DEVELOPMENT OF RESEARCH CENTER IN IBSU

WITHIN THE
SILK ROAD SCIENTIFIC RESEARCH INSTITUTE

(proposal)

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-2015-

Purpose of the Research Center

The purpose of the Research Center at IBSU is to minimize the gap between the studying process at the university and working process after graduating.

Every university tends to minimize this gap using different methods, but the most effective is establishing research labs.

The aim of the Research Center is to bring IBSU students as close as possible to the reality they will have to deal with at the potential working place.

IBSU
Studying
Process

IBSU
(At Research Labs)
Study
+
Work

Firm
Work

Another purpose of the Research Center is the unification of the practical scientific potential of the leading university instructors in various fields with the best students for developing projects.

Project rowndabout

As any project requires experts in different fields (marketing analysis, business evaluation, computer software development, statistical analysis, documentation management, advertisement etc.) the Research Center **have** **to involve staff and students from different faculties***.*

Finally, the Research Center **will attract potential customers and sponsors to contribute to the projects financially***. The companies will have the opportunity to get to know the young specialists beforehand and attract them to their organizations as future employees.*

(As it is done in many Western universities)

These are the factors in support of the establishment of the Research Center with the series of Research Laboratories at different faculties.

IBSU Research Center

| Lab 1 | Lab 2 | | Lab N |

Faculty of Computer Science and Engineering

At the moment the Faculty of Computer Science and Engineering offers three projects within the research laboratories:

1. Data Management Technologies (Data Center)

   (Supervisor: Prof. Dr. Nodar Momtselidze)

2. Android-based Programming

   (Supervisor: MSc. Paul R. Querelle)

3. Robotics

   (Supervisor: MSc. George Usanetashvili)

Data Management Technologies (DataCenter)

➢ In Data Management Technologies work is concentrated on the evaluation and development of Operational data stores that allow flexible schemas Hadoop distributions Real-time Hadoop-based analytical platforms Hadoop-based BI solutions.

➢ We are interested to benchmark new software platforms for storing and processing massive amounts of data and for analytics beyond what conventional relational systems can do.

➢ We are interested to test such systems against domain specific workloads to perform data clustering, predictive modeling, and complex statistics.

An Emerging Career Awaits you

DIPLOMA IN BIG DATA DEVELOPER

University's Big Data Multicomputer System

Step into Research

The 'Step into Research' program is an exciting new initiative by the Computer and Engineer Faculty.

It provides an opportunity for undergraduate and master students who are considering a future career in research to obtain valuable work experience in a busy research laboratory during the several semesters.

The aim of the scheme is to match students with placement supervisors, who then go on together to apply for a bursary to support the placement.

On studying and Development

Student with the high GPA can register for one of these projects. The recommended duration for the project will be no less than two semesters.

✓ The first semester covers working on the project where the students will be involved in the group work, study necessary technologies (under the control of the supervisor), study to write documentation, study to be initiative, learn to defense their proposal and do the first trial of the project.

✓ The second semester will be dedicated to the development of real project (on inner or outside order).

Internet

Crawlers

H A D O O P

mappers

reducers

HBASE
dictionary
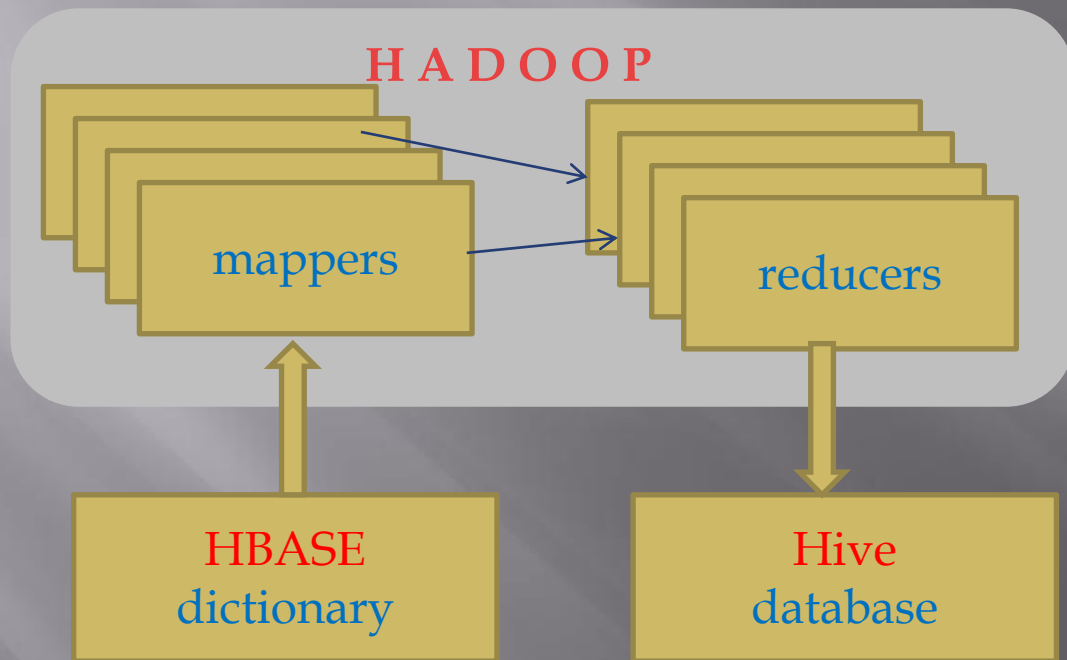
Hive
database

Tasks, have to be developed – this semester

➢*Create Hadoop multycomputer (5) System.*
➢*Install OS (Linux).*
➢*Install and configure map / reduce, Hive, Hbase, Crawler.*
➢*Develop programm to collect information from internet.*
➢*Develop Hbase dictionary, and Hive database.*
➢*Calculates number of needed word combination, using map / reduce technology, filters with the help of Hbase dictionary. Then summarize number of searched word combination and create database with Hive technology.*
➢*Create Data Warehouse*

```
1:class Mapper
2:      method Map(docid a, doc d)
3:              for all term t ∈ doc d do
4:                      if term t ! ∈ HBase
5:                      Emit(term t, count 1)


1: class Reducer
2:      method Reduce(term t, counts [c1, c2, . . .])
3:              sum ← 0
4:              for all count c ∈ counts [c1, c2, . . .] do
5:                      sum ← sum + c
6:              Emit(term t, count sum)
7:              To Hive
```

❖   Each project is divided into several subprojects, where each is under the responsibility of the certain pair of students.

❖   The end of the semester is dedicated to the unification of the subprojects into one. Every fortnight the pairs present the progress report; discuss issues with the project participants and collaborate on the interface and schedule of the operation.

Working marks

At the end of the semester the students of each group present an article and defend it on the open seminar at the board (for having it printed in the journal) or present it at the conference and print in a conference proceeding

 (minimum requirement, from 51 to 70 points mark, according to regulation).

The project done by the subgroup (valid, with the documentation included) is evaluated with a higher point. (from 71 to 100 points)

An article and the engineering integrated into the final project is evaluated with the maximum point.

Contacts with outer organization

While the development, organization representatives, will try to invite chief specialists, from firms working in this fields, to seminars which carry out in IBSU to make them be acquainted with future employees, give recommendation to the direction of work, and find sponsors for future work.

And at last, good evaluation of Research Center and its publicity brings to our university new wave of perspective young school-leavers

A n y   Q u e s t i o n ?

Thank you