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Faculty of Applied Sciences
Declaration by Student for Online Examination

I do hereby undertake to submit without demur or protest to the decision of the Faculty of Applied Sciences as far as the online examination and its results are concerned. I will be strictly following the instruction listed below:

1. I will strictly follow the deadlines of the examinations including the starting date and time and ending date and time.
2. I will check the emails and/or LMS to get the necessary instructions and exam schedule from the department.
3. I will contact the department to check my eligibility to appear in the online examinations.
4. I will be responsible to ensure the availability of a suitable computer/device with stable Internet connectivity and a suitable location (a closed room with no external noise and sufficient lighting) in order to avoid any disturbance during the online examination.
5. I agree to switch on the video camera and/or microphone of my computer or any other device during the presentation and viva voce Examination and when requested to do so by the examination supervisor. I also agree to share my screen with the evaluation panel during such Examination. In the case of projects, I will also be aware of sharing relevant deliverables on the screen for discussions.
6. I will ensure the submission of answers to all attempted questions within the prescribed time in the required file format.
7. I am aware that in case of any examination misconduct, the examination supervisor has the authority to report to the relevant authorities of the Faculty/University and the prescribed procedure for examination malpractices and/or offenses will be followed.
8. I have read and understood the information in the Students' Guide for Online Examinations, Faculty of Applied Sciences, prior to the Online Examination.
9. I will compulsorily adhere to the conditions specified in the Honour code for open book examinations as follows:

I acknowledge the Faculty Honour Code and I hereby confirm that the submitted work is entirely my own and I have not (i) used the services of any agency or person(s) providing a specimen, model work in the preparation of the work I submit for this open book examination; (ii) given assistance in accessing this paper or in providing specimen, model to other candidates submitting for this open-book examination.

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Signature: Location: Batticaloa   Date: 23.10.2021

Task 01

1)

A)

Starbucks Corporation is an American multinational chain of coffeehouses and roastery assets headquartered in Seattle, Washington. Just within a couple of ages, they grew from a small coffee business house to a multi-million-dollar player in the industry by buying only the best coffee available and providing the people with an unmatched store experience.

Some of the opportunities of Starbucks

- Overseas business expansion
- Business expansion into untapped U.S. markets
- Extension of brand name to new products and business lines
- Product range diversification to more food items

Some of the issues that we can recognize from Starbucks's Loyalty Reigns. The reference identifies some of the main significant and present issues of multi-million dollar enterprises. Some of them are

- Starbucks is trading with is competitors. There are many coffee shops all over the world and being talented to stand out to generate customers is significant.

- Starbuck coffees are priced advanced than other market participants because Starbucks only purchases the highest quality coffee beans for their product, thus increasing the price of the drink giving the competitors a cost advantage over Starbucks.

These are some of the issues and opportunities Starbucks has. But there are some actions to reduce these issues.
- Being a lesser cost store will increase the difference between Starbucks and provide it with a competitive edge.
- Starbucks must decrease their product price by producing a new product of coffee using cheaper beans or can come out with special discounts and promotions to reduce cost, thus increasing sales enabling Starbucks to enter new low-cost markets and increase profitability.

B)

Starbucks uses Twitter as a social media platform to present its goods to customers. They gave numerous probabilities to the customers via Twitter. Starbucks was also one of the first companies to efficaciously use social media to intensify a paid media campaign. As a result of efforts like these, the brand dominated the coffee space on social media. Ninety-four per cent of Facebook users were either fan of Starbucks or friends with someone who was.

Starbucks uses many ways to capture customer loyalty and increase the growth of customers.

they give a chance to win $20 gift cards for Tweeting photos of the ads. By 2014, its Twitter strategy was more complex. Anyone who had a Twitter account linked to their Starbucks card could buy coffee for anybody else on Twitter by tweeting at the handle @tweetacoffee and including the Twitter handle of the person they wanted to buy for in the tweet.

And also, during the 2015 holiday period, the company ran the Mery Monday's program in which it presented perks such as a free bakery item for any Rewards member who paid with the Starbucks app. This droves enrollment in the reward program, app downloads, and sales. We can say they have used accurate social media at the time to introduce their products to their customers all around the world.

As a result of this hard work, the mature company was able to continue growing its income. Starbucks increased earnings from $2.1 billion in the fiscal year 2014 to $2.8 billion in fiscal year 2015.39 Its net income growth in the third quarter of 2015 beat the S&P 500 compared to the same quarter the prior year. Starbucks net income grew from $587.80 million to $652.50 million, an increase of 11.0%, while revenues rose by 17.6% in the same quarter.40 See Exhibit 2. through Exhibit 4 for earnings and operating results in 2015, which can be compared to 2012 earnings.

C)

There are some other ways to market our products differently than Starbucks. These are some of the suggestions.

Email Marketing
Email marketing movements allow organizations to stay connected with forecasts and customers, sending them customized newsletters or offers based on past shopping history or brand engagements.

Search Engine Optimization (SEO) Marketing
Search engine optimization often goes hand in hand with content marketing. When the customer from the above example is leading research for which gym shoes to buy, they will probably click on one of the first three results that appear on Google.

Pay-per-click (PPC)
Pay-per-click is a form of paid advertising that permits promotion teams to essentially purchase traffic to their website. Marketers place ads on websites or search engines such as Google and Microsoft Bing and pay a payment each time the ad is clicked on.

Affiliate marketing
Affiliate marketing is comparable to referral programs, it includes working with outside individuals or companies under the agreement that they endorse your product in exchange for a commission from each sale that can be attributed to their efforts.

Using digital marketing, you can reach an enormous audience in a way that is both cost-effective and measurable.

Using digital marketing, you can reach a huge audience in a way that is both cost-effective and quantifiable. Some of the benefits of using mobile apps rather than social media.
The ability to interact with your prospects and learn exactly what they are looking for

- The ability to reach a global marketplace
- You can save money and reach more customers for less money than traditional marketing methods
- Get to know your audience and allow them to know you personally which can help to create brand loyalty
- You can track responses to your marketing efforts immediately

References

All Answers Ltd. (2021, August 12). *Critical Analysis of Strategic Issues faced by Starbucks*. ukessays. Retrieved October 22, 2021, from https://www.ukessays.com/essays/marketing/critical-analysis-of-the-strategic-issues-faced-starbucks-marketing-essay.php

Case Study Solution. (n.d.). CaseRighted. Retrieved October 22, 2021, from https://caserighted.com/starbucks-loyalty-reigns/

Marketing Evolution. (n.d.). *Digital Marketing: Guide to Digital Marketing Platforms | Marketing Evolution*. Retrieved October 22, 2021, from https://www.marketingevolution.com/marketing-essentials/what-is-a-digital-marketing-platform-marketing-evolution

Simon @ DMI. (2020, December 2). *Why Digital Marketing is Important for Small Business*. Digital Marketing Institute. Retrieved October 22, 2021, from https://digitalmarketinginstitute.com/blog/why-digital-marketing-is-important-for-small-business

Starbucks loyalty Reigns Case Solution And Analysis, HBR Case Study Solution & Analysis of Harvard Case Studies. (2018, October 1). TheCaseSolutions.Com. Retrieved October 22, 2021, from https://www.thecasesolutions.com/starbucks-loyalty-reigns-3-150973

Task 2

A)

Hardware test plan
A hardware test plan reflects not only the clear information around test methods and test equipment, but also can comprise information on test time. tact time, and manufacturing capacity analysis.

Where we use these testing:
It is used for integration and system testing more frequently today. It can test paths within a unit, paths between units during integration. and between subsystems during a system-level test.

Black box testing
Black box testing refers to any type of software test that examines an application without knowledge of the internal design, structure, or implementation of the software project. Black box testing can be performed at multiple levels, including unit testing, integration testing, system testing, or acceptance testing.

White box testing involves the testing of the software code for the following: Internal security holes. Broken or poorly structured paths in the coding processes. The flow of specific inputs through the code

Who is responsible: -
White box testing is accomplished by testers and developers. Black Box Testing is generally performed by the developer, tester and the end-user.

Better testing for programmers.

Neither they are necessary and complementary. In general, white box testing will always be performed over black-box testing since it is more in-depth.

B)
Backup
Backup is a copy of computer data taken and stored elsewhere so that it may be used to restore the original after a data loss event.

How to backup in windows.
1. Select the Start button, then select Control Panel > System and Maintenance > Backup and Restore.

2. Do one of the following: If you've never used Windows Backup before, or recently upgraded your version of Windows, select Set up backup, and then follow the steps in the wizard.

Disk clean-up

Disk Clean-up is a computer maintenance utility included in Microsoft Windows designed to free up disk space on a computer's hard drive.

How to disk clean-up in windows.

1. In the search box on the taskbar, type disk cleanup, and select Disk Cleanup from the list of results.

2. Select the drive you want to clean up, and then select OK.

3. Under Files to delete, select the file types to get rid of. To get a description of the file type, select it.

4. Select OK.

Disk rearrangement

there are two primary methods utilized to treat Disc Derangement including end range loading exercise and flexion-distraction manipulation. Patients are taught to perform end range loading exercises in the direction by which the pain centralizes; these exercises are to be performed at home at specific intervals during the day.

Changing a drive letter in Windows 10 is relatively easy, as follows. Right-click the Windows 10 Menu button and select Disk Management to display a list of all available hard drives. Right-click the specific hard drive letter you want to change, and select Change Drive Letter and Paths.

System restores

System Restore is a recovery tool for Windows that allows you to reverse certain kinds of changes made to the operating system. When it's used, Windows will return important files and settings like drivers, registry keys, system files, installed programs, and more back to previous versions and settings.

How to system restore in windows operating system

1. Open Start.
2. Search for Create a restore point, and click the top result to open the System Properties page.
3. Click the System Restore button.
4. Click the Next button.
5. Select the restore point to undo changes and fix problems on Windows 10.

Task 3

Data-intensive computing is a class of parallel computing applications that use a data-parallel approach to process large volumes of data typically terabytes or petabytes in size and typically referred to as big data.

The quick growth of the Internet and the World Wide Web controlled massive amounts of information available online. The storing, managing, accessing, and processing of this vast amount of data signifies a fundamental need and an enormous challenge to please needs to search, analyze, mine, and visualize this data as information. Data-intensive computing is intended to address this need.

Supercomputers have unbelievable processing speeds that can turn basic data into appreciated insights in a matter of seconds, minutes or days compared to the years or even decades it would have taken plain human effort.
Some of the advantages of DISC systems.

1. Smog control

By running meteorological data through high-power supercomputers, scientists can expect pollution levels in main pollution-prone cities like Beijing.

2. Speed

The time a computer takes to process tasks is meaningfully lesser in a supercomputer. They usually take a very little amount of time to resolve calculations. Compared to a normal computer, this rate is almost 100-1000x lesser.

3. Complex Tasks

Complex tasks such as rendering animations can be simply done with the help of a supercomputer. Along with faster rendering, it overall produces a good result.

Some of the disadvantages are:

1. Power Consumption

Supercomputers typically consume a huge amount of electricity. On average, a supercomputer necessitates about 4 megawatts (MW) of electricity. This amount is almost 5000x greater likened to a usual house. All this can lead to an increase in the outflow of electricity.

2. Heat Release

A supercomputer is armed with a large number of processors all of which can generate a significant amount of heat throughout their operations. Due to this heat, most devices tend to get damaged simply.

3. Storage

For getting the full volume of a supercomputer, it should be equipped with enough storage space. Of any kind, the data that is being formed will be accommodated by the storage drive. Therefore, it must be massive enough to store all the data.

- How should the processors be designed for use in cluster machines?
- How can we effectively support different scientific societies in their data management and applications?
- Can we reduce the energy supplies for large-scale systems?
- How do we build large-scale computing systems with a suitable balance of performance and cost?

These are some of the challenges to installing Data-intensive computing system in an enterprise environment.

C)

A computer security policy defines the goals and elements of an organization's computer systems. ... A technical implementation defines whether a computer system is secure or insecure. These formal policy models can be categorized into the core security principles of Confidentiality, Integrity, and Availability.

Some of the security policies are:

- Create user access control lists.
- Create a password for each user.
- Password encryption
- Password validation and strength
- Use proxy for appropriate websites
- Use firewall security guard

References

Bentson, S. (n.d.). *Lumbar Disc Derangement*. Lehigh Valley Chiropractic-Bethlehem | Chiropractor Bethlehem PA. Retrieved October 23, 2021, from https://lehighvalleychiropractic.com/back-pain/lumbar-disc-derangement/

Duigan, A. N. (2003, October 8). *10 steps to a successful security policy*. Computerworld. Retrieved October 23, 2021, from https://www.computerworld.com/article/2572970/10-steps-to-a-successful-security-policy.html

Klosowski, T. (2021, September 30). *How to Back Up Your Computer*. Wirecutter: Reviews for the Real World. Retrieved October 23, 2021, from https://www.nytimes.com/wirecutter/guides/how-to-back-up-your-computer/

Neves, K. W. (n.d.). *Supercomputing: Key Issues and Challenges*. SpringerLink. Retrieved October 23, 2021, from https://link.springer.com/chapter/10.1007/978-3-642-75771-6_1?error=cookies_not_supported&code=88a52a92-fac7-48d3-b1c9-e981a57f74fc

Task 04

A)

Extreme power ingesting uses the massive volume of electricity that must be generated through hydroelectric floras or coal-fired power plants. While hydroelectric generation plants are less demanding on the environment than coal-fired, however, they do pull capital from more useful purposes. Coal-fired power plants produce enormous amounts of carbon dioxide into the atmosphere, which some scientists and politicians' prerogative is a major cause of global warming. Social allegations of increased power consumption point to global warming.

The business of data centre cause is such as video on demand, preserving web sites, analyzing large pools of communications or social media data that require more and more self-important machines businesses. In addition to that, the social problem that the data centre power ingesting causes is high corporate operating costs.

B)

Some of the keys to cutting power consumption deliberated in the case study are a good beginning. We can analyze these issues in three formats. They are management, organizational and technology.

Management:
Employee telecommuting; users consider and abide by policies in which they turn PCs off when not in use.

Organizational:
Construction of data centres that take advantage of hydroelectric power generation rather than coal-fired power plants; renewable energy schemes; alternative energy; better management of computing resources.

Technology:
Thin client computers, software that automatically turns computers off; more efficient chips. Possibly the most environment-friendly resolutions are those that control the hardware and software, thereby controlling the problem at its source. Virtualization holds great promise as a way to reduce power necessities by dropping the number of servers required to run applications.

C)

Even though it may rate a business up-front money to mount hardware and software that decreases power necessities, it will save a business a lot of money in the long run by reducing the amount it wages for electricity to run the equipment and cool it at the same time. Businesses that diminish their power needs to help the environment and can endorse themselves as eco-friendly.

D)

Yes.

Entirely multinationals should make some determination to diminish their power requirements and promote green computing. From a business angle, it makes sense to reduce costs, both short term and long term.

It is very efficient to reduce their power requirements Reduce costs Reducing impacts on environmental and human health Helps to minimalize the energy ingesting by educating consumers on well-organized ways to keep power usage low.

References

Muhammad, F. (n.d.). *What business and social problems does data center power consumption cause*. Academia. Retrieved October 22, 2021, from https://www.academia.edu/28722367/What_business_and_social_problems_does_dat a_center_power_consumption_cause

P.M.J.V.A.S.R.S.A. (n.d.). *The greening of data centers with cloud technology. International Journal of Cloud Applications and Computing (IJCAC)*. IGIGlobal. Retrieved October 22, 2021, from https://scholar.google.com/scholar?hl=en&as_sdt=0%2C5&q=The+Greening+of+Dat a+Centers+with+Cloud+Technology+- +In+Internationaliournal+of+Cloud+Applications+and+Computing&btnG=#d=gs_cit &u=%2Fscholar%3Fq%3Dinfo%3AW0zccS2kNQoJ%3Ascholar.google.com%2F%2 6output%3Dcite%26scirp%3D0%26hl%3Den