Centralised Admission System "CAS"

"For admission to Universities in Kingdom of Saudi Arabia"

SELP 695 - Systems Engineering Integrative Project

Name: Ayman Alyoubi
Date: 4/30/2015
Professor: Dr. Fred S. Brown
About the Project

- A single university application submission process for students
- Comprehensive Admission System for Universities
- Save time and effort on the part of both the students and the universities
- System shall also provide statistical analysis based on information from past applicants and acceptance rates

Background

- Kingdom of Saudi Arabia (KSA) is an up and coming country
- It is one of the fastest growing markets in built asset performance compared to the world’s 30 highest grossing countries [1]
- The percentage of young population in the country is significantly high in comparison to the US [2]
- Enrolment into high schools of the youth is very high at 92% [3]
The Status of Higher Education in KSA

- 24 Public Universities in KSA
- 45 Technical colleges
- 98 vocational training centres [4]
- Government funded universities enjoy a very good reputation and social standing among people of KSA
- Still, only 50 percent of high school graduates enrol into universities
The Problem

- Out of the 24 universities, the old and more reputed are most sought after
- The old universities receive maximum applications as people expect such institutions to promise a bright future
- The relatively newer universities are therefore often neglected or overlooked
- It can be a daunting task for students to apply in the different universities
- Repeatedly applying for different universities by students while keeping up with school activities and regular studies is tedious

Needs Assessment

- Assert the realistic need of such a system
- Methods Used:
  - Survey- 10 Questions for staff members
  - Questionnaire- 5 Questions for college principals and board members
## Needs Assessment Scorecard
(Survey Likert Score)

<table>
<thead>
<tr>
<th>No.</th>
<th>Question</th>
<th>Likert Score</th>
<th>Symbol</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>The current admission process for higher education is difficult to manage</td>
<td>3.68</td>
<td>A</td>
</tr>
<tr>
<td>2</td>
<td>Students find it difficult to use the current admission system</td>
<td>3.57</td>
<td>A</td>
</tr>
<tr>
<td>3</td>
<td>A central admission system will make the admission transparent</td>
<td>3.64</td>
<td>A</td>
</tr>
<tr>
<td>4</td>
<td>A central admission system will reduce the burden on students</td>
<td>3.36</td>
<td>A</td>
</tr>
<tr>
<td>5</td>
<td>A central admission system will allow students more choice in selecting the colleges</td>
<td>3.66</td>
<td>A</td>
</tr>
<tr>
<td>6</td>
<td>A central admission system will help colleges to find the best students</td>
<td>3.45</td>
<td>A</td>
</tr>
<tr>
<td>7</td>
<td>Learning the new IT based, central admission process will be difficult and time consuming</td>
<td>2.60</td>
<td>NAD</td>
</tr>
<tr>
<td>No</td>
<td>Question</td>
<td>Likert Score</td>
<td>Symbol</td>
</tr>
<tr>
<td>----</td>
<td>--------------------------------------------------------------------------</td>
<td>--------------</td>
<td>--------</td>
</tr>
<tr>
<td>8</td>
<td>A central admission system is not suitable for KSA education system</td>
<td>1.98</td>
<td>D</td>
</tr>
<tr>
<td>9</td>
<td>My college will accept this new central admission system</td>
<td>3.06</td>
<td>A</td>
</tr>
<tr>
<td>10</td>
<td>It will be difficult to implement the new central admission system</td>
<td>2.85</td>
<td>NAD</td>
</tr>
</tbody>
</table>

**Score Interpretation**

<table>
<thead>
<tr>
<th>Score</th>
<th>Symbol</th>
<th>Score Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.01 to 5.00</td>
<td>SA</td>
<td>Strongly Agree</td>
</tr>
<tr>
<td>3.01 to 4.00</td>
<td>A</td>
<td>Agree</td>
</tr>
<tr>
<td>2.01 to 3.00</td>
<td>NAD</td>
<td>Neither Agree nor Disagree</td>
</tr>
<tr>
<td>1.01 to 2.00</td>
<td>D</td>
<td>Disagree</td>
</tr>
<tr>
<td>0.00 to 1.00</td>
<td>SD</td>
<td>Strongly Disagree</td>
</tr>
</tbody>
</table>
Objective of the Project

- Unification of a method in which prospective students apply to all public universities
- Integration of male and female application process
- Provide a highly secure but accessible database that stores all applicant information that all universities can access
- Accurately provide statistics on likelihood of admittance to specific universities based on high school marks and test scores, for the purpose of helping to direct traffic to newer universities that do not meet their student enrolment quota
- Efficiently report status updates and results to admission process to applicants [5]
The Stakeholders

- The Ministry of Higher Education (MHE)
- The Ministry of Education (ME)
- The 24 Universities
- The Applicants
- The National Centre for Assessment in Higher Education (Qiyas)
Ministry of Higher Education (MHE)

- Primary Stakeholder for the project
- Responsible for government policy in higher education in Saudi Arabia
- The technological implementation of the system will be hosted by IT Department
- IT Department of MHE
  - Responsible for housing and maintaining the system
  - Database management and upkeep
  - Ensure security of data
  - Provide university admission staff access to the student records
Ministry of Education (ME)

- Responsible for the government policy for primary, intermediate, and secondary education in Saudi Arabia
- Role is limited to coordination with MHE
- IT Department of ME maintains the record of the high school students
- These records would have to be shared with the MHE for the student’s personal details, high school marks verification etc.
Government Universities

- Vice President
- The Admission Dean
- University IT Department
  - Works with MHE IT Department
  - Ensures secure connection
  - Authorises its admission staff for access to student database and university applications
The Applicants

- Actual users of the system
- Shall be using the system’s front-end (User Interface)
  - Fill out the college application forms
  - Use analytics to determine the universities where they are likely to be accepted
  - Monitor their applications
  - Use the system to finally pick the institution to which they are selected
National Centre for Assessment in Higher Education (Qiyas)

- Is an international reference in the field of measurement and evaluation
- Provides comprehensive and integrated solutions that scientifically measure and evaluate knowledge, skills and aptitude with the purpose of achieving fairness, maintaining quality and satisfying development needs [6]
- Responsible for providing access of test records when applicants submit an application to any university
System Requirements

- Top-Level Requirement

- Secondary-Level Requirements
  - Application Process
  - Database Requirements

Top Level Requirement

- Define one admission system for all government universities in the Kingdom of Saudi Arabia.

- The system shall be paid for by the government
Second-Level Requirement
Application Process

- The system interface shall be navigable and intuitive.
- The system shall eliminate all associated paperwork and handle applications digitally.
- The system shall request a common set of data from all applicants regardless of action/college.
- The system shall allow applicants to view the analytics on how they stack against past anonymous applicants.
- The system shall clearly show the applicant the status of completion of their application while they work on the application.
- The application shall engage an automatic lock-down after five failed attempts to input an authorised credential.
- The application shall engage an automatic time-out feature after 15 minute of idle time
Second-Level Requirement

Database Requirements

- The database shall store at least 10 million applicants data; 1.5 million of the annual average applicant pool, and at least for the last five years worth of applicant pools.

- The database shall have access to a server that conducts the data handling processing of information and statistics.

- The database shall be redundant in two other geographical locations.

- The database shall be backed-up every night at 3 AM AST.

- The server and database shall be available and accessible at all times using power redundancy back with UPS batteries.

- The database shall be secure against unauthorised access using professional network security services/tools.

- The database shall provide secure access to authorised access using highly secure data exchange protocol (TBD).

- The database shall allow access only to authorised system administrators using credentials controlled by the MHE IT department.

- The database shall withstand network saturation with high bandwidth availability during peak usage periods.

- The database shall withstand up to 1.5 million simultaneous users.
The Three Systems Defined
“Con-Ops”

- Existing System
- Comparison System (in US and other countries)
- Proposed System
Existing System

- Applicant applies to all the different universities individually
- Repeated process of application and filling forms for different universities
- Personal identification, document verification and test scores are evaluated after the candidate is short-listed
- The total time from the beginning of the admissions process to the decision takes approximately 66 days

"Concept of Operations with Respect to Time for Current System"
Comparison System

- Common application ID for every student
- Can apply into 400+ universities through this ID
- Dashboard displays the application status of each university applied for
- Common application lets applicants to either add new universities they are interested in
- Also input all the personal information of the applicants
- All documents are also to be uploaded before the processing of application can begin
- Individual criteria of every university is provided to successfully apply for it.
- Upon complete of all sections within a university's checklist, the status of each section will turn to 'ready'
't = 0; Application Submission  
Duration: 60 days

\[ \text{t = 60 days; Processing} \]
\[ \text{Duration: 60 days} \]

\[ t = 120 \text{ days; Results} \]
\[ \text{Duration: 14 days} \]

\[ t = 134 \text{ days; Decision} \]
\[ \text{Duration: 30 Days} \]

\[ t_{\text{final}} = 164 \text{ days} \]

"Concept of Operations with Respect to Time for Comparison System"
Proposed System

• The user will input all of their personal information
• Will be allowed to apply for all the 24 universities
• System can provide statistical analysis on an applicant’s likelihood of being accepted into a university’s program
• For further consideration applicants may be required to upload relevant documentation, which will be requested in latter parts of the application process
• Results would be accessible online
• After being accepted into a program, Students then must decide by a decision date where they will decide to register for admission
t = 0; Application Submission
Duration: 7 days

KAU Seats Availability

Auto Enrollment

CAS

t = 7 days; Automatic Enrollment
Duration: < 1 day

t = 7 days; Results
Duration: < 1 Day

CAS

Your result is in...

Reveal

Congratulations!! You have been accepted to

CAS

Time Logged On:
Mar 25, 2015
Time-out In: 08:38

$ t_{\text{final}} = 8 \text{ days} $
Solutions

- Existing Solution
- Comparison Solution
- Proposed Solution
Existing Solutions

- No Centralised admission system
- Students have to apply for different universities individually
- Often the process of filling applications is repeated
- Verification of the documents takes place after the short-listing of candidates

"Admission portal for Umm Al-Qura University"
Comparison Solution

- Biggest and most popular single application system
- As many as 400+ universities in as many as seven countries can be applied through a single common application ID.
- Ivy League Colleges, Carnegie Mellon University, King's College London, New York University are few famous colleges
- Common Application is for both first-year admission and for transfer admission
- Enables accuracy of information of the applicants
- Smaller universities attest to the efficacy in gaining visibility in such a large pool of colleges in the US for students to choose from [7]

“Common Application Website Screenshot”
Proposed Solution

- Enables students with a centralised system similar to that of comparison solution
- Student Information has to be entered first into the system
- The system will provide detailed analytics
- The proposed admission system will be IT based where the application is completely digital and accessible at all times online
- Universities will be registered under an account of one of two types:
  - Raw Data Account (RDA)
  - Processed Data Account (PDA)

“CAS Application Interface”
Analysis of Alternatives (AoA)

- Identify the current process and alternative solutions

- Define the measures for assessment of alternatives through Measure of Effectiveness (MoE)

- Assess the each alternative versus measures [8]
Measure of Effectiveness (MoE)

- Defined as quantifiable benchmarks used in comparing the system concept and implementation
- highlight any and all issues that might affect the system including safety, performance and quality
- MoE for the three systems:
  1. Communication & Coordination - the system’s ability to communicate efficiently and expeditiously to other parts of the system
  2. System Reparability - the system’s ability to repair itself in case of failure
  3. System Reliability - the system’s ability to be available and working at all times
  4. System Robustness - the system’s ability to manage and recover from any external influence
  5. System Upgradeability - the system’s ability to change with the development of technology
  6. Uninterrupted Service - the system’s ability to provide seamless service to users
  7. System Safety - the system’s ability to maintain the security of the system [8]
## Analysis of Existing System

<table>
<thead>
<tr>
<th>Measure</th>
<th>Effectiveness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication and Coordination</td>
<td>Low</td>
</tr>
<tr>
<td>System Reparability</td>
<td>Medium</td>
</tr>
<tr>
<td>System Reliability</td>
<td>High</td>
</tr>
<tr>
<td>System Robustness</td>
<td>High</td>
</tr>
<tr>
<td>System Upgradeability</td>
<td>High</td>
</tr>
<tr>
<td>Uninterrupted Service</td>
<td>N/A</td>
</tr>
<tr>
<td>System Safety</td>
<td>Medium</td>
</tr>
</tbody>
</table>
## Analysis of Comparison System

<table>
<thead>
<tr>
<th>Measure</th>
<th>Effectiveness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication and Coordination</td>
<td>Medium</td>
</tr>
<tr>
<td>System Reparability</td>
<td>High</td>
</tr>
<tr>
<td>System Reliability</td>
<td>High</td>
</tr>
<tr>
<td>System Robustness</td>
<td>Medium</td>
</tr>
<tr>
<td>System Upgradeability</td>
<td>High</td>
</tr>
<tr>
<td>Uninterrupted Service</td>
<td>High</td>
</tr>
<tr>
<td>System Safety</td>
<td>Medium</td>
</tr>
</tbody>
</table>
### Analysis of Proposed System

<table>
<thead>
<tr>
<th>Measure</th>
<th>Effectiveness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication and Coordination</td>
<td>High</td>
</tr>
<tr>
<td>System Reparability</td>
<td>High</td>
</tr>
<tr>
<td>System Reliability</td>
<td>High</td>
</tr>
<tr>
<td>System Robustness</td>
<td>Medium</td>
</tr>
<tr>
<td>System Upgradeability</td>
<td>High</td>
</tr>
<tr>
<td>Uninterrupted Service</td>
<td>High</td>
</tr>
<tr>
<td>System Safety</td>
<td>Medium</td>
</tr>
</tbody>
</table>
## Summary of Analysis

<table>
<thead>
<tr>
<th>Measure of Effectiveness (MOE)</th>
<th>Existing System (ES)</th>
<th>Comparison System (CS)</th>
<th>Proposed System (PS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication &amp; Coordination</td>
<td>Low</td>
<td>Medium</td>
<td>HIGH</td>
</tr>
<tr>
<td>System Reparability</td>
<td>MEDIUM</td>
<td>HIGH</td>
<td>HIGH</td>
</tr>
<tr>
<td>System Reliability</td>
<td>HIGH</td>
<td>HIGH</td>
<td>HIGH</td>
</tr>
<tr>
<td>System Robustness</td>
<td>HIGH</td>
<td>MEDIUM</td>
<td>MEDIUM</td>
</tr>
<tr>
<td>System Upgradeability</td>
<td>HIGH</td>
<td>HIGH</td>
<td>HIGH</td>
</tr>
<tr>
<td>Uninterrupted Service</td>
<td>N/A</td>
<td>HIGH</td>
<td>HIGH</td>
</tr>
<tr>
<td>System Safety</td>
<td>MEDIUM</td>
<td>MEDIUM</td>
<td>MEDIUM</td>
</tr>
</tbody>
</table>

**Legend:**
- **HIGH** = High Effectiveness
- **MEDIUM** = Medium Effectiveness
- **LOW** = Low Effectiveness
- **N/A** = Not Applicable
System Identification/Characterisation

- The system's primary functions:
  - Obtain applicant information
  - Verify high school marks and test scores
  - Calculate Cumulative Score Index
  - Automatically enroll applicants
  - Return admissions results

- Internal processes: application processing, information verification, database maintenance and backup, Interface, and site management

- Products: standard application, analytics

- Customer for the system: university applicants

- Supplier for the system: Government of Saudi Arabia/Ministry of Higher Education

- Future upgrade: incorporation of private universities, other analytics
System Architecting Process

- Gathering architecture data
- Identifying their composition into related architecture components or composites
- Modeling the relationships among those composites

Heuristic Approach

- We don’t really know what works until we try it
- Don’t ever try to build it all at once - evolve the system based on highest value early, and rapid learning about realities
- The most critical requirements and critical designs are probably soft, not hard. and most ‘engineers’ are not social engineers
- Design the structure with good “bones” [9]
Operational View

Existing System

- All stakeholders transfer information bi-directionally to each entity within the system
- Each applicant applies to each desired university and submits their test scores retrieved from the Qiyas
- Public universities verify this information with the Qiyas and work with the Ministry of Higher Education to process the applicant’s information
- The Ministry of Higher Education also manages Qiyas during this admissions process
"Operational View of the Existing System"
Operational View

Comparison System

- Uses a central database to retain all information relevant to applicants during the admissions process
- The Common Application is the portal for applicants to this database as well for the public universities
- Educational Testing Services also use this common application system
- Applicants can find out their admissions results through the Common Application, but they will also be notified directly by the school
"Operational View of the Comparison System"
Operational View

Proposed System

- Centralised Admission System acts similar to the comparison system
- Acts as a portal to the database of all the applicant and university information
- All information is stored and accessed from cloud to enable a forever online system and smooth transfer of data
- Result of the applications can be viewed online as opposed to that in comparison system.
- Analytics for students to assist in choice of universities is also present
“System overview showing the relationship between the different entities and how they interact with cloud”
System Overview

Applicant Information
- Applicant Enters Personal Information
- Applicant Enters High School Marks
- Applicant Enters Test Scores
- Update Database

High School Records & Qiyas Test Scores
- Get Official Records and Scores
- Verify Data with Applicant Submitted Info
- Update Database

Cumulative Score Index (CSI)
- Use Verified Information to Calculate CSI
- Match Applicant to CSI
- Update Database

Enrollment
- Receive Cut-off CSI Score and number of available seats from Universities
- Run Enrollment Algorithm
- Update Database

Admission Results
- Display admission results on CAS site

"Functional Diagram of the system"
"Data Flow in the proposed system"
System Design

Interface

- Used by the applicants
- Eliminates paperwork of any sort
- Site should be very simple with minimal clutter and intuitive design so that anyone would be able to navigate the pages without having to seek additional help
- Applicant data has to entered before the application to universities can be made
“Different screenshots of the interface”
"Screenshots of the interface continued"
Server and Database

- Servers with processing power enough to process the enrolment algorithm using 1.5 million profiles
- Must be utilise power redundancy backed with UPS batteries
- Must employ a routine backup process scheduled at least daily if not more often
- Must be able to store at least a minimum of 10 million applicants worth of information
- Enables online verification of the information entered by the applicants
- Security of data is important and handled by the Ministry of Higher Education
Enrolment Algorithm

- Triggered after the application period ends
- This algorithm systematically slots students into available spots in universities using waves of enrolment
- Ensures that universities are able to fill all their open slots while enabling students to enrol into their top choices of universities to attend
- 4 waves of enrolment are defined
  - Enrolment wave 1
  - Enrolment wave 2
  - Enrolment wave 3
  - Enrolment wave until seats are filled
"Logic Flow Diagram for the Enrolment Process"
Cost Analysis

- Hardware requirements of this project and are minimal
- Rental option in the hardware of the server can further reduce costs
- Maintenance can be in-house or outsourced to private companies

Risk Management

- Risk is "the measure of probability and severity of adverse effects" [10]
- Steps involved in risk management [11]:
  - Risk Identification
  - Risk Analysis and Prioritisation
  - Risk Mitigation
  - Risk Monitoring
## Risk Analysis of the CAS Project

<table>
<thead>
<tr>
<th>No</th>
<th>Risk</th>
<th>Likelihood</th>
<th>Impact</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Colleges and universities may not cooperate</td>
<td>3</td>
<td>5</td>
<td>Involve the Ministry of Higher Education to force universities to accept or to amend the system according to the feedback for why cooperation is not in their best interest.</td>
</tr>
<tr>
<td>2</td>
<td>The modules may not work as per the requirements</td>
<td>2</td>
<td>5</td>
<td>Outsource the application to Indian software developers with deep expertise in such apps.</td>
</tr>
<tr>
<td>3</td>
<td>The system may have technical difficulties including server failures, connectivity issues, etc.</td>
<td>3</td>
<td>5</td>
<td>There will be a 24 hour support team that will assist in case of such emergencies</td>
</tr>
<tr>
<td>4</td>
<td>Users may have trouble navigating through the system</td>
<td>1</td>
<td>1</td>
<td>Users of the system will have technical support they can reach out to</td>
</tr>
<tr>
<td>5</td>
<td>System will not be secure and it can be hacked</td>
<td>2</td>
<td>5</td>
<td>Implement strong security, firewall, biometric systems and authentication with 128-bit encryption.</td>
</tr>
</tbody>
</table>
“Risk Management Matrix”
Lean Thinking

- Lean thinking is the art in finding the balance between value versus waste in any system
- The end goal is to develop a way to deliver more benefits to the stakeholders of the system producing the least amount of waste
- 6 lean principles [12]
  - Value
  - Value stream
  - Flow,
  - Pull
  - Perfection
  - Respect for people
“Lean Thinking - Before and After”
Verification/Validation Method

- Is an important part of any project
- Makes certain that all requirements are according to specification and the end product is exactly what was intended and expected
- CAS requirements will be verified using 6 different methods [13]:
  - Analysis
  - Analogy/Similarity
  - Demonstration
  - Inspection
  - Sampling
  - Test
<table>
<thead>
<tr>
<th>#</th>
<th>Requirement</th>
<th>Verification</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>The system shall eliminate all associated paperwork and handle applications digitally</td>
<td>Demonstration</td>
</tr>
<tr>
<td>2</td>
<td>The system shall request a common set of data from all applicants regardless of faction/college</td>
<td>Demonstration</td>
</tr>
<tr>
<td>3</td>
<td>The system shall allow applicants to view the analytics on how they stack against past anonymous applicants</td>
<td>Analysis</td>
</tr>
<tr>
<td>4</td>
<td>The system shall clearly show the applicant the status of completion of their application while they work on the application</td>
<td>Sampling</td>
</tr>
<tr>
<td>5</td>
<td>The system interface shall be navigable and intuitive</td>
<td>Inspection</td>
</tr>
<tr>
<td>6</td>
<td>The application shall engage an automatic lock-down after five failed attempts to input an authorised credential</td>
<td>Test</td>
</tr>
<tr>
<td>7</td>
<td>The application shall engage an automatic time-out feature after 15 minute of idle time</td>
<td>Test</td>
</tr>
<tr>
<td></td>
<td>Requirement</td>
<td>Method</td>
</tr>
<tr>
<td>---</td>
<td>-----------------------------------------------------------------------------</td>
<td>--------------</td>
</tr>
<tr>
<td>8</td>
<td>The database shall store at least 10 million applicants data; 1.5 million of the annual average applicant pool, and at least for the last five years worth of applicant pools</td>
<td>Test</td>
</tr>
<tr>
<td>9</td>
<td>The database shall have access to a server that conducts the data handling processing of information and statistics</td>
<td>Demonstration</td>
</tr>
<tr>
<td>10</td>
<td>The database shall be redundant in two other geographical locations</td>
<td>Similarity</td>
</tr>
<tr>
<td>11</td>
<td>The database shall be backed-up every night at 3 AM AST</td>
<td>Demonstration</td>
</tr>
<tr>
<td>12</td>
<td>The server and database shall be available and accessible at all times using power redundancy back with UPS batteries</td>
<td>Demonstration</td>
</tr>
<tr>
<td>13</td>
<td>The database shall be secure against unauthorised access using professional network security services/tools</td>
<td>Demonstration</td>
</tr>
<tr>
<td>14</td>
<td>The database shall provide secure access to authorised access using highly secure data exchange protocol</td>
<td>Demonstration</td>
</tr>
<tr>
<td>15</td>
<td>The database shall allow access only to authorised system administrators using credentials controlled by the MHE IT department</td>
<td>Demonstration</td>
</tr>
<tr>
<td>16</td>
<td>The database shall withstand network saturation with high bandwidth availability during peak usage periods</td>
<td>Similarity</td>
</tr>
<tr>
<td></td>
<td>The database shall withstand up to 1 million simultaneous users</td>
<td>Similarity</td>
</tr>
</tbody>
</table>
Lessons Learned

- The importance of seeing projects through to the end
- Initially the project seemed like a very extreme and unrealistic idea, and usually I get discouraged from pursuing the completion of it
- I have realised even when there are numerous seemingly insurmountable hurdles in an idea, one can always find a solution by breaking down the hurdles into smaller hurdles and overcome them one by one

Conclusion

- The higher education system of Saudi Arabia is relatively new
- The CAS can enable an early adaptation of technology
- CAS is a simple and elegant solution to a commonly known process all over the world
- It simplifies the overall process of seeking admission into universities by high school graduates
- It is a reliable method of identifying the eligible candidates for different universities
- It sets up transparency in the system
- It is hoped that other countries too adopt a similar system in their respective countries.
Thank You 😊

References


[5] http://www.oman.om/wps/portal/lut/p/a0/04_Sj9CPykssy0xPLMnMz0vMAfGjzOKNDdwNDPwtpPX1NnAJdDIy8jLxNgx2NjQyCGsDE4v0C7idFQHeH9ej/?WCM_GLOBAL_CONTEXT=/wps/wcm/connect/ar/site/home/gov/gov1/gm/mohe/moheheac


[12] Oppenheim, Bohdan W. SELP 661 Lean Thinking II class. Loyola Marymount University. Los Angeles. 22/10/2013. Lecture