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| **2019년 9월 04일 실습보고서** |
| **학번 : 201810754, 이름 : 조윤직** |
| **실습자료1 : [Error.java]고치기** |
| **소스코드** |
| **package** software.com.konkuk;  **public** **class** Errors  {  //대소문자 주의  **public** **static** **void** main(String[] args) {  System.***out***.println("이 프로그램은 많은 오류를 가지고 있다.");  System.***out***.println("그러나 프로그램이 이 문장을 출력된다면");  System.***out***.println("모든 오류를 고친 것이다.");  }  } |
| **실행결과** |
| 스크린샷이(가) 표시된 사진  자동 생성된 설명 |
| **실습자료2 : 변수 및 상수 선언하기** |
| **소스코드** |
| **package** software.com.konkuk;  **public** **class** Myinfo {  **public** **static** **void** main(String[] args) {  **final** String stu\_num ="201810754";  String stu\_name ="조윤직";  **byte** stu\_age=20;  **double** stu\_grade = 3.2;  System.***out***.println("학번 : "+stu\_num);  System.***out***.println("이름 : "+stu\_name);  System.***out***.println("나이 : "+stu\_age);  System.***out***.println("학점 : "+stu\_grade);  }  } |
| **실행결과** |
| 스크린샷이(가) 표시된 사진  자동 생성된 설명 |

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| **2019년 9월 9일 실습보고서** |
| **학번 : 201810754, 이름 : 조윤직** |
| **실습자료1 : [입력 받기]-Scanner** |
| **소스코드** |
| package konkuk.sw;  import java.util.Scanner;  public class TestMain {  public static void lab01() {  System.***out***.println("첫번째 실습");  // int a =65;  // System.out.println((char)a);  // System.out.printf("%c\n",a);  System.***out***.println("학번 이름 나이 주소를 공백으로 띄어서 입력 하세요.");  Scanner scanner = new Scanner(System.***in***);  String stu\_num = scanner.next();  String stu\_name = scanner.next();  int stu\_age = scanner.nextInt();  //nextline은 이전에 엔터를 입력 받았을 경우 입력을 받지않고 끝나버리기 때문에 엔터를 한번 빼주어야함 scanner.next();  String stu\_adr = scanner.nextLine();  System.***out***.println("학번 : "+stu\_num);  System.***out***.println("이름 : "+stu\_name);  System.***out***.println("나이 : "+stu\_age);  System.***out***.println("주소 : "+stu\_adr); }    public static void main(String[] args) {  // **TODO** Auto-generated method stub  System.***out***.println("201810754 조윤직");  //lab01는 정적 멤버이므로 객체생성 전에도 클래스 정보만 있다면 사용할수 있다.  *lab01*();  }  } |
| **실행결과** |
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| **실습자료2 : [색 변경하기]- 비트연산** |
| **소스코드** |
| package konkuk.sw;  import java.util.Scanner;  public class TestMain {    public static void lab02() {  System.***out***.println("두번째 실습");  int rgb = 0xffffff00; //두개씩 알파레드그린블루 (255,255,255,0) =>노란색  String strrgb =Integer.*toBinaryString*(rgb);  System.***out***.println("현재 색상 : " +strrgb);  int rgb2 = 0xffff00ff;  strrgb =Integer.*toBinaryString*(rgb & rgb2);  System.***out***.println("변경 색상 : " +strrgb);  }  public static void main(String[] args) {  // **TODO** Auto-generated method stub    System.***out***.println("201810754 조윤직");  *lab02*();  }  } |
| **실행결과** |
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| **실습자료3 : [대소문자 체크]** |
| **소스코드** |
| package konkuk.sw;  import java.util.Scanner;  public class TestMain {    public static void lab03() {  Scanner scan = new Scanner(System.***in***);  String str1 =scan.next();  char a = str1.charAt(0);  if(a>='a' && a<='z')  System.***out***.println("소문자 입니다");  else if(a>='A' && a<='Z')  System.***out***.println("대문자 입니다");  else if(a<='9' && a>= '0')  System.***out***.println("숫자입니다");  else  System.***out***.println("특수문자 입니다");  }  public static void main(String[] args) {  // **TODO** Auto-generated method stub    System.***out***.println("201810754 조윤직");  *lab03*();  }  } |
| **실행결과** |
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| **2019년 9월 11일 실습보고서** |
| **학번 : 201810754, 이름 : 조윤직** |
| **실습자료1 : [가위 바위 보]** |
| **소스코드** |
| package software.java0911;  import java.util.Random;  import java.lang.Math;  import java.util.Scanner;  public class testmain {    public static void lab01() {  //import java.util.Random;  //-2123123312~ 214743647 숫자 하나반환  Random r =new Random();  //int com =Math.abs(r.nextInt()%3)+1;  int com = r.nextInt(3)+1;  Scanner scanner = new Scanner(System.***in***);    System.***out***.println("가위 바위 보 중에 선택 하세요(가위 :1, 바위 :2 ,보 : 3) : ");  int user = scanner.nextInt();  System.***out***.println("컴퓨터("+com+"),사용자("+user+")");  if(user ==com )  System.***out***.println("비겼습니다.\n");  else  switch(user -com) {  case -2:  case 1:  System.***out***.println("이겼습니다 \n");  break;  case 2:  case -1:  System.***out***.println("졌습니다 \n");  break;    }  }  public static void main(String[] args) {  // **TODO** Auto-generated method stub  System.***out***.println("201810754 조윤직");  *lab01*();  }  } |
| **실행결과** |
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| **실습자료1-2 : [가위 바위 보] 가위바위 보 반복하기** |
| **소스코드** |
| package software.java0911;  import java.util.Random;  import java.lang.Math;  import java.util.Scanner;  public class testmain {    public static void lab01() {  //import java.util.Random;  //-2123123312~ 214743647 숫자 하나반환  Random r =new Random();  //int com =Math.abs(r.nextInt()%3)+1;  int com,user;  char a;  Scanner scanner = new Scanner(System.***in***);  do {  System.***out***.println("가위 바위 보 중에 선택 하세요(가위 :1, 바위 :2 ,보 : 3) : ");  user = scanner.nextInt();  com = r.nextInt(3)+1;  System.***out***.println("컴퓨터("+com+"),사용자("+user+")");  if(user ==com )  System.***out***.println("비겼습니다.\n");  else  switch(user -com) {  case -2:  case 1:  System.***out***.println("이겼습니다 \n");  break;  case 2:  case -1:  System.***out***.println("졌습니다 \n");  break;    }  System.***out***.println("종료 하시겠습니까?(종료 :n) :");  String str1 =scanner.next();  a = str1.charAt(0);  }while(a != 'n'); //string을 사용했을 경우 answer.equals("no") 문자열 비교        }  public static void main(String[] args) {  // **TODO** Auto-generated method stub  System.***out***.println("201810754 조윤직");  *lab01*();  }  } |
| **실행결과** |
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| **실습자료3 : [패스워드 입력] .equals()문** |
| **소스코드** |
| package software.java0911;  import java.util.Random;  import java.lang.Math;  import java.util.Scanner;  public class testmain {  public static void lab02()  {  String password ="greenjoa";  String input;  Scanner scanner = new Scanner(System.***in***);  for(int i = 0 ; i < 3; i++) {  System.***out***.println("비밀 번호를 입력하세요");  input = scanner.next();  if(input.equals(password)) {  System.***out***.println("환영합니다.\n");  break;  }  else  System.***out***.println("틀린 암호 입니다\n"+(i+1)+"번째 틀렸습니다. (3번 틀릴경우 종료)" );  if(i == 2)  System.***out***.println("접속을 거부 합니다.");    }    }  public static void main(String[] args) {  // **TODO** Auto-generated method stub  System.***out***.println("201810754 조윤직");  *lab02*();  }  } |
| **실행결과** |
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| **실습자료4 : [패스워드 입력] .equals()문** |
| **소스코드** |
| package software.java0911;  import java.util.Random;  import java.lang.Math;  import java.util.Scanner;  public class testmain {  public static void lab03()  {  String input;  int leng;  Scanner scanner = new Scanner(System.***in***);  System.***out***.println("한 줄의 문장을 입력하세요 : ");  input = scanner.nextLine();  leng =input.length();  for(int i=0 ; i < leng ; i++) {  char a = input.charAt(i);  if(a == '\t' || a==' ')  leng--;  }  System.***out***.println("글자들의 수: " + leng);  }  public static void main(String[] args) {  // **TODO** Auto-generated method stub  System.***out***.println("201810754 조윤직");  *lab03*();  }  } |
| **실행결과** |
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| **2019년 9월 16일 실습보고서** |
| **학번 : 201810754, 이름 : 조윤직** |
| **실습자료1 : [로또 번호 생성하기]** |
| **소스코드** |
| package java\_0916;  import java.util.Random;  public class TestMain {  public static void lab01() {  //실습 1;  Random r =new Random();  int num[] =new int [6];  for(int i=0;i<num.length;i++) {  num[i]= r.nextInt(45)+1;  for(int j=0 ; j < i ;j++) {  if(num[j]==num[i]) {  i--;  break;  }  }  }  System.***out***.print("로또 번호 :");  for(int i : num)  System.***out***.print(i + " ");    }  public static void main(String[] args) {  // **TODO** Auto-generated method stub  System.***out***.println("201810754 조윤직");  *lab01*();  }  } |
| **실행결과** |
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| **실습자료1-2 : [로또 번호 정렬해서 출력]** |
| **소스코드** |
| package java\_0916;  import java.util.Random;  public class TestMain {  public static void lab01() {  //실습 1-2;  Random r =new Random();  int num[] =new int [6];  for(int i=0;i<num.length;i++) {  num[i]= r.nextInt(45)+1;  for(int j=0 ; j < i ;j++) {  if(num[j]==num[i]) {  i--;  break;  }  }  }  for(int i=0; i<num.length;i++)  for(int j=i+1; j<num.length;j++) {  if(num[i] >num[j]) {  int temp = num[j];  num[j]= num[i];  num[i]=temp;  }  }  System.***out***.print("로또 번호 :");  for(int i : num)  System.***out***.print(i + " ");    }    public static void main(String[] args) {  // **TODO** Auto-generated method stub  System.***out***.println("201810754 조윤직");  *lab01*();  }  } |
| **실행결과** |
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| **2019년 9월 18일 실습보고서** |
| **학번 : 201810754, 이름 : 조윤직** |
| **실습자료1 : [실습 성적 총점]** |
| **소스코드** |
| package java\_0918;  public class TestMain {  public static void lab01() {  String[] name = {"홍길동","고길동","김길동","이길동"};  int score[][]= new int [][] {  {10,20,30,0},  {20,30,40,0},  {10,25,30,0},  {30,30,40,0}  };  for(int i=0 ;i<score.length;i++) {  for(int j =0;j <score[i].length-1;j++)  score[i][3] +=score[i][j];  }  for(int i=0;i<score.length;i++) {  System.***out***.print(name[i]+ " : ");  for(int j=0;j<score[i].length;j++) {  System.***out***.print(score[i][j]+" ");  }  System.***out***.println();  }  } public static void main(String[] args) {  // **TODO** Auto-generated method stub  System.***out***.println("201810754 조윤직");  *lab01*();    }  } |
| **실행결과** |
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| **실습자료2 : [성적 총점 랭크]** |
| **소스코드** |
| package java\_0918;  public class TestMain {  public static void lab02() {  String[] name = {"홍길동","고길동","김길동","이길동"};  int score[][]= new int [][] {  {10,20,30,0},  {20,30,40,0},  {10,25,30,0},  {30,30,40,0}  };    for(int i=0 ;i<score.length;i++) {  for(int j =0;j <score[i].length-1;j++)  score[i][3] +=score[i][j];  }  //랭크 정렬 #1  int rank[] =new int [] {1,2,3,4};  for(int i=0; i<score.length-1;i++) {  for(int j = 0; j< score.length;j++ ) {  if(rank[i]<rank[j] && score[i][3] < score[j][3]) {  int temp= rank[i];  rank[i]=rank[j];  rank[j]= temp;  }  }  }  //출력  for(int i=0;i<score.length;i++) {  System.***out***.print(name[i]+ " : ");  for(int j=0;j<score[i].length;j++) {  System.***out***.print(score[i][j]+" ");  }  System.***out***.println(rank[i]+ " ");  }    //랭크 정렬 #2 이게 한참 나은듯.  rank =new int [] {1,1,1,1};  for(int i=0; i<score.length;i++) {  for(int j = 0; j< score.length;j++ ) {  if(score[i][3] < score[j][3]) {  rank[i]++;  }  }  }    for(int i=0;i<score.length;i++) {  System.***out***.print(name[i]+ " : ");  for(int j=0;j<score[i].length;j++) {  System.***out***.print(score[i][j]+" ");  }  System.***out***.println(rank[i]+ " ");  }  } public static void main(String[] args) {  // **TODO** Auto-generated method stub  System.***out***.println("201810754 조윤직");  *lab02*();  }  } |
| **실행결과** |
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| **실습자료3 : [배열이 동일한지 체크]** |
| **소스코드** |
| package java\_0918;  public class TestMain {  public static boolean arrEquals(int [] arr1, int [] arr2) {    if(arr1.length != arr2.length)  return false;  for(int i=0;i<arr1.length;i++) {  if(arr1[i] != arr2[i])  return false;  }  return true;  }  public static void lab03() {  int arr1[]= {1,2,3,4};  int arr2[] = {1,2,3,4};  boolean result =*arrEquals*(arr1,arr2);  System.***out***.println(result);  }  public static void main(String[] args) {  // **TODO** Auto-generated method stub  System.***out***.println("201810754 조윤직");  *lab03*();  }  } |
| **실행결과** |
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| **2019년 9월 23일 실습보고서** |
| **학번 : 201810754, 이름 : 조윤직** |
| **실습자료1 : [배열 생성 및 출력]** |
| **소스코드** |
| package java\_0923;  import java.util.Random;  import java.lang.Math;  import java.util.Scanner;  public class Testmain {  static Scanner *scan* =new Scanner(System.***in***);    public static void lab01() {  int[][] arr =*makeArray2D*();  *printarr*(arr);  }  public static int[][] makeArray2D() {  Random rand =new Random();    System.***out***.print("원하는 층의 개수를 입력하세요 :");    int []count= new int[*scan*.nextInt()];  int [][] array =new int[count.length][];  for(int i=0;i<count.length;i++) {  System.***out***.print(i+"층의 방의 개수 : ");  count[i]= *scan*.nextInt();  array[i] = new int[count[i]];  }  for(int i=0;i<count.length;i++)  for(int j=0;j<count[i];j++)  array[i][j] = rand.nextInt(100);  return array;  }  public static void printarr(int[][] arr) {  for(int i=0;i<arr.length ;i++) {  System.***out***.print(i+"층 : ");  for(int j=0; j<arr[i].length;j++) {  System.***out***.print(arr[i][j]+" ");  }  System.***out***.println();  }  }  public static void main(String[] args) {  System.***out***.println("201810754 조윤직");  *lab01*();  }    } |
| **실행결과** |
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| **실습자료2 : [맵 출력하기]** |
| **소스코드** |
| package java\_0923;  import java.util.Random;  import java.io.FileNotFoundException;  import java.lang.Math;  import java.util.Scanner;  import java.io.File;  public class Testmain {  public static void lab02() {  int[][] map = *readMap*();  *showMap*(map);  }  public static void showMap(int[][] map) {  // **TODO** Auto-generated method stub  String[] map\_com = {"□","■","@"};  for(int [] i :map) {  for(int j : i) {  System.***out***.print(map\_com[j] + “ ”);  }  System.***out***.println();  }  }  public static int[][] readMap(){  int[][] map =null;  File file = new File("map.txt");    try {  Scanner scanner = new Scanner(file);  int row = scanner.nextInt();  int col = scanner.nextInt();  map =new int [row][col];    for(int i=0;i< map.length;i++) {  for(int j=0;j<map[i].length;j++) {  map[i][j] = scanner.nextInt();  }  }  scanner.close();    } catch(FileNotFoundException e) {  System.***out***.println("파일 이름과 경로를 확인하세요!!!");  }    return map;  }      public static void main(String[] args) {  System.***out***.println("201810754 조윤직");  *lab02*();  }    } |
| **실행결과** |
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| **2019년 9월 25일 실습보고서** |
| **학번 : 201810754, 이름 : 조윤직** |
| **실습자료1~2 : [TV클래스 생성 및 출력],** |
| **소스코드** |
| package java\_0925;  import java\_0925.TV;  public class testmain {  static Scanner *scan* =new Scanner(System.***in***);    public static void lab01() {  TV tv= new TV();  tv.ShowStatus();  tv.channelUp();  tv.channelUp();  tv.powerOnOff();  tv.channelDown();    TV tv2 =new TV();  tv2.ShowStatus();    tv2.volumeUp();  tv2.volumeDown();  }    public static void main(String[] args) {  // **TODO** Auto-generated method stub  System.***out***.println("201810754 조윤직");  *lab01*();  }  }  클래스 파일  package java\_0925;  public class TV {  public boolean power =true ;  public int chanel =10 ; //멤버 초기화  public int volume =10;  public void powerOnOff() {  power =!power;  if(power)  System.***out***.println("TV 켜짐");  else  System.***out***.println("TV 꺼짐");  }  public void channelUp() {  if(power) {  chanel++;  ShowStatus();  }    }  public void channelDown() {  if(power) {  chanel--;  ShowStatus();  }  }  public void ShowStatus() {  if(power) {  System.***out***.println("현재 TV 채널 : "+chanel+ " TV 볼륨 : "+volume);  }  }  public void volumeUp() {  if(power) {  volume++;  ShowStatus();  }    }  public void volumeDown() {  if(power) {  volume--;  ShowStatus();  }  }  } |
| **실행결과** |
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| **2019년 10월 02일 실습보고서** |
| **학번 : 201810754, 이름 : 조윤직** |
| **실습자료 1 : [TV클래스 생성자],** |
| **소스코드** |
| TestMain.java  package java\_0930;  import java.util.Scanner;  import java\_0930.TV;  public class TestMain {  public static void lab01() {  TV tele =new TV(12,20);    tele.powerOnOff();  tele.ShowStatus();    TV tee =new TV(20);  tee.powerOnOff();  tee.ShowStatus();  }    public static void main(String[] args) {  // **TODO** Auto-generated method stub  System.***out***.println("201810754 조윤직");  *lab01*();  }  }  TV.java  package java\_0930;  public class TV {  public boolean power =false ;  public int chanel; //멤버 초기화  public int volume;  public TV() {  chanel =10 ; //멤버 초기화  volume =10;  }  public TV(int channel,int Volume) {  this.chanel =channel;  this.volume =Volume;  }  public TV(int channel) {  this.chanel =channel;  this.volume =10;  }    public void powerOnOff() {  power =!power;  if(power)  System.***out***.println("TV 켜짐");  else  System.***out***.println("TV 꺼짐");  }    public void channelUp() {  if(power) {  chanel++;  ShowStatus();  }    }  public void channelDown() {  if(power) {  chanel--;  ShowStatus();  }  }  public void ShowStatus() {  if(power) {  System.***out***.println("현재 TV 채널 : "+chanel+ " TV 볼륨 : "+volume);  }    }  public void volumeUp() {  if(power) {  volume++;  ShowStatus();  }    }  public void volumeDown() {  if(power) {  volume--;  ShowStatus();  }  }  } |
| **실행결과** |
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| **실습자료 2 : [자동차 클래스],** |
| **소스코드** |
| //TestMain.java  package java\_0930;  import java.util.Scanner;  import java\_0930.TV;  import java\_0930.Vehicle;  public class TestMain {  public static void lab02() {  Vehicle car1 =new Vehicle();  car1.move();  car1.accelerate(12);  car1.move();  car1.break\_(5);  car1.move();  }      public static void main(String[] args) {  // **TODO** Auto-generated method stub  System.***out***.println("201810754 조윤직");  *lab02*();  }  }  //class Vehicle.java  package java\_0930;  public class Vehicle {  String color;  int speed = 0;  char gearStatus = 'P';    Vehicle(){  this("검은색");  }  Vehicle(String color){  this.color = color;  }    public void accelerate(int s) {  this.speed +=s;  System.***out***.println(s+"만큼 속도 증가, 지금 속도 : "+speed);  }  public void break\_(int b) {  this.speed -=b;  System.***out***.println(b+"만큼 속도 감소, 지금 속도 : "+speed);  }  public void move() {  if(speed != 0)  System.***out***.println(color+"의 자동차 "+ gearStatus + "상태로 "+speed+"속도 운행중");  else  System.***out***.println(color+"의 자동차 정차 중");  }  public void changeGear(char g) {  this.gearStatus =g;  System.***out***.println("차량기어를 바꿉니다,현재 차량 기어 : "+gearStatus);  }  } |
| **실행결과** |
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| **실습자료 3 : [caruser클래스],** |
| **소스코드** |
| //CarUser.java  package java\_0930;  import java\_0930.Vehicle;  public class CarUser {  String name;    CarUser(){  this("user");  }  CarUser(String name){  this.name =name;  }  public void accelerate(Vehicle car,int s) {  System.***out***.println(name+"가 차를 가속합니다.");  car.accelerate(s);  }  public void move(Vehicle car) {  System.***out***.println(name+"가 차를 움직입니다.");  car.move();  }  public void changeGear(Vehicle car,char g) {  System.***out***.println(name+"가 기어를 바꿉니다");  car.changeGear(g);  }  }  //Vehicle은 2번과 동일  //testmain.java  package java\_0930;  import java.util.Scanner;  import java\_0930.TV;  import java\_0930.Vehicle;  import java\_0930.CarUser;  public class TestMain {    public static void lab03() {  Vehicle car1 =new Vehicle("파랑색");  CarUser user1 =new CarUser("HY");  user1.accelerate(car1, 12);  user1.changeGear(car1, 'D');  user1.move(car1);  }      public static void main(String[] args) {  // **TODO** Auto-generated method stub  System.***out***.println("201810754 조윤직");  *lab03*();  }  } |
| **실행결과** |
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| **실습자료 4 : [객체 배열 생성, 사용],** |
| **소스코드** |
| //Vehicle.java,CarUser.java는 2,3번과 동일  //testMain.java  package java\_0930;  import java.util.Scanner;  import java\_0930.TV;  import java\_0930.Vehicle;  import java\_0930.CarUser;  public class TestMain {    public static void lab04() {  Vehicle [] vehicles =new Vehicle[5];  vehicles[0] =new Vehicle("빨강색");  vehicles[1] =new Vehicle("파랑색");  vehicles[2] =new Vehicle("노랑색");  vehicles[3] =new Vehicle("보라색");    CarUser user1 =new CarUser("HY");  for(int i=0;i<4;i++) {  user1.accelerate(vehicles[i], i+10);  user1.move(vehicles[i]);  }    }    public static void main(String[] args) {  // **TODO** Auto-generated method stub  System.***out***.println("201810754 조윤직");  *lab04*();  }  } |
| **실행결과** |
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| **2019년 10월 02일 실습보고서** |
| **학번 : 201810754, 이름 : 조윤직** |
| **실습자료 1 : [문자 치환하기],** |
| **소스코드** |
| package java\_1002;  import java.util.Scanner;  import java.util.Random;  import java.lang.String;  public class TestMain {  public static Scanner *scan* =new Scanner(System.***in***);  public static void lab01() {  System.***out***.print("문자열 입력 : ");  String str = *scan*.nextLine();    char[] str\_ch = *replaceChar*(str,' ','%');  System.***out***.println(str\_ch);    }  public static void replaceChar(char[] str,char a, char b) {  for(int i=0 ; i< str.length;i++)  if(str[i]==a)  str[i]=b;  }  public static char[] replaceChar(String str,char a, char b) {    char[] str\_ch =str.toCharArray();  *replaceChar*(str\_ch,a,b);  return str\_ch;  }  public static void main(String[] args) {  // **TODO** Auto-generated method stub  System.***out***.println("201810754 조윤직");  *lab01*();  }  } |
| **실행결과** |
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| **실습자료 2 : [],** |
| **소스코드** |
| //BankAccount.java  package java\_1002\_2;  public class BankAccount {  private int accountNumber;  private String customerName;  private double accountBalance;    public BankAccount() {  this(0,"noname",0);  }  public BankAccount(String customerName) {  this(0,customerName,0);  }    public BankAccount(int accountNumber, String customerName) {  this(accountNumber,customerName,0);  }  public BankAccount(int accountNumber, String customerName,double accountBalance) {  this.accountBalance =accountBalance;  this.customerName = customerName;  this.accountNumber =accountNumber;    }  public double getBalance() {    return accountBalance;  }  public void deposit(double Amount) {  this.accountBalance +=Amount;  }  public void withdraw(double Amount) {  if(this.accountBalance >= Amount) {  this.accountBalance -=Amount;  }  else  System.***out***.println("잔액 부족");  }  public void transfer(BankAccount acct, double Amount) {  if(this.accountBalance >= Amount) {  this.withdraw(Amount);  acct.deposit(Amount);  System.***out***.println("이체 완료");  }  else  System.***out***.println("잔액 부족");  }    *@Override*  public String toString() {  // **TODO** Auto-generated method stub  String info = "계좌 번호 : " + this.accountNumber;  info = info +"\n고객 이름: "+this.customerName;  info =info +"\n계좌 잔액 : "+this.accountBalance;  return info;  }    }  //Testmain.java  package java\_1002\_\_;  import java.util.Scanner;  import java.util.Random;  import java.lang.String;  import java\_1002\_2.BankAccount;  public class TestMain {  public static Scanner *scan* =new Scanner(System.***in***);    public static void lab03() {  BankAccount bank1 = new BankAccount(100,"홍길동",1000);  BankAccount bank2 = new BankAccount(200,"김길동",500);  bank1.deposit(1000);  bank1.transfer(bank1, 500);  System.***out***.println(bank1);  System.***out***.println(bank2);    }    public static void main(String[] args) {  // **TODO** Auto-generated method stub  System.***out***.println("201810754 조윤직");  *lab03*();  }  } |
| **실행결과** |
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| **2019년 10월 07일 실습보고서** |
| **학번 : 201810754, 이름 : 조윤직** |
| **실습자료 1 : [bank~],** |
| **소스코드** |
| //BankAccount.java  package java\_1008;  import java\_1008.BankAccount;  public class BankAccount {  private int accountNumber;  private String customerName;  private double accountBalance;    public BankAccount() {  this(0,"noname",0);  }  public BankAccount(String customerName) {  this(0,customerName,0);  }    public BankAccount(int accountNumber, String customerName) {  this(accountNumber,customerName,0);  }  public BankAccount(int accountNumber, String customerName,double accountBalance) {  this.accountBalance =accountBalance;  this.customerName = customerName;  this.accountNumber =accountNumber;  }    public int getAccountNumber() {  return accountNumber;  }  public void setAccountNumber(int accountNumber) {  this.accountNumber = accountNumber;  }  public double getAccountBalance() {  return accountBalance;  }  public void setAccountBalance(double accountBalance) {  this.accountBalance = accountBalance;  }  public double getBalance() {    return accountBalance;  }  public void deposit(double Amount) {  this.accountBalance +=Amount;  }  public void withdraw(double Amount) {  if(this.accountBalance >= Amount) {  this.accountBalance -=Amount;  }  else  System.***out***.println("잔액 부족");  }  public void transfer(BankAccount acct, double Amount) {  if(this.accountBalance >= Amount) {  this.withdraw(Amount);  acct.deposit(Amount);  System.***out***.println("이체 완료");  }  else  System.***out***.println("잔액 부족");  }    *@Override*  public String toString() {  // **TODO** Auto-generated method stub  String info = "계좌 번호 : " + this.accountNumber;  info = info +"\n고객 이름: "+this.customerName;  info =info +"\n계좌 잔액 : "+this.accountBalance;  return info;  }    }  //BankManager.java  package java\_1008;  import java\_1008.BankAccount;  import java.util.Scanner;  public class BankManager {  public static Scanner *scan* =new Scanner(System.***in***);  BankAccount[] accounts;  int account\_count;  public BankManager () {  accounts = new BankAccount[20];  account\_count = 0;  }  public void creat() {  if(account\_count<20) {  int account\_num= 0,money;  String name;  System.***out***.println(account\_count+"번 계좌 생성.");  System.***out***.println("계좌 번호 입력 : ");  account\_num =*scan*.nextInt();  *scan*.nextLine();  System.***out***.println("계좌소유자명 입력 : ");  name = *scan*.nextLine();  System.***out***.println("처음 넣을 금액 입력 : ");  money =*scan*.nextInt();  *scan*.nextLine();  accounts[account\_count] =new BankAccount(account\_num,name,money);  account\_count++;  }  }    public void deposit() {  System.***out***.print("어떤 계좌에서 얼마를 입금하시곘습니까? (num money) : ");  int num;  double money;  num =*scan*.nextInt();  money =*scan*.nextDouble();  num =findAccount(num);  if(num ==100) {  System.***out***.println("게좌번호 입력 오류 ..");  return;  }  accounts[num].deposit(money);    }  public void withdraw() {  System.***out***.print("어떤 계좌에서 얼마를 출금하시곘습니까? (num money) : ");  int num;  double money;  num =*scan*.nextInt();  money =*scan*.nextDouble();  num =findAccount(num);  if(num ==100) {  System.***out***.println("게좌번호 입력 오류 ..");  return;  }  accounts[num].withdraw(money);  }  public void transfer() {  System.***out***.print("어떤 계좌에서 얼마를 어떤계좌로 이체 할까요? (num1 money num2) : ");  int num1,num2;  double money;  num1 =*scan*.nextInt();  money =*scan*.nextDouble();  num2 =*scan*.nextInt();  num1 =findAccount(num1);  num2 =findAccount(num2);  if(num1 ==100| num2==100) {  System.***out***.println("게좌번호 입력 오류 ..");  return;  }  accounts[num1].transfer(accounts[num2], money);  }    public int findAccount(int target) {  int targ = 100;  for(int i=0; i < account\_count;i++) {  if(target == accounts[i].getAccountNumber()) {  targ =i;  break;  }  }    return targ;  }    public String toString() {  String info = "";  int a=0;  for(BankAccount ba: accounts){  if(ba != null)  info += (a++) +"번 계좌 :\n"+ ba.toString() +"\n";  }  return info;  }  }  //testmain.java  package java\_1008;  import java\_1008.BankManager;  import java\_1008.BankAccount;  public class TestMain {  public static void main(String[] args) {  // **TODO** Auto-generated method stub  BankManager bank = new BankManager();  for(int i=0; i<3;i++) {  bank.creat();  }  System.***out***.println(bank.toString());  bank.deposit();  System.***out***.println(bank.toString());  bank.withdraw();  bank.transfer();  System.***out***.println(bank.toString());  }  } |
| **실행결과** |
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| **2019년 10월 14일 실습보고서** |
| **학번 : 201810754, 이름 : 조윤직** |
| **실습자료 1 : [ticket],** |
| **소스코드** |
| //Ticket.java  package java\_1014;  public class Ticket {  protected int number;  protected double price;  public Ticket() {    }  public Ticket(int number, double price) {  super();  this.number =number;  this.price =price;  }  public int getNumber() {  return this.number;  }  public double getPrice() {  return this.price;  }  public void setPrice(double price) {  this.price=price;  }  public void setNumber(int number) {  this.number = number;  }  *@Override*  public String toString() {  return ("티켓 번호 :"+this.getNumber()+" / 가격 : "+this.getPrice());  }      }  //GeneralTicket  package java\_1014;  public class GeneralTicket extends Ticket {  boolean payBycredit;  public GeneralTicket(int number, double price, boolean payBycredit) {  super(number, price);  this.payBycredit = payBycredit;  }  public GeneralTicket(int number, double price) {  super(number, price);  }  public boolean isPayBycredit() {  return payBycredit;  }  public void setPayBycredit(boolean payBycredit) {  this.payBycredit = payBycredit;  }  *@Override*  public double getPrice() {  // **TODO** Auto-generated method stub  if(this.isPayBycredit()) {  return (super.getPrice() \*1.1) ;    }  else {  return super.getPrice();  }    }  public GeneralTicket() {  super();  }  *@Override*  public String toString() {  // **TODO** Auto-generated method stub  return super.toString()+"카드 결제";  }    }  //AdvanceTicket  package java\_1014;  public class AdvanceTicket extends Ticket {  int day;  public AdvanceTicket() {  super();  }  public AdvanceTicket(int number, double price, int day) {  super(number, price);  this.day = day;  }  public AdvanceTicket(int number, double price) {  super(number, price);  }  *@Override*  public double getPrice() {  // **TODO** Auto-generated method stub  if(this.day>30)  return super.getPrice()\*0.6;  else if (this.day>20)  return super.getPrice()\*0.7;  else if (this.day>10)  return super.getPrice()\*0.8;  else if (this.day>5)  return super.getPrice()\*0.9;  else  return super.getPrice();  }  *@Override*  public String toString() {  // **TODO** Auto-generated method stub  return super.toString()+" / 사전 예약 일수 : "+this.getDay();  }  public int getDay() {  return day;  }  public void setDay(int day) {  this.day = day;  }  public AdvanceTicket(int day) {  super();  this.day = day;  }  }  //testMain  package java\_1014;  public class testmain {    public static void main(String[] args) {  // **TODO** Auto-generated method stub  System.***out***.println("201810754 조윤직");  Ticket[] ticket =new Ticket[3];  ticket[0]= new Ticket(1,100.0);  ticket[1]=new GeneralTicket(2,100.0,true);  ticket[2]=new AdvanceTicket(3,200,51);  for(Ticket t:ticket) {  if(t instanceof AdvanceTicket) //특정 타입 인지 식별할때  System.***out***.println(t);  }  System.***out***.println(ticket[0]);  System.***out***.println(ticket[1]);  System.***out***.println(ticket[2]);  }  } |
| **실행결과** |
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| **2019년 10월 16일 실습보고서** |
| **학번 : 201810754, 이름 : 조윤직** |
| **실습자료 1 : [ticket],** |
| **소스코드** |
| //TicketManager.java  package java\_1016;  public class TicketManager {  private Ticket[] tickets;  private int number; //  private int count;  private int total;  private String name; //공연 명    public TicketManager() {    }  public void register(Ticket ticket) {  if(number > count) {  tickets[count++] =ticket;  }  else {  System.***out***.println("매진");  }  }    public double getTotal() {  this.total= 0;  for(Ticket ticket : tickets) {  if(ticket!=null)  total += ticket.getPrice();  }  return this.total;  }    public int getCount() {  return count;  }  public void setCount(int count) {  this.count = count;  }  public String getName() {  return name;  }  public void setName(String name) {  this.name = name;  }  public void setTotal(int total) {  this.total = total;  }  public TicketManager(int number, String name) {  super();  this.number = number;  this.name = name;  this.tickets= new Ticket[this.number];  }  void showGeneralTicket(boolean credit) {  for(Ticket ticket : tickets) {  if(ticket instanceof GeneralTicket) {  GeneralTicket tick=(GeneralTicket)ticket;  if(tick.isPayBycredit()==credit)  System.***out***.println(tick.toString());  }  }  }  *@Override*  public String toString() {  // **TODO** Auto-generated method stub  String str="";  str +="공연 명 : "+this.name+"\n";  for(Ticket ticket : tickets) {  if(ticket != null)  str += ticket.toString()+"\n";  }  str +="총 금액 : ";  str += this.getTotal();  return str;  }  }  //main.java  package java\_1016;  public class Testmain {  public static void lab01() {  TicketManager ticket1 =new TicketManager(10,"아이유 콘서트");  ticket1.register(new Ticket(1,1000));  ticket1.register(new GeneralTicket(2,1000,true));  ticket1.register(new GeneralTicket(3,1000,false));  ticket1.register(new AdvanceTicket(4,1000,40));  ticket1.register(new AdvanceTicket(5,1000,20));  ticket1.register(new AdvanceTicket(6,1000,5));  System.***out***.println(ticket1);  ticket1.showGeneralTicket(true);  }  public static void main(String[] args) {  // **TODO** Auto-generated method stub  System.***out***.println("201810754 조윤직");  *lab01*();  }  } |
| **실행결과** |
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