TRƯỜNG ĐẠI HỌC KHOA HỌC TỰ NHIÊN
KHOA CÔNG NGHỆ THÔNG TIN

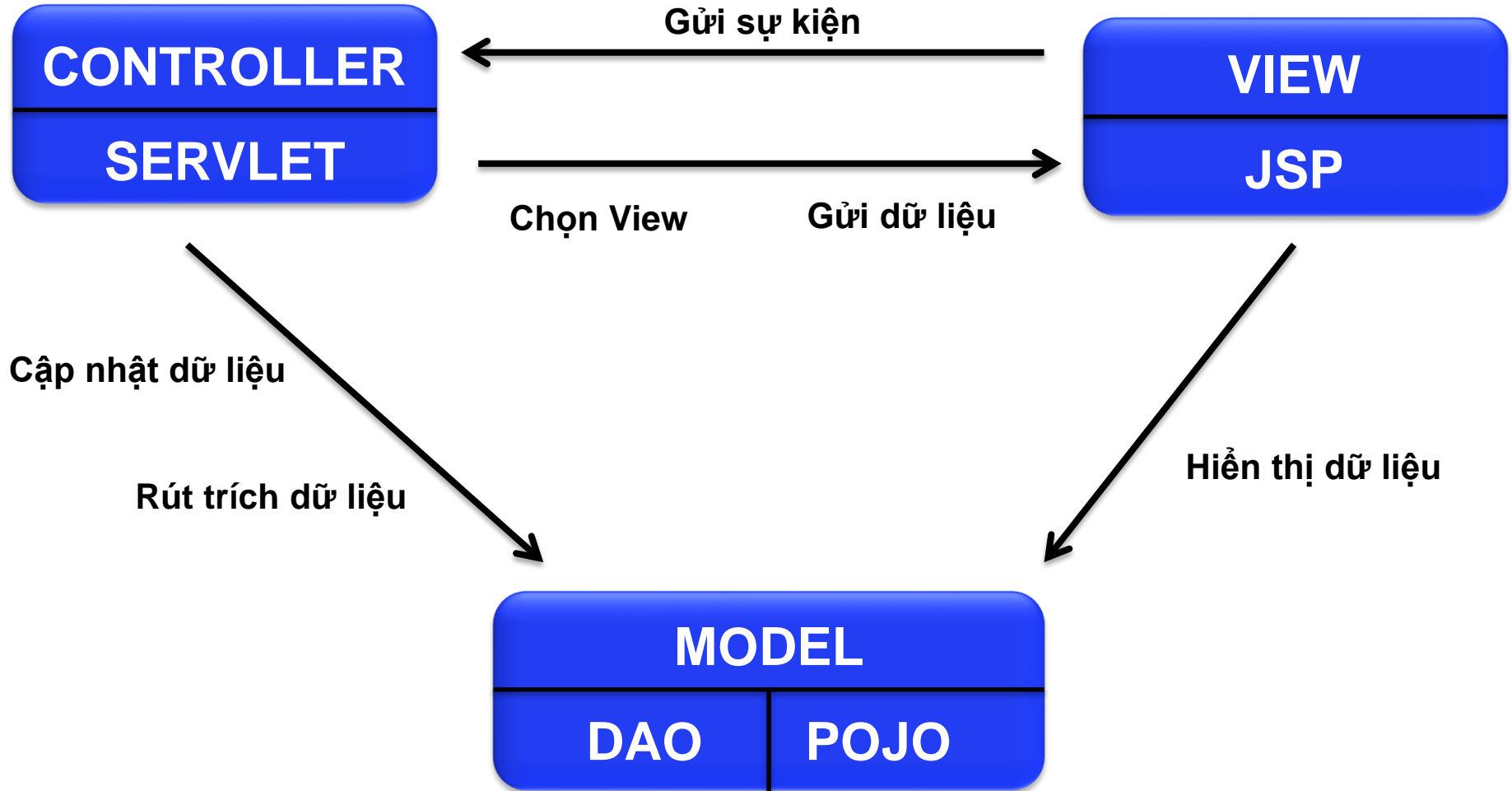# MVC2 & EXPRESSION LANGUAGE

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- Expression Language – MVC2

- Expression Language – Variable

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- Expression Language - Collection

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MVC 2

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Controller (Servlet) gửi dữ liệu cho View (JSP)

- Request

- Session

- Application (ServletContext)

Controller (Servlet) → View (JSP)

- Controller (Servlet)

```
POJO pojo = . . .

request.setAttribute("key", pojo);

session.setAttribute("key", pojo);

application.setAttribute("key", pojo);

String url="url view";

RequestDispatcher rd =

        request.getRequestDispatcher(url);

rd.forward(request, response);
```

Controller (Servlet) → View (JSP)

- View (JSP)
  - **Java Bean**

```
<jsp:useBean id="key"   type="POJO"

        scope="request|session|application"/>
```

  - **Scriptlet**

```
<%

POJO pojo=(POJO)request.getAttribute("Key");

POJO pojo=(POJO)session.getAttribute("Key");

POJO pojo=(POJO)session.getAttribute("Key");

%>
```

MVC 2 - VIEW

- jsp:useBean – jsp:getProperty
  - Khai báo dài dòng
  - Không thể truy xuất property con là Java Bean
  - Không thể truy xuất phần tử trong mảng
- Scriptlet
  - Khó bảo trì giao diện
  - Làm mất ý nghĩa tuyệt vời khi phân tách controller và view

Expression Language – MVC2

- Bean : Sach

```
private String tenSach;
public String getTenSach() {…}
```

- Servlet

```
Sach sach = …
request.setAttribute("sach", sach);
rd.forward(…)
```

- JSP

```
Tên sách:   ${sach.tenSach}
```

Expression Language – MVC2

- Bean : Sach

```
private String tenSach;
public String getTenSach() {…}
```

- Servlet

```
ArrayList<Sach> gioHang = …
session.setAttribute("gioHang", sach);
rd.forward(…)
```

- JSP

```
Số lượng:  ${gioHang.size()}
Sách đầu tiên: ${gioHang[0].tenSach}
```

Expression Language – MVC2

- Bean : Sach

```
private String tenSach;

private DanhMuc danhMuc;

public String getTenSach() {…}

public DanhMuc getDanhMuc() {…}
```

- Servlet

```
Sach sach = …

session.setAttribute("sach", sach);

rd.forward(…)
```

Expression Language – MVC2

- JSP

- `${sach.danhMuc.maDanhMuc}`

- `${sach.tenSach}`

```
<%

  Sach
sach=(Sach)request.getAttribute(«sach»);

%>
```

Expression Language – Variable

- Cú pháp

    `${tenBien}`

Expression Language – Variable

- Servlet

```
String thongBao="Xin chào Nguyễn Hoàng Anh";
request.setAttribute("thongBao", thongBao);
rd.forward()
```

- JSP

```
<p>   ${thongBao} </p>
```

- Kết quả

```
    Xin chào Nguyễn Hoàng Anh
```

Expression Language – Variable

- Servlet

```
String thongBao="Xin chào Nguyễn Hoàng Anh";
HttpSession session = request.getSession();
session.setAttribute("thongBao", thongBao);
rd.forward()
```

- JSP

```
<p>  ${thongBao} </p>
```

- Kết quả

```
Xin chào Nguyễn Hoàng Anh
```

Expression Language – Variable

- **Servlet**

```
String thongBao="Xin chào Nguyễn Hoàng Anh";

ServletContext applcation = getServletContext();

application.setAttribute("thongBao", thongBao);

rd.forward()
```

- **JSP**

```
<p>  ${thongBao} </p>
```

- **Kết quả**

```
Xin chào Nguyễn Hoàng Anh
```

Expression Language – Variable

- Servlet

```
String thongBao1="Xin chào Nguyễn Hoàng Anh";

String thongBao2="Xin chào Anh Hoàng Nguyễn";

String thongBao3="Xin chào Hoàng Anh Nguyễn";

request.setAttribute("thongBao", thongBao1);

session.setAttribute("thongBao", thongBao2);

application.setAttribute("thongBao", thongBao3);
```

- JSP :

```
<p>   ${thongBao} </p>
```

- Kết quả: **Xin chào Nguyễn Hoàng Anh**

Expression Language – Variable

- Cú pháp

    ```
    ${requestScope.tenBien}

    ${sessionScope.tenBien}

    ${applicationScope.tenBien}
    ```

Expression Language – Variable

- Servlet

```
String thongBao1="Xin chào Nguyễn Hoàng Anh";

String thongBao2="Xin chào Anh Hoàng Nguyễn";

String thongBao3="Xin chào Hoàng Anh Nguyễn";

request.setAttribute("thongBao", thongBao1);

session.setAttribute("thongBao", thongBao2);

application.setAttribute("thongBao", thongBao3);
```

Expression Language – Variable

- JSP:

```
${requestScope.thongBao}        <br/>

${sessionScope.thongBao}        <br/>

${applicationScope.thongBao}
```

- Kết quả

```
Nguyễn Hoàng Anh

Anh Hoàng Nguyễn

Hoàng Anh Nguyễn
```

Expression Language – Java Bean

- Cú pháp

  ```
  ${tenBien.tenThuocTinh}

  ${tenBien.tenThuocTinh.tenThuocTinh...}

  ${requestScope.tenBien.tenThuocTinh...}
  ${sessionScope.tenBien.tenThuocTinh...}

  ${applicationScope.tenBien.tenThuoctinh...}
  ```

Expression Language – Java Bean

- POJO : Sach

```
private String tenSach;
public String getTenSach (){return this.tenSach;}
```

- Servlet

```
Sach sach = ...
request.setAttribute("sach", sach);
```

- JSP :

```
<p>  ${sach.tenSach} </p>
```

Expression Language – Java Bean

- POJO : Sach

```
private String tenSach;

private DanhMuc danhMuc;

public String getTenSach{return this.tenSach;}

public DanhMuc getDanhMuc {return this.danhMuc;}
```

- Servlet

```
Sach sach = ...

request.setAttribute("sach", sach);
```

- JSP :

```
${sach.tenSach}   ${sach.danhMuc.tenDanhMuc}
```

Expression Language – Collection

```
${tenBien[index]}  --> Array

${tenBien[index].tenThuocTinh...}

${tenBien[Key]}  --> Map

${tenBien[Key].tenThuocTinh...}


${requestScope...}

${sessionScope...}

${applicationScope...}
```

Expression Language – Collection

- Servlet

```
ArrayList<Sach> ds = . . .

request.setAttribute("ds", ds);
```

- JSP :

```
<p>   ${ds[0].tenSach} </p>

<p>   ${ds[0].danhMuc.tenDanhMuc} </p>
```

Expression Language – Collection

- Servlet

```
HashMap<String, Sach> ds =
                    new HashMap<String, Sach> ();
ds.put(s1.getMaSach, s1);
ds.put(s2.getMaSach, s2);
request.setAttribute("ds", ds);
```

- JSP :

```
<p>  ${ds["S001"].tenSach} </p>
<p>  ${ds["S002"].danhMuc.tenDanhMuc} </p>
```

Expression Language – Request Parameter

- Cú pháp

  ```
  ${param.inputName}
  ```

- Ví dụ

  ```
  ${param.tenDangNhap}

  ${param.email}

  ${param.dienThoai}
  ```

Expression Language - Operator

- Arithmetic: + - * / div % mod

  ${1 + 2 + 3}

- Relational: == eq != ne < lt > gt <= le >= ge

  ${var1 == var2}

- Logical: && and || or ! Not

  ${expr1 && expr2)

Expression Language

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HỎI VÀ ĐÁP

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Reference

- [1] Marty Hall; Larry Brown; Yaakov Chaikin. (2007). Core Servlets and Javaserver Pages: Advanced Technologies, Vol. 2, 2nd Edition. Prentice Hall.