Web Services and Cloud Technologies – Practical Teamwork Project 2014

Project Description

Design and implement a RESTful API, host it in the cloud and develop a client application.

General Requirements

Please define and implement the following assets in your project:

Requirements for the RESTful API

- Use **ASP.NET WebAPI**
  - Your application must be implemented using ASP.NET WebAPI
- Provide a **RESTful API**
  - The endpoints should provide CRUD operations: POST, GET, PUT and DELETE
- Host the application in the cloud
  - Use **AppHarbor**
- Use a **file storage cloud API**
  - **Dropbox**, **Google Drive** or other
- Use a **cloud database**
  - **MS SQL**, **MySQL**, **MongoDB**, **Redis** or other
- Implement notifications functionality
  - Use **PubNub** or other

Requirements for the Client application

- The client application can be one of the following:
  - **Web SPA** application using JavaScript
  - **iOS mobile** application
  - **Android mobile** application
  - **Windows 8/Windows Phone 8 mobile** application
  - **Cross-platform mobile application** using Apache Cordova, Xamarin or other
  - **Windows desktop application** using WPF, Windows Forms or the console
- The **client application** must send **HTTP requests** to the RESTful API

Additional Requirements

- Follow the **best practices for OO design**: use data encapsulation, use exception handling properly, use inheritance, abstraction and polymorphism properly and follow the principles of strong cohesion and loose coupling
- Create a **solid validation** on both the Web services application and on the client application
- Use a source control system by choice

Optional Requirements

If you have a chance, time and a suitable situation, you might add some of the following to your project:

- Usage of **message queues**
- **Unit** and/or **integration** testing

Deliverables

Put the following in a **ZIP archive** and submit it (each team member submits the same file):

- The complete **source code**
- Add **webservices.teamwork@gmail.com** as a collaborator to your project in AppHarbor
- Brief **documentation** of your project (2-3 pages). It should provide the following information (in brief):
  - Team name and list of team members
  - Project purpose – what problem do you solve?
  - Class diagram of your types
  - The URL of your source control repository
  - Any other information (optionally)
- Optionally provide a **PowerPoint presentation** designed for the project defense

Public Project Defense

Each team will have to deliver a **public defense** of its work to the other students and trainers. You will have **only 5 minutes** for the following:

- **Demonstrate** the application (very shortly)
- Show the **class diagram** (just a glance)
- Show the **source code** in the source control system code browser
- Show the **commits logs** to confirm that team member have contributed
- Optionally you might prepare a PowerPoint presentation (3-4 slides)

Please be **strict in timing**! Be **well prepared** for presenting maximum of your work for minimum time. Bring your own laptop. Test it preliminary with the multimedia projector. Open the project assets beforehand to save time. You have **5 minutes**, no more.

Give Feedback about Your Teammates

You will be invited to **provide feedback** about all your teammates, their attitude to this project, their technical skills, their team working skills, their contribution to the project, etc. The feedback is important part of the project evaluation so **take it seriously** and be honest.