**package** 第三次作业;

**import** java.util.Scanner;

**public** **class** code3\_4 {

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

// @SuppressWarnings("resource")

**int** num = (**int**) (1 + Math.*random*() \* 12);

**if**(num == 1){

System.***out***.println("January");

}

**else** **if**(num == 2){

System.***out***.println("February");

}

**else** **if**(num == 3){

System.***out***.println("March");

}

**else** **if**(num == 4){

System.***out***.println("April");

}

**else** **if**(num == 5){

System.***out***.println("May");

}

**else** **if**(num == 6){

System.***out***.println("June");

}

**else** **if**(num == 7){

System.***out***.println("July");

}

**else** **if**(num == 8){

System.***out***.println("August");

}

**else** **if**(num == 9){

System.***out***.println("September");

}

**else** **if**(num == 10){

System.***out***.println("October");

}

**else** **if**(num == 11){

System.***out***.println("November");

}

**else** **if**(num == 12){

System.***out***.println("December");

}

}

}

**package** 第三次作业;

**import** java.util.Scanner;

**public** **class** code3\_9 {

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

// @SuppressWarnings("resource")

Scanner input = **new** Scanner(System.***in***);

System.***out***.print("Enter the first 9 digits of an ISBN as integer: ");

String str = input.next();

**int** ans = 0;

**for** (**int** i = 0; i < 9; i++) {

**int** temp = (**int**) (str.charAt(i) - '0');

ans += temp \* (i + 1);

}

ans %= 11;

**if** (ans == 10) {

str += "X";

} **else** {

str += ans;

}

System.***out***.println("The ISBN-10 number is " + str);

}

}

**package** 第三次作业;

**import** java.util.Scanner;

**public** **class** code3\_15 {

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

Scanner input = **new** Scanner(System.***in***);

**int** ans = (**int**) (100 + Math.*random*() \* 900);

// System.out.println(ans);

**int** temp = input.nextInt();

**if** (temp == ans) {

System.***out***.println(10000);

} **else** {

**int**[] vis = **new** **int**[10];

vis[ans % 10] = 1;

vis[ans / 100] = 1;

vis[ans / 10 % 10] = 1;

**int** judge = 0;

**if** (vis[temp % 10] == 1)

judge++;

**if** (vis[temp / 100] == 1)

judge++;

**if** (vis[temp / 10 % 10] == 1)

judge++;

**if** (judge == 3) {

System.***out***.println(3000);

} **else** **if** (judge == 1) {

System.***out***.println(1000);

} **else** {

System.***out***.println(0);

}

}

}

}

**package** 第三次作业;

**import** java.util.Scanner;

**public** **class** code3\_19 {

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

Scanner input = **new** Scanner(System.***in***);

**double** num1 = input.nextDouble();

**double** num2 = input.nextDouble();

**double** num3 = input.nextDouble();

**if** (num1 + num2 <= num3 || num1 + num3 <= num2 || num2 + num3 <= num1) {

System.***out***.println("error");

} **else** {

System.***out***.println(num1 + num2 + num3);

}

}

}

**package** 第三次作业;

**import** java.util.Scanner;

**public** **class** code3\_21 {

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

Scanner input = **new** Scanner(System.***in***);

System.***out***.print("Enter year: (e.g., 2012): ");

**int** year = input.nextInt();

System.***out***.print("Enter month: 1-12: ");

**int** m = input.nextInt();

System.***out***.print("Enter the day of the month: 1-31: ");

**int** day = input.nextInt();

**if** (m == 1) {

m = 13;

year -= 1;

} **else** **if** (m == 2) {

m = 14;

year -= 1;

}

**int** j = year / 100;

**int** k = year % 100;

**int** h = (day + 26 \* (m + 1) / 10 + k + k / 4 + j / 4 + 5 \* j) % 7;

**if**(h==0){

System.***out***.println("Day of the week is Saturday");

}

**else** **if**(h==1){

System.***out***.println("Day of the week is Sunday");

}

**else** **if**(h==2){

System.***out***.println("Day of the week is Monday");

}

**else** **if**(h==3){

System.***out***.println("Day of the week is Tuesday");

}

**else** **if**(h==4){

System.***out***.println("Day of the week is Wednesday");

}

**else** **if**(h==5){

System.***out***.println("Day of the week is Thursday");

}

**else** **if**(h==6){

System.***out***.println("Day of the week is Friday");

}

}

}

**package** 第三次作业;

**import** java.util.Scanner;

**public** **class** code3\_22 {

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

**double** eps = 0.00000001;

Scanner input = **new** Scanner(System.***in***);

System.***out***.print("Enter a point with two coordinates: ");

**double** x = input.nextDouble();

**double** y = input.nextDouble();

**double** ans = Math.*sqrt*(x \* x + y \* y);

**if** (ans - 10.0 < eps) {

System.***out***.println("point (" + x + " " + y + ") is in the circle");

} **else** {

System.***out***.println("point (" + x + " " + y + ") is not in the circle");

}

}

}

**package** 第三次作业;

**import** java.util.Scanner;

**public** **class** code3\_23 {

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

Scanner input = **new** Scanner(System.***in***);

System.***out***.print("Enter a point with two coordinates: ");

**double** x = input.nextDouble();

**double** y = input.nextDouble();

**if** (x < 5.0 && x > -5.0 && y < 2.5 && y > -2.5) {

System.***out***.println("Point (" + x + " " + y + ") is in the rectangle");

} **else** {

System.***out***.println("Point (" + x + " " + y + ") is not in the rectangle");

}

}

}

**package** 第三次作业;

**public** **class** code3\_24 {

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

**int** num1 = (**int**) (1 + Math.*random*() \* 13);

**int** num2 = (**int**) (1 + Math.*random*() \* 4);

String[] str = **new** String[14];

str[1] = "Ace";

str[2] = "2";

str[3] = "3";

str[4] = "4";

str[5] = "5";

str[6] = "6";

str[7] = "7";

str[8] = "8";

str[9] = "9";

str[10] = "10";

str[11] = "Jack";

str[12] = "Queen";

str[13] = "Kind";

String[] cloth = **new** String[5];

cloth[1] = "Clubs";

cloth[2] = "Diamonds";

cloth[3] = "Hearts";

cloth[4] = "Spades";

System.***out***.println("The card you picked is "+str[num1]+" of "+cloth[num2]);

}

}

**package** 第三次作业;

**import** java.util.Scanner;

**public** **class** code3\_27 {

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

Scanner input = **new** Scanner(System.***in***);

System.***out***.print("Enter a point's x- and y-coordinates: ");

**double** x = input.nextDouble();

**double** y = input.nextDouble();

**double** maxy = -x / 2.0 + 100.0;

**if** (x > 0 && x < 200 && y > 0 && y < maxy) {

System.***out***.println("The point is in the triangle");

} **else** {

System.***out***.println("The point is not in the triangle");

}

}

}

**package** 第三次作业;

**import** java.util.Scanner;

**public** **class** code3\_28 {

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

Scanner input = **new** Scanner(System.***in***);

System.***out***.print("Enter r1's cnter x-, y-coordinates, width, and height: ");

**double** x1 = input.nextDouble();

**double** y1 = input.nextDouble();

**double** w1 = input.nextDouble();

**double** h1 = input.nextDouble();

System.***out***.print("Enter r2's cnter x-, y-coordinates, width, and height: ");

**double** x2 = input.nextDouble();

**double** y2 = input.nextDouble();

**double** w2 = input.nextDouble();

**double** h2 = input.nextDouble();

**if** (x2 + w2 <= x1 + w1 && x2 - w2 >= x1 - w1 && y2 + h2 <= y1 + h1 && y2 - h2 >= y1 - h1) {

System.***out***.println("r2 is inside r1");

} **else** **if** (x2 + w2 <= x1 - w1 || x2 - w2 >= x1 + w1 || y2 + h2 <= y1 - h1 || y2 - h2 >= y1 + h1) {

System.***out***.println("r2 does not overlap r1");

} **else** {

System.***out***.println("r2 overlaps r1");

}

}

}

**package** 第三次作业;

**import** java.util.Scanner;

**public** **class** code3\_29 {

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

Scanner input = **new** Scanner(System.***in***);

System.***out***.print("Enter circle1's cnter x-, y-coordinates, and radius: ");

**double** x1 = input.nextDouble();

**double** y1 = input.nextDouble();

**double** r1 = input.nextDouble();

System.***out***.print("Enter circle2's cnter x-, y-coordinates, and radius: ");

**double** x2 = input.nextDouble();

**double** y2 = input.nextDouble();

**double** r2 = input.nextDouble();

**double** dis = Math.*sqrt*((x1 - x2) \* (x1 - x2) + (y1 - y2) \* (y1 - y2));

**if**(dis<=Math.*abs*(r1-r2)){

System.***out***.println("circle2 is inside circle1");

}

**else** **if**(dis<=r1+r2){

System.***out***.println("circle2 overlap circle1");

}

**else**{

System.***out***.println("circle2 does not overlap circle1");

}

}

}

**package** 第三次作业;

**public** **class** code5\_7 {

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

**double** ans = 10000;

**for** (**int** i = 1; i <= 10; i++) {

ans \*= 1.05;

}

System.***out***.println(ans);

}

}

**package** 第三次作业;

**import** java.util.Scanner;

**public** **class** code5\_17 {

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

Scanner input = **new** Scanner(System.***in***);

System.***out***.print("Enter the number of line: ");

**int** n = input.nextInt();

**for** (**int** i = 0; i < n; i++) {

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

**if** (j >= n - i && j <= n + i) {

**if** (j < n) {

System.***out***.print(n - j + 1 + " ");

} **else** {

System.***out***.print(j - n + 1 + " ");

}

}

**else**{

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

}

}

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

}

}

}

**package** 第三次作业;

**public** **class** code5\_19 {

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

**for** (**int** i = 0; i <= 7; i++) {

**for** (**int** j = 1; j <= 15; j++) {

**if** (j >= 8 - i && j <= 8 + i) {

System.***out***.printf("%4d",(**int**)Math.*pow*(2, i - Math.*abs*(8 - j)));

}

**else**{

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

}

}

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

}

}

}

**package** 第三次作业;

**import** java.util.Scanner;

**public** **class** code5\_21 {

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

Scanner input = **new** Scanner(System.***in***);

System.***out***.print("Loan Amout: ");

**double** loan = input.nextDouble();

System.***out***.print("Number of Year: ");

**double** year = input.nextDouble();

**double** up = 0.00125;

System.***out***.println("Interest Rate\tMonthly Payment\tTotal Payment\n");

**for** (**double** i = 0.05; i <= 0.081; i += up) {

System.***out***.printf("%.3f%%\t\t", i \* 100);

**double** mon\_loan = loan \* (i / 12.0) / (1.0 - 1.0 / Math.*pow*((1.0 + i / 12.0), year \* 12.0));

System.***out***.printf("%.2f\t\t", mon\_loan);

System.***out***.printf("%.2f\n", mon\_loan \* year \* 12);

}

}

}

**package** 第三次作业;

**import** java.util.Scanner;

**public** **class** code5\_22 {

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

Scanner input = **new** Scanner(System.***in***);

System.***out***.print("Loan Amount: ");

**double** loan = input.nextDouble();

System.***out***.print("Number of Year: ");

**int** year = input.nextInt();

System.***out***.print("Annual Interest Rate: ");

**double** rate = input.nextDouble();

rate /= 100.0;

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

**double** mon\_loan = loan \* (rate / 12.0) / (1.0 - 1.0 / Math.*pow*((1.0 + rate / 12.0), year \* 12.0));

System.***out***.printf("Monthly Payment: %.2f\n", mon\_loan);

System.***out***.printf("Total Payment: %.2f\n", mon\_loan \* 12.0 \* year);

**double** Balance = loan;

**double** Principal, interest;

System.***out***.println("Patment#\tInterest\tPrincipal\tBalance\n");

**for** (**int** i = 1; i <= year \* 12; i++) {

interest = rate / 12.0 \* Balance;

Principal = mon\_loan - interest;

Balance = Balance - Principal;

System.***out***.printf("%d\t\t%.2f\t\t%.2f\t\t%.2f\n", i, interest, Principal, Balance);

}

}

}

**package** 第三次作业;

**public** **class** code5\_25 {

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

**for** (**int** k = 10000; k <= 100000; k += 10000) {

**double** ans = 0;

**double** temp = 1.0;

**for** (**int** i = 1; i <= k; i++) {

ans += temp / (2 \* i - 1);

temp \*= -1.0;

}

System.***out***.println(ans \* 4);

}

}

}

**package** 第三次作业;

**public** **class** code5\_26 {

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

**for** (**int** k = 10000; k <= 100000; k += 10000) {

**double** ans = 1.0;

**double** temp = 1;

**for** (**int** i = 1; i <= k; i++) {

temp \*= i;

ans += (1.0 / temp);

}

System.***out***.println(ans);

}

}

}

**package** 第三次作业;

**public** **class** code5\_27 {

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

**int** Count = 0;

**int** ans = 0;

**for** (**int** i = 101; i <= 2100; i++) {

**if** (i % 400 == 0 || i % 4 == 0 && i % 100 != 0) {

Count++;

ans++;

System.***out***.printf("%4d ", i);

**if** (Count == 10) {

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

Count = 0;

}

}

}

System.***out***.println("\nThe number of leap year: " + ans);

}

}

**package** 第三次作业;

**import** java.util.Scanner;

**public** **class** code5\_28 {

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

Scanner input = **new** Scanner(System.***in***);

System.***out***.print("The year is : ");

**int** year = input.nextInt();

System.***out***.print("The first day is: ");

**int** day = input.nextInt();

String[] str = { "Sunday", "Monday", "Tuesday", "Wednesday", "Thursday", "Friday", "Saturday" };

System.***out***.println("January 1, " + year + " is " + str[day]);

day += 31;

System.***out***.println("February 1, " + year + " is " + str[day % 7]);

**int** num = 0;

**if** (year % 400 == 0 || year % 4 == 0 && year % 100 != 0) {

num = 29;

} **else** {

num = 28;

}

day += num;

System.***out***.println("March 1, " + year + " is " + str[day % 7]);

day += 31;

System.***out***.println("April 1, " + year + " is " + str[day % 7]);

day += 30;

System.***out***.println("May 1, " + year + " is " + str[day % 7]);

day += 31;

System.***out***.println("June 1, " + year + " is " + str[day % 7]);

day += 30;

System.***out***.println("July 1, " + year + " is " + str[day % 7]);

day += 31;

System.***out***.println("August 1, " + year + " is " + str[day % 7]);

day += 31;

System.***out***.println("September 1, " + year + " is " + str[day % 7]);

day += 30;

System.***out***.println("October 1, " + year + " is " + str[day % 7]);

day += 31;

System.***out***.println("November 1, " + year + " is " + str[day % 7]);

day += 30;

System.***out***.println("December 1, " + year + " is " + str[day % 7]);

}

}

**package** 第三次作业;

**import** java.security.Principal;

**public** **class** code5\_29 {

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

**int** num1 = (**int**) (Math.*random*() \* 9 + 1);

**int** num2 = (**int**) (Math.*random*() \* 9 + 1);

**while** (num2 == num1) {

num2 = (**int**) (Math.*random*() \* 9 + 1);

}

System.***out***.printf("%d%d\n",num1,num2);

}

}

**package** 第三次作业;

**public** **class** code5\_33 {

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

**for** (**int** i = 2; i <= 10000; i++) {

**int** sum = 0;

**for** (**int** j = 1; j <= i / 2; j++) {

**if** (i % j == 0) {

sum += j;

}

}

//System.out.println(sum);

**if** (sum == i) {

System.***out***.println(i);

}

}

}

}

**package** 第三次作业;

**import** java.util.Scanner;

**public** **class** code5\_36 {

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

// @SuppressWarnings("resource")

Scanner input = **new** Scanner(System.***in***);

System.***out***.print("Enter the first 9 digits of an ISBN as integer: ");

String str = input.next();

**int** ans = 0;

**for** (**int** i = 0; i < 9; i++) {

**int** temp = (**int**) (str.charAt(i) - '0');

ans += temp \* (i + 1);

}

ans %= 11;

**if** (ans == 10) {

str += "X";

} **else** {

str += ans;

}

System.***out***.println("The ISBN-10 number is " + str);

}

}

**package** 第三次作业;

**import** java.util.Scanner;

**public** **class** code5\_37 {

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

Scanner input = **new** Scanner(System.***in***);

System.***out***.print("Enter the decimal numeral: ");

**int** num = input.nextInt();

**int**[] digits = **new** **int**[65];

**int** tot = 0;

**while** (num > 0) {

digits[++tot] = num % 2;

num /= 2;

}

**for** (**int** i = tot; i >= 1; i--) {

System.***out***.print(digits[i]);

}

}

}

**package** 第三次作业;

**import** java.util.Scanner;

**public** **class** code5\_38 {

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

Scanner input = **new** Scanner(System.***in***);

System.***out***.print("Enter the decimal numeral: ");

**int** num = input.nextInt();

**int**[] digits = **new** **int**[65];

**int** tot = 0;

**while** (num > 0) {

digits[++tot] = num % 8;

num /= 8;

}

**for** (**int** i = tot; i >= 1; i--) {

System.***out***.print(digits[i]);

}

}

}

**package** 第三次作业;

**import** java.util.Scanner;

**public** **class** code5\_45 {

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

Scanner input = **new** Scanner(System.***in***);

System.***out***.print("Enter 10 number: ");

**double** sum = 0;

**double** sum2 = 0;

**for** (**int** i = 1; i <= 10; i++) {

**double** num;

num = input.nextDouble();

sum += num;

sum2 += num \* num;

}

System.***out***.printf("The mean is %.2f\n", sum / 10);

System.***out***.printf("The standard devition is %f\n", Math.*sqrt*((sum2 - (sum \* sum / 10.0)) / 9.0));

}

}