out.print(" ");  
  
}  
  
System.out.print(sampan + "" + (sampan + 1));  
  
for (int j = black; j > sampan; j--) {  
  
    System.out.print(" ");  
  
}  
  
System.out.println((sampan + 1) + "" + sampan);  
  
}  
  
}  
  
(15)
```

```
public class black15 {  
  
    public static void main(String den[]) {  
  
        int black = 5;
```

```
for (int sampan = 1; sampan <= black; sampan++) {  
  
    for (int j = sampan; j <= black; j++) {  
  
        System.out.print(sampan);  
  
    }  
  
    for (int j = 1; j <= (sampan * 2 - 1); j++) {  
  
        System.out.print(" ");  
  
    }  
  
    for (int j = sampan; j <= black; j++) {  
  
        System.out.print(sampan);  
  
    }  
  
    System.out.println();  
  
}  
  
}  
  
(16)
```

```
public class black16 {
```

```
public static void main(String den[]) {  
  
    int black = 5;  
  
    for (int sampan = 1; sampan <= black; sampan++) {  
  
        for (int j = sampan; j >= 1; j--) {  
  
            System.out.print(j);  
  
        }  
  
        for (int j = sampan; j < black * 2 - sampan; j++) {  
  
            System.out.print(" ");  
  
        }  
  
        for (int j = 1; j <= sampan; j++) {  
  
            System.out.print("*");  
  
        }  
  
        System.out.println();  
  
    }  
}
```

}

(17)

```
public class black17 {
```

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

```
        int black = 5;
```

```
        for (int sampan = 1; sampan <= black; sampan++) {
```

```
            for (int j = 1; j <= black - 1; j++) {
```

```
                System.out.print(sampan + " " + (black * 2 - sampan));
```

```
            }
```

```
            System.out.println();
```

```
        }
```

```
}
```

(18)

```
public class black18 {
```

```
public static void main(String den[]) {  
  
    int black = 5;  
  
    for (int sampan = 1; sampan <= black; sampan++) {  
  
        System.out.print(sampan);  
  
        for (int j = 1; j <= sampan; j++) {  
  
            System.out.print("*");  
  
        }  
  
        System.out.print(sampan);  
  
        for (int j = black; j >= sampan; j--) {  
  
            System.out.print("*");  
  
        }  
  
        System.out.println(black * 2 - sampan);  
  
    }  
  
}
```

(19)

```
public class black19 {  
  
    public static void main(String den[]) {  
  
        int black = 5;  
  
        for (int sampan = 1; sampan <= black; sampan++) {  
  
            System.out.print(sampan);  
  
            for (int j = sampan; j <= (black * 2 - 1); j++) {  
  
                System.out.print("*");  
  
            }  
  
            for (int j = 1; j < sampan; j++) {  
  
                System.out.print(" ");  
  
            }  
  
            System.out.println(black - sampan + 1);  
  
        }  
  
    }  
}
```

}

(20)

```
public class black20 {
```

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

```
        int black = 5;
```

```
        for (int sampan = 1; sampan <= black; sampan++) {
```

```
            for (int j = 1; j <= sampan; j++) {
```

```
                System.out.print(sampan);
```

```
            }
```

```
            for (int j = 1; j <= sampan; j++) {
```

```
                System.out.print("*");
```

```
            }
```

```
            for (int j = 1; j <= sampan; j++) {
```

```
                System.out.print(sampan);
```

```
        }
```

```
    System.out.println();  
}  
  
}  
  
}
```

(21)

```
public class black21 {  
  
    public static void main(String den[]) {  
  
        int black = 5;  
  
        for (int sampan = 1; sampan <= black; sampan++) {  
  
            for (int j = 0; j <= ((black * 2) - (sampan + 3)); j++) {  
  
                System.out.print("*");  
  
            }  
  
            System.out.print(sampan);  
  
            for (int j = sampan; j >= 1; j--) {  
  
                System.out.print("*");  
  
            }  
  
        }  
  
    }  
  
}
```

```
 }

System.out.println((black * 2) - (sampan + 2));

}

}

}

(22)
```

```
public class black22 {

public static void main(String den[]) {

int black = 5;

for (int sampan = 1; sampan <= black; sampan++) {

System.out.print("*");

for (int j = 1; j < sampan; j++) {

System.out.print(" ");

}

for (int j = sampan; j <= black * 2 - sampan; j++) {
```

```
System.out.print(sampan);  
}  
  
for (int j = sampan; j > 1; j--) {  
  
    System.out.print(" ");  
  
}  
  
System.out.println("*");  
}  
  
}
```

(23) public class black23 {

```
public static void main(String den[]) {  
    int black = 5;  
  
    for (int sampan = 1; sampan <= black; sampan++) {  
        System.out.print(sampan);  
    }  
}
```

```
for (int j = sampan; j <= black + 1; j++) {  
    System.out.print("*");  
}  
  
for (int j = 1; j < sampan; j++) {  
    System.out.print(" ");  
}  
  
System.out.println(sampan);  
}  
}  
}  
  
(24)  
  
public class black24 {  
  
    public static void main(String den[]) {  
        int black = 5;  
  
        for (int sampan = 1; sampan <= black; sampan++) {
```

```
System.out.print(sampan);

for (int j = 1; j <= sampan * 2 - 1; j++) {

    System.out.print("*");

}

for (int j = sampan; j <= black * 2 - sampan; j++) {

    System.out.print(sampan);

}

System.out.print(sampan);

System.out.println();

}

}

}

(25)
```

```
public class black25 {

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

```
int black = 5;

for (int sampan = 1; sampan <= black; sampan++) {

    for (int j = sampan; j < black; j++) {

        System.out.print("*");

    }

    for (int j = 1; j <= sampan * 2 - 1; j++) {

        System.out.print(black - sampan + 1);

    }

    for (int j = sampan; j <= black; j++) {

        System.out.print("*");

    }

    System.out.println();

}

}

}
```

(26)

```
public class black26 {  
  
    public static void main(String den[]) {  
  
        int black = 5;  
  
        for (int sampan = 1; sampan <= black; sampan++) {  
  
            for (int j = sampan; j <= black; j++) {  
  
                System.out.print(sampan);  
  
            }  
  
            for (int j = 1; j <= sampan; j++) {  
  
                System.out.print("*");  
  
            }  
  
            System.out.println();  
  
        }  
  
    }  
}
```

(27)

```
public class black27 {  
  
    public static void main(String den[]) {  
  
        int black = 5;  
  
        for (int sampan = 1; sampan <= black; sampan++) {  
  
            System.out.print(sampan);  
  
            for (int j = 1; j <= sampan; j++) {  
  
                System.out.print(" ");  
  
            }  
  
            for (int j = 1; j <= sampan; j++) {  
  
                System.out.print("*");  
  
            }  
  
            System.out.println();  
  
        }  
  
    }  
}
```

}

(28)

```
public class black28 {
```

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

```
        int black = 5;
```

```
        for (int sampan = 1; sampan <= black; sampan++) {
```

```
            for (int j = black; j >= sampan; j--) {
```

```
                System.out.print(j);
```

```
            }
```

```
            for (int j = 1; j <= sampan * 2 - 1; j++) {
```

```
                System.out.print("*");
```

```
            }
```

```
            for (int j = sampan; j <= black; j++) {
```

```
                System.out.print(j);
```

```
            }
```

```
    System.out.println();  
}  
}  
}
```

(29)

```
public class black29 {  
  
    public static void main(String den[]) {  
  
        int black = 5;  
  
        for (int sampan = 1; sampan <= black; sampan++) {  
  
            System.out.print(sampan + "*" + (sampan + 2));  
  
            for (int j = 1; j <= sampan + 2; j++) {  
  
                System.out.print("*");  
            }  
  
            System.out.println();  
        }  
    }  
}
```

```
}
```

```
}
```

(30)

```
public class black30 {
```

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

```
        int black = 5;
```

```
        for (int sampan = 1; sampan <= black; sampan++) {
```

```
            for (int j = 1; j < sampan; j++) {
```

```
                System.out.print(" ");
```

```
}
```

```
            for (int j = sampan; j <= black * 2 - sampan; j++) {
```

```
                System.out.print("*");
```

```
}
```

```
            for (int j = sampan; j >= 1; j--) {
```

```
                System.out.print(j);
```

}

System.out.println();

}

}

(31)

```
public class black31 {
```

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

```
int black = 5;
```

```
for (int sampan = 1; sampan <= black; sampan++) {
```

```
for (int j = sampan; j <= black; j++) {
```

```
System.out.print(sampan);
```

}

```
for (int j = 1; j < sampan * 2 - 1; j++) {
```

```
System.out.print(" ");
```

```
 }

for (int j = sampan; j <= black; j++) {

    System.out.print("*");

}

System.out.println();

}

}

}

(32)
```

```
public class black32 {

    public static void main(String den[]) {

        int black = 3;

        for (int sampan = 1; sampan <= black * 2 - 1; sampan++) {

            for (int j = 1; j <= (black * 2 - sampan + 2); j++) {

                System.out.print(j);

            }

        }

    }

}
```

```
 }

for (int j = black; j <= black + sampan + 1; j++) {

    System.out.print("*");

}

System.out.println(black - (black - 2) + sampan);

}

}

}

(33)
```

```
public class black33 {

    public static void main(String den[]) {

        int black = 4;

        for (int sampan = 1; sampan <= black; sampan++) {

            for (int j = sampan; j <= black + 1; j++) {

                System.out.print(" ");

            }

        }

    }

}
```

```
}

for (int j = 1; j <= sampan * 2 - 1; j++) {

    System.out.print("*");

}

System.out.println();

}

for (int sampan = 1; sampan < black; sampan++) {

    for (int j = 1; j <= sampan + 2; j++) {

        System.out.print(" ");

    }

    for (int j = sampan; j <= (black - 1) * 2 - sampan; j++) {

        System.out.print("*");

    }

    System.out.println();

}

}
```

}

(34)

```
public class black34 {
```

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

```
        int black = 3;
```

```
        for (int sampan = 1; sampan <= black; sampan++) {
```

```
            for (int j = 1; j <= 6 - sampan; j++) {
```

```
                System.out.print(" ");
```

```
}
```

```
        System.out.print(" * ");
```

```
        for (int j = 1; j <= (sampan * 2 - 1); j++) {
```

```
            System.out.print(sampan);
```

```
}
```

```
        System.out.print(" * ");
```

```
System.out.println();  
}  
  
for (int sampan = 2; sampan >= 1; sampan--) {  
  
    for (int j = 1; j <= 6 - sampan; j++) {  
  
        System.out.print(" ");  
  
    }  
  
    System.out.print(" * ");  
  
    for (int j = 1; j <= (sampan * 2 - 1); j++) {  
  
        System.out.print(sampan);  
  
    }  
  
    System.out.print(" * ");  
  
    System.out.println();  
}  
  
}
```

(35)

```
public class black35 {  
  
    public static void main(String den[]) {  
  
        int black = 5;  
  
        for (int sampan = 1, j = 1, k = 2; sampan <= black; sampan++, j +=  
2, k += 2) {  
  
            System.out.println(sampan + "*" + j + "*" + k);  
  
        }  
  
    }  
}
```

(36)

```
public class black36 {  
  
    public static void main(String den[]) {  
  
        int black = 3;
```

```
for (int sampan = 1; sampan <= black; sampan++) {  
  
    for (int j = sampan; j <= black; j++) {  
  
        System.out.print(j);  
  
    }  
  
    for (int j = 1; j <= sampan * 2 - 1; j++) {  
  
        System.out.print("*");  
  
    }  
  
    for (int j = black; j >= sampan; j--) {  
  
        System.out.print(j);  
  
    }  
  
    System.out.println();  
  
}  
  
for (int sampan = black - 1; sampan >= 1; sampan--) {  
  
    for (int j = sampan; j <= black; j++) {  
  
        System.out.print(j);  
  
    }  
}
```

```
for (int j = 1; j <= sampan * 2 - 1; j++) {  
    System.out.print("*");  
}  
  
for (int j = black; j >= sampan; j--) {  
    System.out.print(j);  
}  
System.out.println();  
}  
}  
}
```

## งานมอบหมายที่ 3

(1)

```
public class b1 {  
  
    public static void main(String args[]) {  
  
        int s1 = Integer.parseInt(args[0]);  
  
        int s2 = Integer.parseInt(args[1]);  
  
        int s3 = Integer.parseInt(args[2]);  
  
        int s4 = Integer.parseInt(args[3]);  
  
        System.out.println("Plus = " + (s1 + s2 + s3 + s4));  
  
        System.out.println("Minus = " + (s1 - s2 - s3 - s4));  
  
        System.out.println("Multiplied = " + (s1 * s2 * s3 * s4));  
  
        System.out.println("Divide = " + (s1 / s2 / s3 / s4));  
  
    }  
  
}
```

(2)

```
public class b2 {  
  
    public static void main(String args[]) {  
  
        byte b = 42;  
  
        char c = 'a';  
  
        short s = 1024;  
  
        int i = 50000;  
  
        double d = 0.1234;  
  
        b = (byte) (b * 2);  
  
        int a = c;  
  
        b = (byte) s;  
  
        long l = i;  
  
        float f = l;  
  
        double result = (f * b) + (i / c) - (d * s);  
    }  
}
```

```
System.out.println("boolean value = " + String.valueOf(true));  
  
System.out.println("byte value = " + b);  
  
System.out.println("char value = " + a);  
  
System.out.println("short value = " + s);  
  
System.out.println("Int value " + i);  
  
System.out.println("Long value " + l);  
  
System.out.println("Float value " + f);  
  
System.out.println("double value = " + result);  
  
}  
  
}  
  
(3)  
  
public class b3 {  
  
    public static void main(String args[]) {  
  
        int max = 0;
```

```
int min = 999;

int total = 0;

double average;

for (int i = 0; i < args.length; i++) {

    if (Integer.parseInt(args[i]) > max) {

        max = Integer.parseInt(args[i]);

    }

}

if (Integer.parseInt(args[i]) < min) {

    min = Integer.parseInt(args[i]);

}

total += Integer.parseInt(args[i]);

}

average = total / args.length;

System.out.println("max=" + max);

System.out.println("min=" + min);
```

```
System.out.println("total=" + total);

System.out.println("average=" + average);

}

}
```

## Keyword

DATA = 13	control = 18	Objects = 16	Unused = 2.
1. boolean	1. assert	1. abstract	1. const
2. byte	2. break	2. class	2. goto
3. char	3. case	3. extends	
4. double	4. catch	4. implements	
5. float	5. continue	5. import	
6. int	6. default	6. instanceof	
7. long	7. do	7. interface	
8. short	8. else	8. native	
9. final	9. finally	9. new	
10. static	10. for	10. package	
11. void	11. if	11. private	
12. Strictfp	12. return	12. protected	
13. transient	13. switch	13. public	
	14. synchronized	14. super	
	15. throw	15. this	
	16. throws	16. volatile	
	17. try		
	18. while		

  

1. abstract	7. Interest
2. See also	8. Singleton
3. enum	9. var
4. For a variable	10. record
5. For a class	11. yield
6. For a method	

## งานมอบหมายที่ 4

(1)

```
import java.io.*;
```

```
class one {
```

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

```
        BufferedReader stdin = new BufferedReader(new  
InputStreamReader(System.in));
```

```
        int i[] = new int[5];
```

```
        int plus = 0, Minus = 0, Multi = 0, Divide = 0;
```

```
        for (int j = 0; j < 5; j++) {
```

```
            i[j] = Integer.parseInt(stdin.readLine());
```

```
}
```

```
        for (int j = 0; j < 5; j++) {
```

```
            plus = i[0] + i[1] + i[2] + i[3] + i[4];
```

```
Minus = i[0] - i[1] - i[2] - i[3] - i[4];  
  
Multi = i[0] * i[1] * i[2] * i[3] * i[4];  
  
Divide = i[0] / i[1] / i[2] / i[3] / i[4];  
  
}  
  
System.out.println("plus = " + plus);  
  
System.out.println("Minus = " + Minus);  
  
System.out.println("Multi = " + Multi);  
  
System.out.println("Divide = " + Divide);  
  
}  
  
}  
  
(2)  
  
import java.io.*;  
  
public class two {  
  
    public static void main(String args[]) throws IOException {
```

```
BufferedReader stdin = new BufferedReader(new  
InputStreamReader(System.in));  
  
int a[] = new int[5];  
  
int b[] = new int[5];  
  
for (int i = 0; i < 5; i++) {  
  
    a[i] = Integer.parseInt(stdin.readLine());  
  
    b[i] = Integer.parseInt(stdin.readLine());  
  
}  
  
try {  
  
    for (int i = 0; i < 6; i++) {  
  
        System.out.println("result = " + a[i] / b[i]);  
  
    }  
  
} catch (ArrayIndexOutOfBoundsException e) {  
  
    System.out.println(e);  
  
}
```

```
}
```

```
}
```

(3)

```
import java.io.*;
```

```
class tree {
```

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

```
        BufferedReader stdin = new BufferedReader(new  
InputStreamReader(System.in));
```

```
        int a[] = new int[5];
```

```
        int b[] = new int[5];
```

```
        for (int i = 0; i < 5; i++) {
```

```
            a[i] = Integer.parseInt(stdin.readLine());
```

```
            b[i] = Integer.parseInt(stdin.readLine());
```

```
}
```

```
for (int i = 0; i < 5; i++) {  
  
    try {  
  
        System.out.println("result = " + a[i] / b[i]);  
  
    } catch (ArithmetricException e) {  
  
        System.out.println(e);  
  
    }  
  
}  
  
(4)
```

```
import java.io.*;
```

```
class four {  
  
    public static void main(String args[]) throws IOException {
```

```
BufferedReader stdin = new BufferedReader(new  
InputStreamReader(System.in));  
  
int i[] = new int[5];  
  
int max = 0;  
  
int min = 999;  
  
int tot = 0;  
  
double average;  
  
for (int j = 0; j < 5; j++) {  
  
    i[j] = Integer.parseInt(stdin.readLine());  
  
}  
  
for (int j = 0; j < 5; j++) {  
  
    if (i[j] > max) {  
  
        max = i[j];  
  
    }  
  
    if (i[j] < min) {  
}
```

```
min = i[j];  
  
}  
  
tot += i[j];  
  
}  
  
average = tot / i.length;  
  
System.out.println("max = " + max);  
  
System.out.println("min = " + min);  
  
System.out.println("total = " + tot);  
  
System.out.println("average = " + average);  
  
}  
  
}
```

## งานมอบหมายที่ 5

work\_5\_java\_true

โปรแกรมที่ 1 // 6 Primitive Data Type

```
class J0101 {
```

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

```
        boolean b = true;
```

```
        System.out.println("boolean = " + b);
```

```
        char y;
```

```
        y = 'a';
```

```
        System.out.println("character = " + y);
```

```
        byte c;
```

```
        c = 127;
```

```
        System.out.println("byte = " + c);
```

```
        short a;
```

```
        a = 32767;
```

```
        System.out.println("Short = " + a);
```

```
int x;  
  
x = 2147483647;  
  
System.out.println("Integer = " + x);  
  
long b;  
  
b = 9223372036854775807L;  
  
System.out.println("long = " + b);  
  
}  
  
}
```

ໂປຣແກຣມທີ 2 // if

```
import java.lang.*;  
  
class J0202 {  
  
    public static void main(String args[]) {  
  
        int x;  
  
        x = 6;  
  
        if (x > 5) System.out.println("more than 5"); else System.out.println(  
            "less than or equal 5")  
    }  
}
```

```
);

if (x > 10) System.out.println("more than 10"); else {

System.out.println("less than or equal 10");

}

Comparable a[] = new Comparable[5];

a[0] = new Integer(3);

a[1] = new Integer(10);

a[2] = "abc";

System.out.println(a[0] + " " + a[1] + " " + a[2]);

if (a[2].equals("abc")) {

System.out.println("equal");

}

if (a[0].compareTo(a[1]) < 0) System.out.print(a[0]);

if (a[1].compareTo(a[0]) > 0) System.out.print(a[0] + "" + a[1]);

if (a[0].compareTo(a[0]) == 0) System.out.print("equal");

System.out.print(a[0].compareTo(a[1]));
```

```
}
```

```
}
```

ໂປຣແກຣມທີ 3 // while

```
class J0205 {
```

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

```
        System.out.println("print 1 to 10 :: ");
```

```
        int i;
```

```
        i = -5;
```

```
        while (i <= 5) {
```

```
            try {
```

```
                i++;
```

```
                System.out.println((double)5/i);
```

```
                System.out.println(5/i);
```

```
}
```

```
            catch (ArithmeticException e) {
```

```
                System.out.println("may divide by zero");
```

```
}

}

int k = 0;

i = 0;

while (i < 5) {

    System.out.print(++k);

    k = k + (i++);

    System.out.print(k--);

}

}
```

ໂປຣແກຣມທີ 4 // class

```
class sub01 {

    void subx() {

        System.out.println("subx in sub01");

    }

}
```

```
}

class sub02 {

void subx() {

System.out.println("subx in sub02");

}

}

class J0404 extends sub02 {

j0404() {

super.subx(); // subx in sub02

this.subx(); // subx in main

}

public static void main(String args[]) {

sub01 x = new sub01();

System.out.println("main"); // main

x.subx(); // subx in sub01

j0404 y = new j0404();
```

```
}

void subx() {

    System.out.println("subx in main");

}

}
```

### ໂປຣແກຣມທີ 5 // BufferedReader

```
import java.io.*;

class J0701 {

    public static void main(String args[]) throws IOException {

        int i = 1;

        int tot = 0;

        String b;

        String[] fields;

        String patternStr = ",";

        FileReader fin = new FileReader("data.txt");

        BufferedReader bin = new BufferedReader(fin);
```

```
while ((b = bin.readLine()) != null) {  
  
    fields = b.split(patternStr);  
  
    System.out.println(i + " : " + fields[0]);  
  
    System.out.println("Name : " + fields[1]);  
  
    System.out.println("Salary : " + fields[2]);  
  
    System.out.println("Status : " + fields[3]);  
  
    tot = tot + Integer.parseInt(fields[2]);  
  
    i = i + 1;  
  
}  
  
System.out.println("Total : " + tot);  
  
fin.close();  
  
}  
  
}
```

ໂປຣແກຣມທີ 6 // BufferedReader , while , String

```
import java.io.*;  
  
import java.lang.*;
```

```
class J0702 {  
  
    public static void main(String args[]) throws IOException {  
  
        int i = 1;  
  
        String b;  
  
        String[] fields;  
  
        String patternStr = ",";  
  
        FileReader fin = new FileReader("data.txt");  
  
        BufferedReader bin = new BufferedReader(fin);  
  
        FileOutputStream fout = new FileOutputStream("data.htm");  
  
        BufferedOutputStream bout = new BufferedOutputStream(fout);  
  
        PrintStream pout = new PrintStream(bout);  
  
        pout.println("<body bgcolor=yellow><table border=1  
width=100%>");  
  
        while ((b = bin.readLine()) != null) {  
  
            fields = b.split(patternStr);  
  
            pout.println("<tr>");  
    }  
}
```

```
pout.println("<td>" + i + "</td>");

pout.println("<td>" + "ID = " + fields[0] + "</td>");

pout.println("<td>" + "Name = " + fields[1] + "</td>");

pout.println("<td>" + "Salary = " + fields[2] + "</td>");

pout.println("<td>" + "Status = " + fields[3] + "</td>");

pout.println("</tr>");

i = i + 1;

}

pout.println("</table></body>");

fin.close();

pout.close();

}

}
```

## โปรแกรมที่ 7 // BufferedReader

```
import java.io.*;  
  
class J0703 {
```

```
public static void main(String args[]) throws IOException {  
  
    int i = 0, d;  
  
    String b;  
  
    String[] fields;  
  
    String[] recs = { "", "", "" };  
  
    String patternStr = ":";  
  
    FileReader fin = new FileReader("data.txt");  
  
    BufferedReader bin = new BufferedReader(fin);  
  
    while ((b = bin.readLine()) != null) {  
  
        recs[i] = b;  
  
        i = i + 1;  
  
    }  
  
    fin.close();  
  
    FileOutputStream fout = new FileOutputStream("data.htm");  
  
    BufferedOutputStream bout = new BufferedOutputStream(fout);  
  
    PrintStream pout = new PrintStream(bout);
```

```
for (int j = 0; j < i; j++) {  
  
    fields = recs[j].split(patternStr);  
  
    pout.print(fields[0] + "," + fields[1] + ",");  
  
    d = Integer.valueOf(fields[2]).intValue() + 100;  
  
    pout.print(d);  
  
    pout.println("," + fields[3]);  
  
}  
  
pout.close();  
  
}  
  
}
```

ໂປຣແກຣມທີ 8 // BufferedReader , while

```
import java.io.*;  
  
class J0801 {  
  
    public static void main(String args[]) throws IOException {  
  
        int found = 0;  
  
        char buf;
```

```
String b, g = "";
String[] fields;
String patternStr = ",";
System.out.println("Wait id and end character with [x]");
buf = (char) System.in.read();
while (buf != 'x') {
    g = g + buf;
    buf = (char) System.in.read();
}
FileReader fin = new FileReader("data.txt");
BufferedReader bin = new BufferedReader(fin);
while ((b = bin.readLine()) != null) {
    fields = b.split(patternStr);
    if (fields[0].equals(g)) {
        System.out.println(fields[1]);
        found = 1;
    }
}
```

```
}

}

if (found == 0) System.out.println("Not found");

fin.close();

}
```

ໂປຣແກຣມທີ 8 // BufferedReader , while

```
import java.io.*;

class J0802 {

    public static void main(String args[]) throws IOException {
        int found = 0;

        String b, g = "";
        String[] fields;

        System.out.println("Wait string and enter");

        BufferedReader stdin = new BufferedReader(new
InputStreamReader(System.in));
```

```
g = stdin.readLine();

String patternStr = g;

FileReader fin = new FileReader("data.txt");

BufferedReader bin = new BufferedReader(fin);

while ((b = bin.readLine()) != null) {

    fields = b.split(patternStr);

    if (fields.length > 1) {

        fields = b.split(",");

        System.out.println(fields[0] + fields[1] + fields[2] + fields[3]);

        found = 1;

    }

}

if (found == 0) System.out.println("Not found");

fin.close();

}
```

ໂປຣແກຣມທີ 9 // BufferedReader , while

```
import java.io.*;  
  
class J0901 {  
  
    public static void main(String args[]) throws IOException {  
  
        int i = 0, t1, t2;  
  
        String b, status;  
  
        String fields[];  
  
        String[] recs1 = new String[10];  
  
        String[] recs2 = { "A,Active", "R,Retire" };  
  
        String patternStr = ",";  
  
        FileReader fin = new FileReader("data.txt");  
  
        BufferedReader bin = new BufferedReader(fin);  
  
        while ((b = bin.readLine()) != null) {  
  
            recs1[i] = b;  
  
            i = i + 1;  
  
        }  
    }  
}
```

```
fin.close();

t1 = i;

t2 = recs2.length;

for (int j = 0; j < t1; j++) {

fields = recs1[j].split(patternStr);

System.out.print(fields[0] + fields[1] + fields[2] + fields[3]);

status = fields[3];

for (int k = 0; k < t2; k++) {

fields = recs2[k].split(patternStr);

if (fields[0].equals(status)) {

System.out.println(fields[1]);

}

}

}

}

}
```

ໂປຣແກຣມທີ 10 // for

```
import java.lang.*;  
  
class J1002 {  
  
    public static void main(String args[]) {  
  
        String tmp, x[] = { "ac", "abc", "adb", "a", "aa", "acd", "a a", "a d" };  
  
        System.out.println("Before sorting");  
  
        prtlist(x);  
  
        for (int i = 1; i < x.length; i++) {  
  
            for (int j = x.length - 1; j >= i; j--) {  
  
                if (x[j - 1].compareTo(x[j]) > 0) {  
  
                    tmp = x[j];  
  
                    x[j] = x[j - 1];  
  
                    x[j - 1] = tmp;  
  
                }  
            }  
        }  
    }  
}
```

```
System.out.println("After sorting");
```

**prtlist(x);**

}

```
public static void prtlist(String[] x) {
```

```
for (int i = 0; i < x.length; i++) {
```

```
System.out.println(x[i]);
```

}

}

}

## work\_5\_java\_false

โปรแกรมที่ 1 // 6 Primitive Data Type

```
class J0101 // {
```

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

```
boolean b = true // ;
```

```
System.out.println("boolean = " + b);
```

```
char y;
```

```
y = 'a'; // ''  
  
System.out.println(character = + y); // " "  
  
byte c;  
  
c = 127;  
  
System.out.println("byte = " c); // +  
  
short a;  
  
a = 32767;  
  
System.out.println("Short = " + a) // ;  
  
int x;  
  
y = 2147483647; // x  
  
system.out.println("Integer = " + x); // System.out.println  
  
long b;  
  
b = 9223372036854775807L;  
  
System.out.println("long = " + a); // b  
  
}  
  
// }
```

ໂປຣແກຣມທີ 2 // if

```
import java.lang // .*;  
  
class J0202 {  
  
    public static void main(string args[]) { // String  
  
        int x;  
  
        x = 6 // ;  
  
        if (x > 5) System.out.println(more than 5); // " "  
        else System.out.println(  
            "less than or equal 5"  
        ) // ;  
  
        if (x > 10) System.out.println("more than 10"); else {  
            System.out.println("less than or equal 10");  
        }  
  
        Comparable a = new Comparable[5]; // []  
        a[0] = new Integer(3);  
        a[1] = new Integer(10);
```

```
a[2] = "abc";  
  
System.out.println(a[0] + " " + a[1] + " " + a[2]) //;  
  
if (a[2].equals("abc")) // {  
  
    System.out.println("equal");  
  
}  
  
if (a[0].compareTo(a[1]) < 0) System.out.print(a[0]);  
  
if (a[1].compareTo(a[0]) > 0) System.out.print(a[0] + "" + a[1]);  
  
if (a[0].compareTo(a[0]) == 0) System.out.print("equal");  
  
System.out.print(a[0].compareTo(a[1])); // )  
  
// }  
  
}
```

โปรแกรมที่ 3 // while

```
// class J0205 {  
  
    public static void main(String args[]) {  
  
        System.out.println("print 1 to 10 :: ") // ;  
  
        int i;
```

```
j = -5; // i

while (i <= 5) { // while

try {

i++; // i++;

System.out.println((double)5/i);

System.out.println(5/j); // 5/i

}

catch (ArithmeticException) { // e

System.out.println(may divide by zero); // " "

}

// }

int k = 0;

i = 0;

while (i < 5) {

System.out.print(++k);

k = k + (i++);
```

```
System.out.print(k--) // ;  
}  
}
```

ໂປຣແກຣມທີ 4 // class

```
class sub01 {  
    subx() { // void  
        System.out.println("subx in sub01") // ;  
    }  
}  
  
class sub02 // {  
    void subx() // {  
        System.out.println("subx in sub02") // ;  
    }  
}  
  
class J0404 sub02 { // extends
```

```
j0404() // {  
  
    super.subx();  
  
    this.subx();  
  
    // }  
  
public static void main(String args[]) {  
  
    sub01 x = new sub01();  
  
    System.out.println("main") // ;  
  
    x.subx();  
  
    j0404 y = new j0404();  
  
}  
  
void subx() // {  
  
    System.out.println("subx in main");  
  
}  
  
}  
  
โปรแกรมที่ 5 // BufferedReader  
  
import // java.io.*;
```

```
class J0701 // {  
  
    public static void main(String args[]) throws IOException // {  
  
        int i = 1 // ;  
  
        int tot = 0;  
  
        String b;  
  
        String[] fields;  
  
        String patternStr = ",";  
  
        FileReader fin = FileReader("data.txt"); // new  
  
        BufferedReader bin = new BufferedReader(fin);  
  
        while ((b = bin.readLine()) != null) {  
  
            fields = b.split(patternStr);  
  
            System.out.println(i + " : " + fields); // [0]  
  
            system.out.println("Name : " + fields[1]); // System.out.println  
  
            System.out.println("Salary : " + fields[2]);  
  
            System.out.println("Status : " fields[3]); // +  
  
            tot = tot + Integer.parseInt(fields[2]);  
        }  
    }  
}
```

```
i = i + 1;  
// }  
  
System.out.println("Total : " + tot);  
  
fin.close();  
} // }
```

ໂປຣແກຣມທີ 6 // BufferedReader , while , String

```
import java.io.* // ;  
  
import java.lang.* // ;  
  
class J0702 // {  
  
    public static void main(String args[]) throws IOException {  
  
        int i = 1;  
  
        String b;  
  
        String[] fields;  
  
        String patternStr = "," // ;  
  
        FileReader = new FileReader("data.txt"); // fin  
  
        BufferedReader = new BufferedReader(fin); // bin
```

```
FileOutputStream = new FileOutputStream("data.htm"); // fout  
  
BufferedOutputStream = new BufferedOutputStream(fout); // bout  
  
PrintStream = new PrintStream(bout); // pout  
  
pout.println("<body bgcolor=yellow><table border=1  
width=100%>");  
  
while ((b = bin.readLine()) != null) // {  
  
    fields = b.split(patternStr);  
  
    pout.println("<tr>");  
  
    pout.println("<td>" + i + "</td>");  
  
    pout.println("<td>" + "ID = " + fields[0] + "</td>");  
  
    pout.println("<td>" + "Name = " + fields[1] + "</td>");  
  
    pout.println("<td>" + "Salary = " + fields[2] + "</td>");  
  
    pout.println("<td>" + "Status = " + fields[3] + "</td>");  
  
    pout.println("</tr>");  
  
    i = i + 1;  
  
}
```

```
pout.println("</table></body>");

fin.close();

pout.close();

}

}
```

### ໂປຣແກຣມທີ 7 // BufferedReader

```
import java.io.* // ;

class J0703 // {

    public main(String args[]) throws IOException { // static void

        int i = 0, // d;

        String b;

        String[] fields // ;

        String[] = { "", "", "" }; // recs

        String patternStr = "," // ;

        FileReader fin = new FileReader("data.txt");

        BufferedReader = new BufferedReader(fin); // bin
```

```
((b = bin.readLine()) != null) { // while  
    recs[i] = b;  
  
    i = i + 1;  
  
} // }  
  
fin.close();  
  
FileOutputStream fout = new FileOutputStream("data.htm");  
  
BufferedOutputStream bout = new BufferedOutputStream(fout);  
  
PrintStream pout = new PrintStream(bout);  
  
for (int j = 0; j < i; j++) {  
  
    fields = recs[j].split(patternStr);  
  
    pout.print(fields[0] + "," + fields[1] + ",");  
  
    d = Integer.valueOf(fields[2]).intValue() + 100;  
  
    pout.print(d);  
  
    pout.println("," + fields[3]);  
  
}  
  
pout.close();
```

```
}
```

```
}
```

ໂປຣແກຣມທີ 8 // BufferedReader , while

```
import java.io.* // ;
```

```
class J0801 // {
```

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

```
int found = 0;
```

```
char // buf;
```

```
String b, g = "" // ;
```

```
String[] fields;
```

```
patternStr = ","; // String
```

```
System.out.println("Wait id and end character with [x]");
```

```
buf = (char) System.in.read();
```

```
while (buf != 'x') // {
```

```
g = g + buf;
```

```
buf = (char) System.in.read // ();
```

```
}
```

```
FileReader fin = new FileReader("data.txt");
```

```
BufferedReader bin = new BufferedReader(fin);
```

```
while ((b = bin.readLine()) != null) {
```

```
    fields = b.split(patternStr);
```

```
    if (fields[0].equals(g)) {
```

```
        System.out.println(fields); // [1]
```

```
        found = 1;
```

```
}
```

```
// }
```

```
if (found == 0) System.out.println("Not found");
```

```
fin.close();
```

```
}
```

```
}
```

ໂປຣແກຣມທີ 9 // BufferedReader , while

```
import java.io.* // ;
```

```
class J0802 // {  
  
    public static void main(String args[]) throws IOException {  
  
        int found // = 0;  
  
        String b, g = "" // ;  
  
        String[] fields;  
  
        System.out.println(Wait string and enter); // " "  
  
        BufferedReader = new BufferedReader(new  
InputStreamReader(System.in)); //  
  
        stdin  
  
        g = stdin.readLine();  
  
        String patternStr = g // ;  
  
        FileReader = new FileReader("data.txt"); // fin  
  
        BufferedReader = new BufferedReader(fin); // bin  
  
        ((b = bin.readLine()) != null) { // while  
  
            fields = b.split(patternStr);  
  
            if (fields.length > 1) {
```

```
fields = b.split(",");  
  
System.out.println(fields[0] + fields[1] + fields[2] + fields[3]);  
  
found = 1;  
  
}  
  
}  
  
if (found == 0) System.out.println("Not found");  
  
fin.close();  
  
}  
  
}
```

ໂປຣແກຣມທີ 10 // BufferedReader , while , for

```
import java.io.* // ;  
  
class J0901 {  
  
    public static void main(String args[]) throws IOException {  
  
        int i // = 0, t1, t2;  
  
        String b, status;  
  
        String fields[];
```

```
String[] = new String[10]; // recs1

String[] = { "A,Active", "R,Retire" }; // recs2

String patternStr = "," // ;

FileReader = new FileReader("data.txt"); // fin

BufferedReader = new BufferedReader(fin); // bin

while ((b = bin.readLine()) != null) // {

    recs1[i] = b;

    i = i + 1;

}

fin.close // ();

t1 = i;

t2 = recs2.length;

(int j = 0; j < t1; j++) { // for

    fields = recs1[j].split(patternStr);

    System.out.print(fields[0] + fields[1] + fields[2] + fields[3]);

    status = fields[3];
```

```
for (int k = 0; k < t2; k++) {  
  
    fields = recs2[k].split(patternStr);  
  
    if (fields[0].equals(status)) {  
  
        System.out.println(fields[1]);  
  
    }  
  
}  
  
}  
  
}  
  
}
```

งานมอบหมายที่ 6

```
import java.io.*;  
  
class aa{  
  
    static String data[][] = new String[3][3];  
  
    public static void aaa() throws IOException{
```

```
BufferedReader numid = new BufferedReader (new  
InputStreamReader(System.in));  
  
for(int i=0;i<3;i++){  
  
    for(int j=0;j<3;j++){  
  
        if(i == 0){  
  
            System.out.print("enter id : ");  
  
            data[i][j] = numid.readLine();  
  
        }  
  
        else if(i == 1){  
  
            System.out.print("enter name : ");  
  
            data[i][j] = numid.readLine();  
  
        }  
  
        else if(i == 2){  
  
            System.out.print("enter salary : ");  
  
            data[i][j] = numid.readLine();  
  
        }  
    }  
}
```

```
else{
    System.out.print("error");
}

}

}

}

}

class bb extends aa{

public static void bbb() {

try {
    aaa();
    int sum = 0 ;
    for(int i=0;i<3;i++){
}

System.out.println("-----");
for(int i=0;i<3;i++){
```

```
for(int j=0;j<3;j++){  
  
    if(i == 0){  
  
        System.out.print("| id = " + data[i][j]);  
  
    }  
  
    else if(i == 1){  
  
        System.out.print("| name = " + data[i][j]);  
  
    }  
  
    else if(i == 2){  
  
        System.out.print("| salary = " + data[i][j]);  
  
    }  
  
    else{  
  
        System.out.print("error");  
  
    }  
  
    if(i == 2){  
  
        sum +=Integer.parseInt(data[2][j]);  
  
    }  
}
```

```
    }

    System.out.println("|");

}

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

System.out.println("total = " + (sum)+ " $");

System.out.println("Social security = " + (500)+ " $");

System.out.println("tax 7% = " + (sum * 0.07)+ " $");

System.out.println("Net salary = " + ((sum*0.93)-500) + " $");

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

} catch (Exception e) {

}

}

class cc extends bb {

public static void main(String args[]) {

    bbb();
}
```

}

}