

## Instructions

1. Read the *2019-2020 Guidelines to Capstone Project* document uploaded on the course webpage in full.
2. Schedule a meeting with your Capstone Advisor in Spring 2019 to discuss your ideas for a Capstone project.
3. Fill out this form. Please save your form along with your complete proposal as a single PDF file using the following naming convention: CapPro-YourName-19-20.pdf
4. Obtain signature from your advisor and oral defense committee members.
5. In addition to online submission of the electronic copy, please submit one signed copy to the Teaching Affairs Office of the Honors College, Rm. 617, 4th Lecture Hall, Main Campus of BJUT.

\*All students submitting a proposal for a Capstone Project must submit this form for approval at the time of course registration for the 2019-2020 academic year.

## Student Information

Last Name	<input type="text" value="Wang"/>	First Name	<input type="text" value="Shiyu"/>
BJUT Student ID	<input type="text" value="16021019"/>	Graduation Year	<input type="text" value="2020"/>
Undergraduate Program	<input type="text" value="Computer Science and Technology"/>		
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City	<input type="text" value="Beijing"/>	Zip Code	<input type="text" value="100124"/>
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## Primary Faculty Advisor Information

Last Name	<input type="text" value="Zhu"/>	First Name	<input type="text" value="Wenjun"/>
BJUT Faculty ID	<input type="text" value="05960"/>		
College	<input type="text" value="Faculty Information Technology"/>		
Title	<input type="text" value="Professor"/>		
Office Address	<input type="text" value="Beijing University of Technology"/>		
Phone Number	<input type="text" value="18614086048"/>	E-Mail Address	<input type="text" value="zhuwenjun@bjut.edu.cn"/>

## Secondary Faculty Advisor Information (If Applicable)

Last Name	<input type="text"/>	First Name	<input type="text"/>
BJUT Faculty ID	<input type="text"/>		
College	<input type="text" value="Faculty Information Technology"/>		
Title	<input type="text" value="Professor"/>		
Office Address	<input type="text"/>		
Phone Number	<input type="text"/>	E-Mail Address	<input type="text"/>

## Project Information

Project Title	<input type="text" value="Design and Implementation of iOS-Oriented Financial Data Analysis Software"/>		
Project Description	<div><p>Nowadays, financial data is informationized and financial data analysis software can help bank staff to operate many financial businesses more conveniently, promote the innovation of traditional financial institutions, and improve the efficiency of operation.</p><p>In order to let banks understand all kinds of financial related information of enterprises better and safely, it is necessary to construct corresponding financial data analysis software, which can integrate various types of financial information published by different sources and store them in a database, then analysis them according to relevant data and indicators.</p><p>The client of this project can be divided into five modules: Company Search, Financial Report, Business Opportunity, User Management, and PDF Generation.</p></div>		
Total Project Budget	<input type="text" value="10000"/>	Requested Amount	<input type="text" value="6000"/>
Percent of Total Budget	<input type="text" value="60%"/>		
Type of Request	<input type="text" value="Start Up"/> 		
Grant Period From	<input type="text" value="2019.9.5"/>	Grant Period To	<input type="text" value="2020.6.30"/>
Multi-Year?	<input type="radio"/> Yes <input checked="" type="radio"/> No		

Educational Impact

This project will help bank staff to operate many financial businesses more conveniently and help them assessment business opportunities for enterprises.

Student Signature: Wang Shiyu.

## Faculty Endorsement

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I have discussed this project and my expectations with the student. The description reflects the project we will be working on.

Faculty Signature: Zhu Wenjun

Date 2019.9.6

## Committee Evaluation

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The following conclusions are made upon evaluation of the student's Capstone Proposal.

Conclusion ☐ Pass  
☐ Fail

Committee Signature: \_\_\_\_\_

Date

Associate Dean Signature: \_\_\_\_\_

Date

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### OFFICIAL USE ONLY

Date Received: \_\_\_\_\_

Staff Signature: \_\_\_\_\_

## **Introduction.**

Nowadays, financial data is informationized and financial data analysis software can help bank staff to operate many financial businesses more conveniently, promote the innovation of traditional financial institutions, and improve the efficiency of operation.

In order to let banks to fully understand all kinds of financial related information of enterprises better and safely, it is necessary to construct corresponding financial data analysis software, which can integrate various types of financial information published by different sources and store them in a database, and according to relevant data and indicators. Automatic analysis, including user management subsystem, financing management subsystem, business opportunity subsystem, etc.

## **Description of the problem.**

iOS, like Apple's Mac OS X operating system, belongs to the Unix-like commercial operating system. The original system name is iPhone OS. Because the iPad, iPhone and iPod touch all use the iPhone OS, the 2010 WWDC conference announced the renaming of iOS. With the rapid development of Apple, the era of Apple's mobile phone, which began with the iPhone, has arrived. At the same time, the level of development on the iOS side is constantly evolving<sup>[1]</sup>. Compared with the development of Android platform, iOS adopts a sandbox operation mechanism. For the sake of security mechanism, applications can only access the system files created by the application, but cannot access the files of other applications, which greatly improves the security of iOS development and the convenience of using the program, but also brings the

problem of poor scalability.

At present, domestic and foreign financial data analysis methods include financial statement analysis method and risk environment analysis method<sup>[2]</sup>:

- (1) Analysis of financial statements. The financial statement analysis method can process, analyze, compare and evaluate the data on the financial statements of an enterprise, which can fully reflect whether the financial situation of the enterprise is good or not, whether the operation and management are sound or not, and whether the business prospects are bright or not. In addition, we can find out the problems in enterprise management through analysis, and put forward corresponding solutions to these problems.
- (2) Risk environment analysis method. Risk environment analysis method can be used to identify specific enterprise risks. According to the internal and external environment of the enterprise, systematic analysis can be carried out to infer the risks and potential losses of the enterprise in the enterprise environment.

### **Literature review.**

Generally speaking, China's financial software industry has gone through three stages:

Firstly, the financial IT stage, the traditional IT software and hardware are mainly used by the financial industry to realize the electronization of office and business. Software companies do not participate in the business links of financial enterprises, but belong to cost departments, such as ATM, POS, credit system, etc.

Secondly, the informative financing stage, financial enterprises build online

business platforms, realize the interconnection and interoperability of financial business through Internet channels, and realize information sharing and business matching. Such as P2P, Internet insurance and mobile payment.

Thirdly, the stage of financial science and technology, financial enterprises use big data, cloud computing, AI technology and block chain technology to collect information, make investment decisions and so on, which can greatly improve the efficiency of the financial industry, such as large data credit, intelligent investment, etc.

Now it is in the third stage. China has a large population and rapid economic development. The financial industry has always been the most important part of the national economy. Therefore, as a tool of the financial industry, the financial software industry will have a broad market space. In the Internet era, the financial software industry is demanding more and more technology, not only the comprehensiveness and update speed of data, but also the data security requirements are extremely strict. In recent years, with the support of government policies for financial software, the financial software industry has developed rapidly and the market scale has increased by more than 20%, which is the general trend of market development.

### **Description of the project.**

The iOS-based financial data analysis software system implemented in this project includes nine modules: Company Search, Financial Report, Business Opportunity, User Management, and PDF Generation. Financial Report Management Subsystem contains nine modules: Enterprise search, Company information, Company basic details, Manager information, Historical information, Shareholder background, Production and

operation, Financial situation and Capital raising situation. Business Opportunity has Business opportunity analysis, Company search, Outline of business opportunities, details of business opportunities, and Generation of PDF five parts.

The system adopts MVC architecture. The client communicates with the server through HTTP protocol. According to the corresponding interface ,server responds to the client's request and writes, modifies, searches and deletes the data in the database.

### **References.**

- [1] Hong-Jiao Ma, Meng Li, Kang Wang, Zhong Dou, Haifeng Jiang. NTP network timing technique research for Android and iOS mobile platform[C]. 2014
- [2] 石国辉. 基于银行凭证的金融数据分析系统设计与实现, 2017.03
- [3] Mark H.Goadrich, Michael P.Rogers. Smart smartphone development: iOS versus Android. ACM New York, NY, USA, 2011
- [4] Zdziarski J A, iPhone open application development. O'Reilly, 2008
- [5] 韩明希, 尚玉芳.新时期的互联网金融模式研究[J].商场现代化.2015