BAU

Bahçeşehir University

CET4104 – MOBILE PROGRAMMING

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AGENDA

1- Class
2- Constructor
3- Inheritance
4- Generic Variable
5- Getter and Setters

Class

```
void main() {
 PersonelManager p1=new PersonelManager();
 var p2=new PersonelManager();
 var p3=PersonelManager();
 // p1,p2 and p3 are personel objects
 // all widgets are objects
 // return new Scaffold;
}

class PersonelManager{
 void add(){
  //it is going to add this personel to DB
  print("personel added to DB");
 }
 void update(){
  //suppose this function updates this personel in DB
  print("personel updated in DB");
 }
 void delete(){
  print("peronel deleted");
 }
}
class CustomerManager{
 void add(){
  //it is going to add this personel to DB
  print("personel added to DB");
 }
 void update(){
  //suppose this function updates this personel in DB
  print("personel updated in DB");
 }
 void delete(){
  print("peronel deleted");
 }
}
```

constructor

```
//you create objects with class
//those objects will have the methods of that class
//they can store properties of an object

void main() {
  var c1=Customer();
  c1.name="mustafa";
  c1.surname="coşkun";
  var c2=Customer.withInfo("Ahmet","Yılmaz"); //I am using constructor method
  print("first customer:" + c1.name.toString() + " " + c1.surname);
  print("second customer:" + c2.name.toString() + " " + c2.surname);
  var cm=CustomerManager();
  cm.add(c1);
  cm.add(c2);

}

//this is for creating objects with constructors
class Customer{ //this class is for customer object creation
  String? name;
  late String surname;
  //constructor method should be in the same name of class
  Customer.withInfo(String n, String s){
    name=n;
    surname=s;
  }
  //you can define more than one constructor with different arguments
  //If you want to do this, you should give subnames to constructor
  Customer(){

  }

}

//this is for operations on object so it has not a constructor
class CustomerManager{ //we created this class for DB options
  void add(Customer cs){ //I am sending a customer object to this method
    //it is going to add this personel to DB
    print(cs.name.toString() + " " + cs.surname +" is added to DB");
  }
  void update(){
    //suppose this function updates this personel in DB
    print("personel updated in DB");
  }
  void delete(){
    print("peronel deleted");
  }
}
```

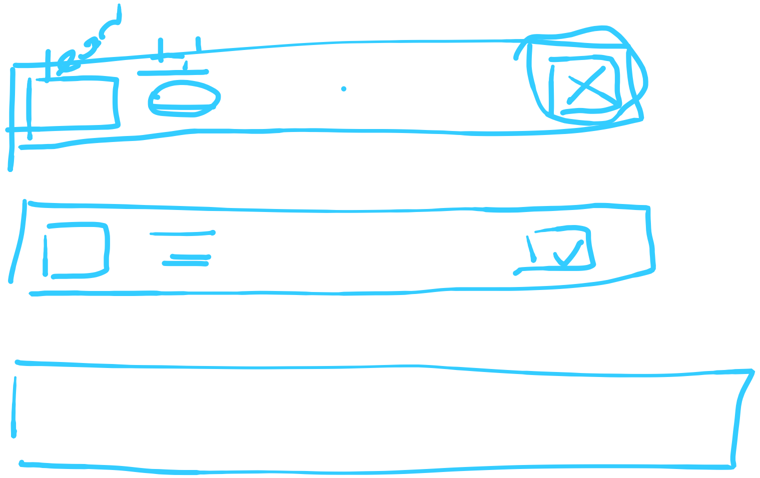
generic

```
//generic
void main(){
  List cities=["ankara","istanbul","izmir"];
  print(cities);
  cities.add("mersin");
  print(cities);
  cities.add(1999);
  print(cities);

  var c2=["ankara","istanbul","izmir"];
  print(c2);
  c2.add("mersin");
  print(c2);
  // this is an error c2.add(1999);
  print(c2);

  List<String> c3=["ankara","istanbul","izmir"];
  print(c3);
  c3.add("mersin");
  print(c3);
  //this is now an error -> c3.add(1999);
  print(c3);

  var p1=Product("mobile phone",12000);
  var p2=Product("TV", 38880);
  List<Product> products=[p1,p2];
  print(products[0].name! + " " + products[1].unitPrice.toString());
}
class Product{
  String? name;
  late double unitPrice;
  Product(String n,double up){
    name=n;
    unitPrice=up;
  }
}
```



Main.dart

```dart
import 'package:flutter/cupertino.dart'; //for IOS Design
import 'package:flutter/material.dart';
import 'package:practice/models/student.dart'; // for Android Design

void main(){
 runApp(MaterialApp(
  home: MyApp()
 ));
}

class MyApp extends StatelessWidget{
 int year=1981;
 String myTitle="how are you";
 String myText="here is my body text";
 var students = <Student>[Student("Mustafa", "Coşkun", 55),Student("Yusup", "Hudayglyev", 10),Student("Bayram", "Soltanov", 45)];
 @override
 Widget build(BuildContext context) {
  return Scaffold(
   backgroundColor: Colors.cyanAccent,
   appBar: AppBar(
    title: Text(myTitle),
   ),
   body: buildBody(context),
  );
  throw UnimplementedError();
 }

 //we are adding a new function here
 String calculateOldness(){
  String message="";
  if(year<1990)
   message="you are soo old";
  else
   message="my young friend";

  return message;
 }

 void showMessage(BuildContext context, String message){ // since the conetxt is not a variable I am going to build that context inside of
argument parathesis
   var alert=AlertDialog(
     title: Text("Result"),
     content: Text(message)
   );
   showDialog(context: context, builder: (BuildContext)=>alert);
  }
```

```dart
buildBody(BuildContext context){
  return Column(
   children: [
    Expanded(
      child:
      ListView.builder(
        itemCount: students.length,
        itemBuilder: (BuildContext context, int index){
         return ListTile(
          leading: CircleAvatar(
           backgroundColor: Colors.amber,
           backgroundImage: NetworkImage("https://cdn-icons-png.flaticon.com/512/67/67902.png"),
          ),
          title: Text(students[index].firstName + " " + students[index].lastName),
          subtitle: Text("Grade:" + students[index].grade.toString() + "-" + students[index].getStatus),
          trailing: buildStatusIcon(students[index].grade),
          onTap: () {
           print(students[index].getStatus);
          },
         );

        }
      )
    ),
    Center(
      child: ElevatedButton(
        onPressed: (){
         showMessage(context, calculateOldness());
        },
        child: Text("Please click on me")
      )
    ),
   ],
  );
 }
 Widget buildStatusIcon(int grade){
  if(grade>=50)
   return Icon(Icons.done);
  else if(grade>=40)
   return Icon(Icons.ac_unit);
  else
   return Icon(Icons.clear);
 }
}
```

Student.dart

```dart
class Student{
 late String firstName;
 late String lastName;
 late int grade;
 late String status;

 Student(String fn,String ln,int gr){
  firstName=fn;
  lastName=ln;
  grade=gr;
  //status="passed";
 }
 //getter setter
 String get getFirstName{
  return "OGR - " + this.firstName;
 }
 void set setFirstName(String value){
  this.firstName=value;
 }
 String get getStatus{
  String message="";
  if(grade>=50)
   message="Passed";
  else if(grade>=40)
   message="resit";
  else
   message="failed";
  return message;
 }
}
```