make a 180° life change

University of British Columbia Okanagan

COSC 304 - Project Design

Names Removed

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CONTENTS:

1 INTRODUCTION

1.1 Purpose of Document

The purpose of this document is to outline the design and underlying structure of the 180° website and database by providing domain assumptions, UML diagram, corresponding SQL DDL and a user walk-through for visitors, customers, and administrators.

1.2 Mission Statement

To give everyone the opportunity to change their life by 180 degrees and find their dream job by providing them with the required degree from one of the best institutions in Canada or the institution of their choice.

1.3 Executive Summary

180degrees is an online shop for university degrees where anyone can buy their desired degree. The website offers degrees from the top 20 Canadian institutions according to topuniversity.com. Customers can either search for an institution by name, browse them, or create their own. From the institution name, customers can customize by faculty, subject, honors standing, name, and date.

Everyone can browse degrees and add them to the shopping cart, but in order to purchase one, a customer has to have an account. To create an account, a user has to provide first and last name, a unique email address and a password. When checking out, the shipping address and name and credit card details are required.

Company personnel can log in as administrator who is able to view users and add new ones. The administrator can also view the top schools and update them by deleting and adding new ones. Additionally, sales reports and orders from users can be viewed. If anything goes wrong, the administrator can restore the database and thereby reset the schools to the default ones and delete all users, orders and shipments.

2 SYSTEM FEATURES

2.1 Main Page

Points	System Features	%Complete	Code Files
2	Home page running on web server	100%	all, 180degrees.jsp
1	Search for a product by name	100%	listdegrees.jsp
1	List products (by search/browse)	100%	listdegrees.jsp
1	Page header with menu	100%	header.jsp
1	Page header shows current logged in user	100%	header.jsp
2	Dynamic products on page based on sales	100%	listdegrees.jsp
2	List products with image	100%	listdegrees.jsp

2.2 Shopping Cart

Points	System Features	%Complete	Code Files
1	Add to shopping cart	100%	addcart.jsp
1	View shopping cart	100%	showcart.jsp
1	Remove item from shopping cart	100%	showcart.jsp
1	Shopping cart data validation on updates	50%	showdegree.jsp
1	Improved formatting/UI (e.g in header bar)	100%	header.jsp

2.3 Checkout

Points	System Features	%Complete	Code Files
1	Checkout with customer email address	100%	orderinformation.jsp, order.jsp, login.jsp
2	Checkout with payment/shipment info	100%	orderinformation.jsp
3	Checkout with data validation	75%	orderinformation.jsp
2	Calculate taxes and shipping cost	75%	showcart.jsp

2.4 Product detail page

Points	System Features	%Complete	Code Files
3	Product detail page & item description	100%	showdegree.jsp
1	Product detail has an image	100%	showdegree.jsp

2.5 User Accounts and Login

Points	System Features	%Complete	Code Files
3	Create user account page	100%	createaccount.jsp
3	Create user account with data validation	100%	createaccount.jsp
1	Page Listings all orders for user	100%	listorder.jsp
2	Login/Logout	100%	login.jsp, validateLogin.jsp, logout.jsp

2.6 Administrator Portal

Points	System Features	%Complete	Code Files
3	Secured by login	100%	login.jsp, validateLogin.jsp
1	List all customers	100%	listusers.ca
1	List report showing total sales/orders	100%	listorder.jsp
3	Report with a graph	100%	listorder.jsp
2	Add new product	100%	listdegrees.jsp, addschool.jsp
2	Delete product	100%	listdegrees.jsp
2	Upload a photo to file system for product	75%	addlogo.jsp, uploadfile.jsp
2	Database restore with SQL script	100%	restoresql.jsp
2	Add User	100%	listusers.ca, createaccount.jsp, adduser.ca

2.7 Database System/General

Points	System Features	%Complete	Code Files
2	Customize product	100%	customizedegree.jsp
1	Check if the school from the customized degree were one of the top schools and update price accordingly	100%	addcart.jsp

3 KNOWN ISSUES

- Faculties and subjects of schools: We assume all schools have the same faculties offering the same subjects

3.1 Incomplete Features

- Checkout with data validation: while credit card details, the format of the postal code and the maximum length of the phone number are validated and it is checked that no field is empty, it is not validated if the entered address exists
- Calculate taxes and shipping cost: taxes and shipping cost are added to the total price of the order, but it is assumed that they are the same for every address products are shipped to
- Upload a photo to file system for product: the uploading works on the local host, but not on the server

4 USER WALKTHROUGH

4.1 Features

Please navigate to: http://cosc304.ok.ubc.ca/61016655/tomcat/180degrees/180degrees.jsp

Home Page:

1	Navigate to products page to browse the top 20 Canadian schools, to see the best selling schools and top selling schools	
2	Once you select your desired institution, you will be allowed to make your customizations. Add to cart when finished	

| 3 | Your cart is displayed when you add your degree to your cart. From there you can check out or continue shopping. | |

| 4 | If you want to continue shopping, it will bring you back to the product page. You can reduce your options with a search bar. | |

| 5 | If you want to add a customized degree, you can navigate back to the home page by clicking on the header image. | |

| 6 | From the customize degree page, you can input any school, degree and faculty that you would like the degree to say. | |

| 7 | Your shopping cart shows all your items, along with the tax and shipping costs. | |

8	From your cart, you can remove items that you no longer wish to purchase .	**Date** **Price** 06/10/19 $400.00 **Remove from Cart**
9	When you are ready to check out you will be sent to the login page if you are not logged in.	**Login** You need to login before checking out Email Address: Password: Reset Submit Create Account
10	If you currently do not have an account, you can create one at that time. Feel free to try not adding anything or adding an invalid email address.	**Create Account** First Name — Tester Last Name — Numbertwo Email Address — test2@user.ca Password — ••••• **Create Account**
11	Once you click 'Create Account', you will be redirected back to the login page.	**Login** You need to login before checking out Email Address: test2@user.ca Password: ••••• Reset Submit Create Account

12	Once you are logged in, you will go back to the the home page where the user's name is displayed. A user that is logged in can now view their account information, view cart, or logout.	Tester Numbertwo Account Information Shopping Cart Logout their desired degree. university.com.

13	We will finish checking out by clicking shopping cart, then checkout. Shipping and Credit Card Information are asked. Feel free to add some invalid data again.	**Order Information** **Shipment Information** First Name — Jay Last Name — Jay Phone Number — 2508884444 Address — 123 University Way City — Kelowna Postal Code — V1V1V1 Province — BC Country — Canada **Credit Card Information** Card Number — 1234567890123456 Card Name — Jay Jay Card Expiration (MM/YY) — 10/21 Security Code — 222 Order

14	Once you click 'order', you will be sent to your order summary page. You can see the products ordered, prices, and shipping information.	

Order summary page content:

make a 180° life change

Tester Numbertwo
Account Information
Shopping Cart
Logout

Thank you for ordering the following products

Ranking	School	Faculty	Subject	Type	Honor Standing	Name	Date	Price
3	University of British Columbia	Engineering	Computer Engineering	Bachelor	Yes	John Doe	10/10/10	$400.00
0	University of Fun	Faculty of Tricks	Magic Tricks	Master	Yes	Sally Ham	11/11/11	$400.00
						Taxes		$96.00
						Shipping Cost		$5.95
						Order Total		$901.95

The products are going to be shipped to

Jay Jay
123 University Way
Kelowna BC V1V1V1
Canada

15	If you want to view your account information, you can access it from the header	Tester Numbertwo Account Information Shopping Cart Logout

16	On the user's account information page, you can view the name, email address, and past order summaries. A user can also change their password from this page.

Account Information

First Name   Tester
Last Name   Numbertwo
Email Address test2@user.ca

Change Password

Your Orders

		Order Date	Credit Card Number	Credit Card Name				
		2018-11-27	1234567890123456	Jay Jay				

Ranking	School	Faculty	Subject	Type	Honor Standing	Name	Date	Price
3	University of British Columbia	Engineering	Computer Engineering	Bachelor	Yes	John Doe	10/10/10	$400.00
	University of Fun	Faculty of Tricks	Magic Tricks	Master	Yes	Sally Ham	11/11/11	$400.00

17	You can log out by selecting the option in the header. To have access to the administrator portal, you can log in with the email address "admin@user.ca" and the password "admin". Now you have the choice to view the list of users or past orders, add products, or restore the database.

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Administrator Portal

List Users

List Sales and Orders

List Schools

Restore Database

18	The list users page shows the list of users registered, and gives the admin an option of adding a user from there

Users

Add User
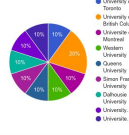
ID	First Name	Last Name	E-Mail Address
1	Admin	User	admin@user.ca
2	Test	User	test@user.ca
3	Maria	Brown	maria@brown.ca
4	Luke	Smith	luke@smith.ca
5	John	Miller	john@miller.ca
6	Linus	Williams	linus@williams.ca
7	Lisa	Jones	lisa@jones.ca
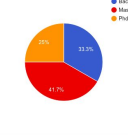
19	From the 'List sales and orders' page, you can see the past orders made, and charts showing how many degrees of each school, degree type and honour standing were sold.

Sales
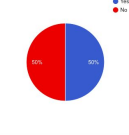
Top 20 Schools   Types   Honor Standing

Orders

Test User

Order From 11/27/2018
Credit Card XXXXXXXXXXX5678
Shipped To Test User
123 Street
City BC V6V6V6
Canada

Ranking	School	Faculty	Subject	Type	Honor Standing	Name	Date	Price
1	University of Toronto	Science	Mathematics	Bachelor	No	Test User	08/08/08	$650.00
10	Queens University	Education	Pedagogy	Phd	No	Test User	08/08/08	$700.00
							Taxes	$162.00
							Shipping Cost	$5.95
							Order Total	$1,517.95

Maria Brown

Order From 11/26/2018
Credit Card XXXXXXXXXXX1111
Shipped To Maria Brown
1234 Street

20	The admin has the ability to add and remove schools from the database	

5 SCHEMA

5.1 Assumptions

Entity / Relationship	Assumptions
User	A user is somebody who has registered an account on the website. It should be noted that a viewer does not have to be logged in to view the items. Also, a user does not need to place an order. Moreover, an administrative account exists for overview purposes.
School	The school table stores the top 20 Canadian schools according to the topuniversity website. Since the ranking is unique, it is used as the id. There can be multiple degrees from one school. Also, there can be school with no degrees.
DegreeOrder	DegreeOrder is used to store check out information, such as a unique ID, order date, price, and credit card information. Only credit card will be accepted. The credit card information is linked to an order only and not to an account for safety and security reasons. Also, an order may only come from one user. An order contains at least one degree and as many as possible.
Degree	For each degree ordered either from one of the top 20 schools or a customized school, the relevant information is stored in the degree table. If the school is one of the top schools, the degree is linked to that school. Otherwise, the school name is stored in Degree only and will not be added to the School table. Moreover, each customized degree belongs to only one order.
Shipment	When a user is placing an order, the shipment information also needs to be specified. Typical information such as address, name of receiver and contact information are filled in. There is only one shipment for each order, and a shipment only comes from one warehouse.
Warehouse	A warehouse fills and handles the shipment. However, there is only one warehouse at the moment, and it's in the City of Nowhere.

5.2 UML Diagram

Degree
- did : int {PK}
- price : decimal (15,2)
- ddate : char (8)
- name : varchar (50)
- dtype : varchar (20) {'Bachelor', 'Master', 'Phd'}
- honorStanding : boolean
- subject : varchar(100)
- faculty : varchar(100)
- schoolname : varchar(100)

Is From

School
- sid : int {PK}
- price : decimal (15,2)
- sname : varchar(100)
- LogoFileName : varchar(100)

0..*   0..1

Assumption:
1. There is only one warehouse.
2. Each shipment only comes from one warehouse.
3. Each shipment has one order only.
4. An user does not have to order anything.
5. There must be at least one degree/product in each order.
6. A degree does not have be offered by every school.

Contains   1..*   1

DegreeOrder
- oid : int {PK}
- odate : Date
- cardNumber : decimal (16, 0)
- cardName : varchar (50)
- cardExpiration : Char(5)
- securityCode : int
- Price : decimal (15,2)

Has   1   1

Shipment
- shipmentNumber : int {PK}
- address : varchar(50)
- city : varchar(50)
- province : varchar(50)
- country : varchar(50)
- postalCode : varchar(50)
- phoneNumber : decimal (10,0)
- firstName : varchar (50)
- lastName : varchar (50)

Fills   1..*   1

Warehouse
- wid : int {PK}
- address : varchar(50)
- city : varchar(50)
- province : varchar(50)
- postalCode : varchar(50)
- emailAddress : varchar (50)
- phoneNumber : decimal (10,0)

Has   0..*   1

User
- uid : int {PK}
- password : varchar(50)
- firstName : varchar(50)
- lastName : varchar(50)
- emailaddress : varchar(50)

5.3 Relational Schema - SQL DDL

```
CREATE TABLE Warehouse (
        wid                 INTEGER      NOT NULL,
        address             VARCHAR(50)  NOT NULL,
        city                VARCHAR(50)  NOT NULL,
        province            VARCHAR(50)  NOT NULL,
        postalCode          VARCHAR(50)  NOT NULL,
        emailAddress        VARCHAR(50)  NOT NULL,
        phoneNumber         DECIMAL(10,0) NOT NULL,
        PRIMARY KEY (wid)
);

CREATE TABLE Shipment (
        shipmentNumber      INTEGER      NOT NULL      AUTO_INCREMENT,
        address             VARCHAR(50)  NOT NULL,
        city                VARCHAR(50)  NOT NULL,
        province            VARCHAR(50)  NOT NULL,
        country             VARCHAR(50)  NOT NULL,
        postalCode          VARCHAR(50)  NOT NULL,
        phoneNumber         DECIMAL(10,0)  NOT NULL,
        firstName           VARCHAR(50)  NOT NULL,
        lastName            VARCHAR(50)  NOT NULL,
        wid                 INTEGER      NOT NULL,
        PRIMARY KEY (shipmentNumber),
        FOREIGN KEY (wid) REFERENCES Warehouse(wid)
                ON DELETE NO ACTION
                ON UPDATE CASCADE
);

CREATE TABLE User (
        uid                 INTEGER      NOT NULL      AUTO_INCREMENT,
        password            VARCHAR(50)  NOT NULL,
        firstName           VARCHAR(50)  NOT NULL,
        lastName            VARCHAR(50)  NOT NULL,
        emailAddress        VARCHAR(50)  NOT NULL      UNIQUE
        PRIMARY KEY (uid)
);

CREATE TABLE School (
        sid                 INTEGER      NOT NULL,
        price               DECIMAL(15,2) NOT NULL,
        sname               VARCHAR(100) NOT NULL,
        logoFileName        VARCHAR(100),
        PRIMARY KEY (sid)
);
```

```
CREATE TABLE DegreeOrder (
        oid                 INTEGER     NOT NULL    AUTO_INCREMENT,
        odate               DATE        NOT NULL,
        cardNumber          DECIMAL(16,0) NOT NULL,
        cardName            VARCHAR(50) NOT NULL,
        cardExpiration      CHAR(5)     NOT NULL,
        securityCode        INTEGER     NOT NULL,
        price               DECIMAL(15,2) NOT NULL,
        shipmentNumber      INTEGER     NOT NULL,
        uid                 INTEGER     NOT NULL,
        PRIMARY KEY (oid),
        FOREIGN KEY (shipmentNumber) REFERENCES Shipment(shipmentNumber)
                ON DELETE NO ACTION
                ON UPDATE CASCADE,
        FOREIGN KEY (uid) REFERENCES User(uid)
                ON DELETE NO ACTION
                ON UPDATE CASCADE
);

CREATE TABLE Degree (
        did                 INTEGER     NOT NULL    AUTO_INCREMENT,
        price               DECIMAL(15,2) NOT NULL,
        ddate               CHAR(8)     NOT NULL,
        name                VARCHAR(50) NOT NULL,
        dtype               VARCHAR(20) CHECK(dtype IN ('Bachelor', 'Master', 'Phd')),
        honorStanding       BOOLEAN,
        subject             VARCHAR(100) NOT NULL,
        faculty             VARCHAR(100) NOT NULL,
        schoolname          VARCHAR(100) NOT NULL,
        sid                 INTEGER,
        oid                 INTEGER     NOT NULL,
        PRIMARY KEY (did),
        FOREIGN KEY (sid) REFERENCES School(sid)
                ON DELETE SET NULL
                ON UPDATE CASCADE,
        FOREIGN KEY (oid) REFERENCES DegreeOrder(oid)
                ON DELETE SET NULL
                ON UPDATE CASCADE
);
```
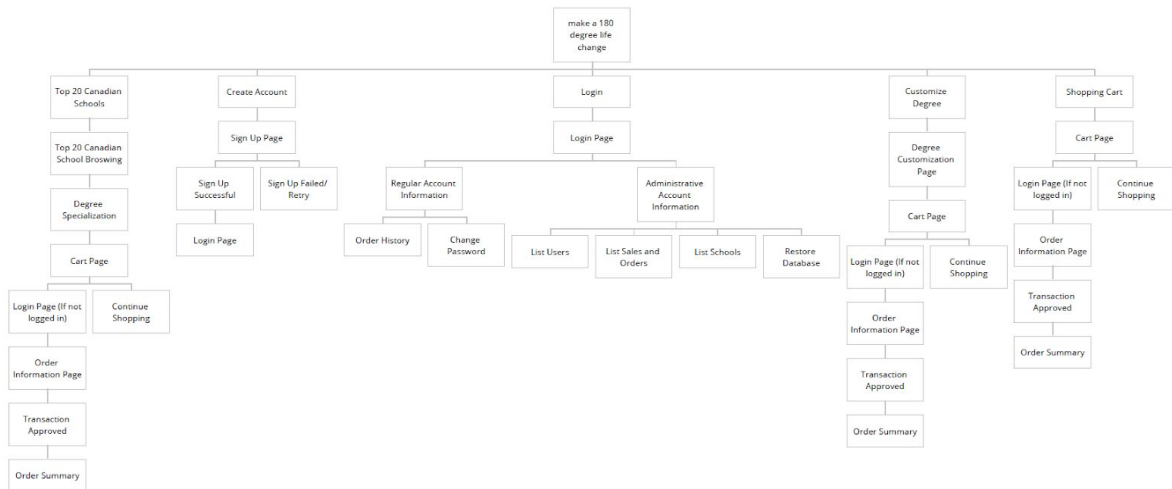
5.4 Site Map

6 CONCLUSIONS

Even though 180degrees would have a lot of stressed out and desperate students as customers, legal restrictions prevent it from launching any time soon. However, it is still nice to be able to escape the everyday life at university for a moment to dream about a future in which you can have the degree of your dreams without having to put any effort into getting it.