Project | Time - 6 hours | Marks-10 | (Nothing extra nothing less)

Consider yourself a final year engineering student, who will be passing out in August 2014. Year 2013 was a bad year in terms of job or job market, with the global slow down and recession the prospect of a 5 figure salary cheque is a mirage for the students passing out in year 2014. Your college authorities with the help of your college alumni association has lined up few off-campus placement drives, but none of them will give the amount of salary you were looking for in the year 2014.

Meantime in your summer break some of you joined a network course IIT Kharagpur offered by some unknown company called Nettech. The course was for 18 days. The basic idea for joining the course was going away from the mad – mad world for 18 days. No recession – no slow down, its you and your buddies and some fun time at IIT.

Though the idea was FUN and MASTI, you liked the course and learned how to setup a network infrastructure which can be a basic platform for any e-Business. After completing the course you decided, enough is enough no more searching for jobs, you will start your own company which will provide e-Business and e-Service solutions to the various small companies across the Country. You also thought of starting some software development also.

On a last day of the training program, during your 10 mins break, you proposed your idea to all of your group members of your group. You were overwhelmed with the support and their willingness to join your new venture. All wanted to leave their own mark – idea was to be a "JOB Maker – Not a JOB Seeker".

You all decided to start, the company name will be Altergyan Incorporation. You decided to start the web services first so you can display your product lines on the web as well as communicate with your future customers.

The Director of Nettech was very happy with your initiation, he agreed to give you a loan of ₹10,00,000/- (Rupees ten lac only) as your starting capital. Infact he was so happy that some of his students are willing to take the path which he has taken some 12 years before, he gave the loan at meagre 4% annual interest (where the business loan is anything about 11% + from any reputed bank in India)

You bought the following items to start your Altergyan and plan to inaugurate the portal by 2 PM, today afternoon. (very little time left – but you are motivated to go ahead and – confident you will be ready by then)

- Rented a space to use it as office and keep your servers - Use the Room no. E201 as on now ;)
- 4 Red Hat Linux Enterprise server. With plenty of memory and storage space
- 32 live IP address
- 32Mbps internet connection from reliance
- A domain name as altergyan.in

After a group meeting you decided to do the following and get it going.

- Use IP address range 209.211.232.128/27 for all your IP address requirements
- Please install 4 Red hat servers from the scratch.
- Create one web server which will host web site for the Altergyan (altergyan.in), name of the server **www** (this server will also host child domains on your group members name).
- On your web server (altergyan.in) please create the following
  - ❖ It should display all users name of your group
  - ❖ Clicking on each members name should open a separate child domain page for these users. With their small CV on the same.
  - ❖ All pages should have appropriate back link to the home page of the company.
  - ❖ The home page of altergyan.in should also have link for all other child domains such as - mail, sales, research and accounts
  - ❖ The home page should also have a link to a service page (service.php) which should have these functions.
    - o nmap
    - o ping
    - o who list
    - o useradd with password
    - o primary and secondary group change
    - o command execution
    - o log files

- Create two separate DNS server ns1.altergyan.in (name of the server **ns1**) and ns2.altergyan.in (name of the server **ns2**). The second DNS server (ns2) will also work as a web server for the following child domains:
  - o sales.altergyan.in (use virtual IP)
    Index page -Welcome to sales department
  - o research.altergyan.in (use virtual IP)
    Index Page - Welcome to research department
  - o accounts.altergyan.in (use virtual IP)
    Index Page - Welcome to accounts department

- Create one mailing server which will provide the email service for the company (server name **mail,** domain name **- mail.altergyan.in**). Mail server should have POP3 support so user can download email in their own laptop/desktop. Please customize the mail page with your own altergyan logo and altergyan name.
- Email address should be : username@altergyan.in
- You were 5 members in your group you decided that you will be the Chairman of the altergyan and will have access to all the files / folders in of the company. You created three departments – sales – research and accounts. Please divide the group members in all these groups. For the file management you decided about the following points.
- Users should have independent home folder (Samba Share) in web server

- Common data folder for user (only departmental access – only the department people can read and write on the same)
- /data/department_name
- Common driver folder for the user (all department can access – only access cant write on the same) /driver/department_name
- Please design and implement the same.

Firewall :: Please use firewall in your server make sure that telnet, ftp, SSH and webmin is not allowed from outside the network (allow only to your group members IP only)

Servers should not have any extra port or extra services. (please ignore rpc services)
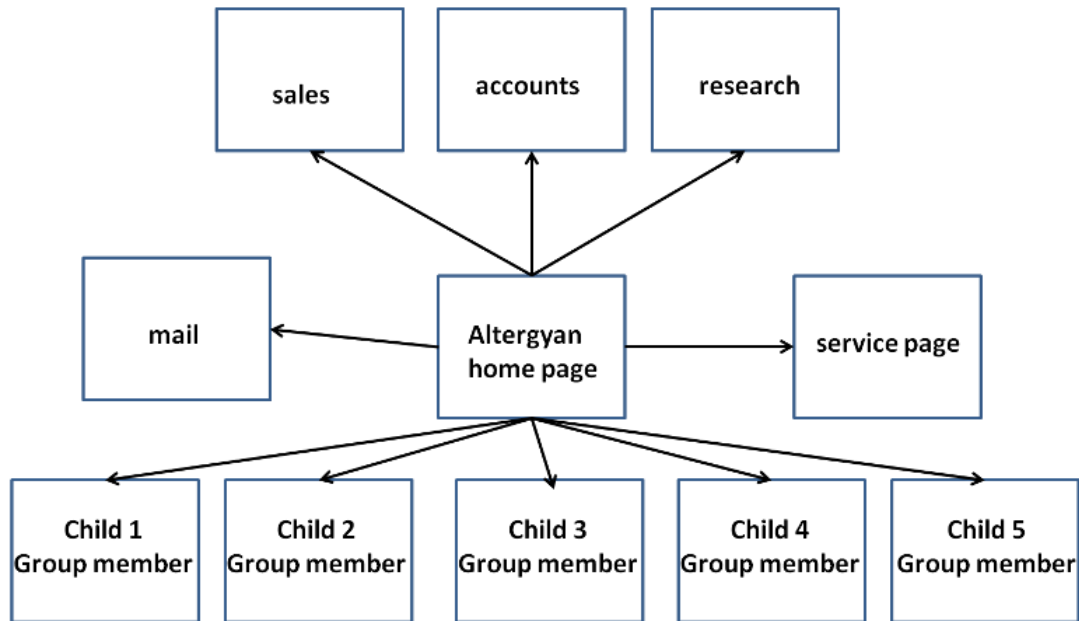
**** We will speak to the group as well as individual for their contribution on the project and award marks. (step marking of marks will be there)

Nothing extra Nothing less is allowed.

All password should be and must be "nettech"

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Appendix - A

Websites link chart for for altergyan.in

All page must have back link to the home page.

Appendix - B (Servers details)

Settings	Server 1	Server 2	Server 3	Server 4
OS	Red Hat Linux 4	Red Hat Linux 4	Red Hat Linux 4	Red Hat Linux 4
Services Offered	Web	DNS	Web, DNS	Web, Mail
Server Name	www	ns1	ns2	mail
Web sites hosted	altergyan.in + 5 child domains as group members name	Not applicable	sales.altergyan.in accounts.altergyan.in research.altergyan.in	mail.altergyan.in
Virtual IP requirements	No	No	Yes	no
IP address : use from the range	209.211.232.128/27			
Firewall Telnet, Webmin, FTP, SSH	Yes	Yes	Yes	Yes
Ports requirements				
Telnet	Yes	Yes	Yes	Yes
FTP	Yes	No	Yes	No
Samba	Yes	No	Yes	No
SSH	Yes	Yes	Yes	Yes
DNS	No	Yes	Yes	No
SMTP	No	No	No	Yes
POP3	No	No	No	Yes
IMAP	No	No	No	Yes
Webmin	Yes	Yes	Yes	Yes