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A Conspicuous Survey of Green Computing Environmental Impact

Muhammad Irfan[1], Jalil Abbas[1], Syed Muqsit Shaheed[2], and Muhammad Sajid Nadeem[3]

[1]Department of Computer Science & IT,
Govt. College University Faisalabad (Layyah Campus),
Layyah, Punjab, Pakistan

[2]Department of Computer Science & IT,
University of Lahore, Gujarat Campus,
Gujarat, Punjab, Pakistan

[3]Department of Computer Science & IT,
Beacon House National University,
Lahore, Punjab, Pakistan

ABSTRACT: As rise in the cost and crises of energy, environmental behaviors pay immense attention to green computing approach to cope with the issues of energy crises. The goal of green computing is to sustain the environment eco-friendly and to make the system energy efficient. Green computing holds the field of computing as well as electronic component. Green computing is used to reduce the harmful use of computing and its relevant loss of energy and its impact on environment. Manufacturing, design, uses and implements the structure of computer in the global issue in the current generation. To solve this type of issues green computing is backbone in the field of computing. To prevent the waste use of energy consumption and carbon emission, an origin of green and safe computing is formulated application for green computing and analyzed for future impact. Green computing refers to supporting business essential computing system with least feasible amount of power or sustainable computing environment, conditions, energy efficiency and performance. The computer is not used only in offices but, everywhere such as in domestic and public. The approach as the healthy use of computers widely, provides the basic principle against the term drain away type of energy consumption. Through the development of programming codes which uses hardware, the goal can be achieved and green computing we can reduce resource consumptions and disposal of electronic waste that has impacts on the health. The goal of green computing is similar to green chemistry that reduces the use of hazardous material**.** This research conveys a survey to energy and health crises because of the computer systems, and introduces some better precautions to deal with the issues.

KEYWORDS: Cost, Crises, Energy, Health, Issues.

1 BACKGROUND

Current trend of green computing is the study of design, building, operating the computer system to provide energy efficiency. Basic idea of green computing starts by the US environment protection agency named Star Energy Program. The agency on environmental protection adopts the techniques which defends the environment and salvage the energy resources. Later on, this idea is incorporated in Asia as well as Europe. Green computing is a technology, which is intended to minimize negative impacts with sufficient and efficient use of electronics devices. Efficient computers systems play a vital role in suitable environment. The energy efficient system and factor design is the popular strategy of green computing. Some practices should be employed in domestic and public use of computer, which support green computing. There are some functions in computer provided by an operating system (OS) such as sleep and hibernate when a user is not interacting or

Corresponding Author: Jalil Abbas

even when the computer is inactive. The way to meet the requirement of green environment using green computing computers should be completely power off at night and the purchase of refurbished unit is to be considered as instead of new one. The local guidelines for the disposal of waste equipment safely and with responsibility play a vital role in making environment healthy.

With the new computer is doing every day, old computers are discarded - a lot of e-waste is created. This is something that will continue, because there is still room for considerable progress to be made in this area. When we put our old computers to buy new, we just add e-waste. No trash in real life, we can dump e-waste, so that they disappear completely. Electronic waste incineration produces harmful gases. As we do we protect our environment tree planting, recycling and other components, we have to look at waste reduction, especially e-waste, which is what comes with the computer green. Green computing seems a bit contradictory. The reason behind the statement is use of computer makes the environment hazardous. To monitor the radiation that computer generates, may cause serious health hazards, especially proven the long exposure. Modern science has created a synthetic issue with long lasting effects. No doubt, computer system makes the world fascinating and provides a number of facilities but the intensive use of chips and circuits bring negative effects and the consumption of energy make the environment polluted and unhealthy.

While the new technology industry continues to drive efficiency in IT infrastructure, general environmental quality metrics must be included in IT infrastructure, architecture and every part of the continued commitment of all levels of all infrastructure needs than general product sourcing strategy. Environmental impact and energy consumption is rapidly becoming a key IT infrastructure systems quality design considerations. When this happens, it will be very important to understand sustainable solutions architect of this new environmental quality, in the analysis of the future and success, have documented a systematic pattern and design [1].

Huge range of information technology to explore and develop new equipment in every passing days, the 21st century may be marked appropriately Gadgets and Gizmos century. The term green computing refers to the use energy wisely and efficiently, resulting in degradation of environmental resources. In recent years, this approach has already attracted great attention from educational institutions, environmental organizations and the business and commercial sectors. In the current trend, going green has become a public relations agenda and reduce costs of IT industry [2].

The energy consumption in large enterprises is getting high in values; this is why the green computing approach is achieving the pinnacles of research. The energy consumption due to digital devices most preferring the computer system is dangerous; they are more consumptive when they are performing the complex computation. The work answers the question which highlights the replacement of desktop computer to laptops. These are good practices to achieve Green IT initiatives. Everyone should be an IT innovation and culture change from green to save mankind from environmental pollution [3].

The progress in development of social and informative systems leads the use computer systems extensive all around the world. The impact of computer system on environment is now prominent, because the problems faced in energy and ethics are similar to giant. The green approach deals efficient and sufficient consumption of energy and environmental protection. The purpose of the green computing is to permute the economics satiability and the use of best resources to overcome on that. Stop that martial use in the component of the computers and relevant devices on the base of its structure [4]. To gain the benefits of green approach it is necessary to be aware and control loss of energy to save budget [5].

Green computing represents a responsible way to take green computing, business leaders can promote environmental management and protection of the environment while reducing energy and paper costs, in order to cope with global warming. Therefore, green computing is an attitude that asks how we can meet the growing demand for network computing and does not put pressure on the environment [6]. Effectively improve the energy efficiency of green computing, will be able to simultaneously help mitigate the growth rate of total energy use and reduce energy use in IT business through the proportion in all industries. Although highly significant, green computing has not yet attracted enough attention, enough to penetrate deep into local government or people's daily lives. The Government should strengthen the use of green computing IT business solutions. The residents should also apply to green computing technology / methodology to its domestic computer [7].

2 MATERIAL AND METHODS

This paper is an attempt to figure out the awareness of green computing among the students of Government college University Faisalabad (Layyah Campus) - Pakistan. To achieve the result, a 25 items questionnaire was prepared and distributed to students of the university. 100% students as sample were selected for this survey. The students belong to department of computer science and their ages are different.

Age: Selected student ages in this survey are 20 to 25.
Gender: 65% male and 35% female are selected in this survey.
Degree: Student have different degree MCS, BSCS

The questions and the responses of the students for the given questionnaire are given below:

1. **How much time do you spend on computer?**

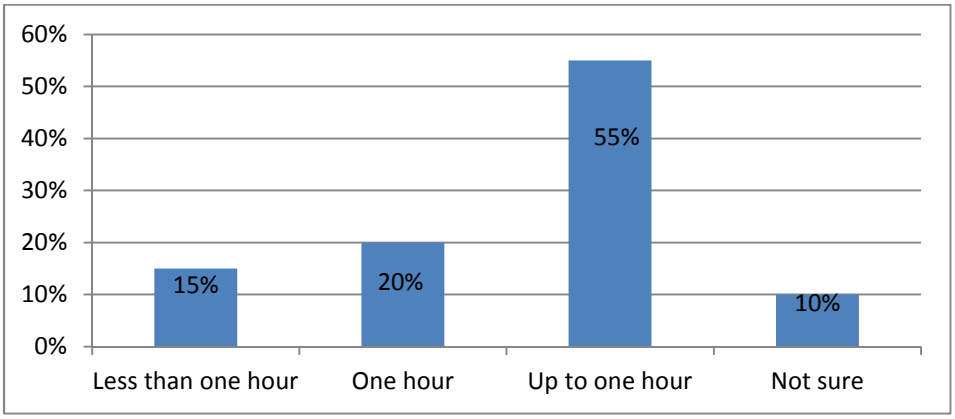

Figure: 2.1

2. **Which computer devices do you ever use?**

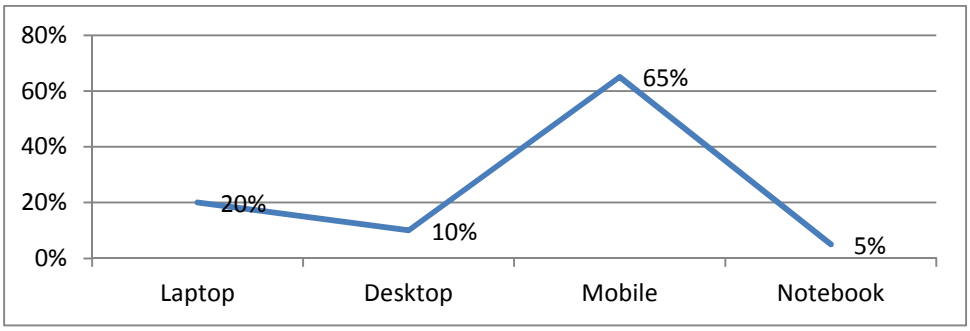

Figure: 2.2

3. **Which operating system do you like?**

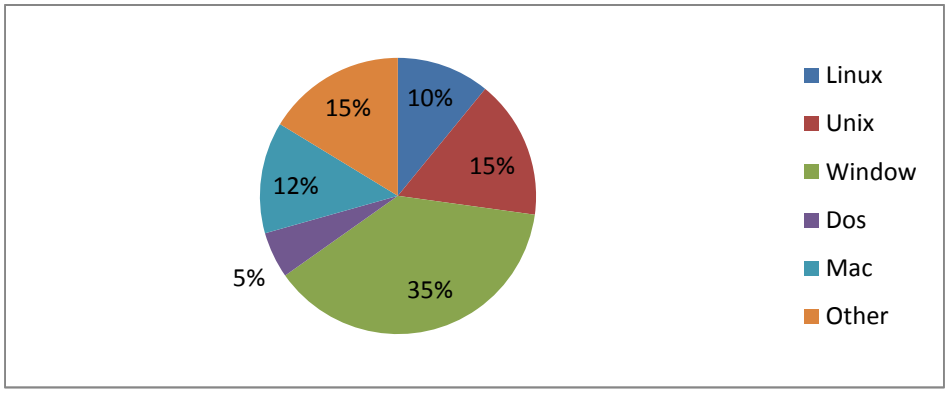

Figure: 2.3

4. Which search engine do you like?

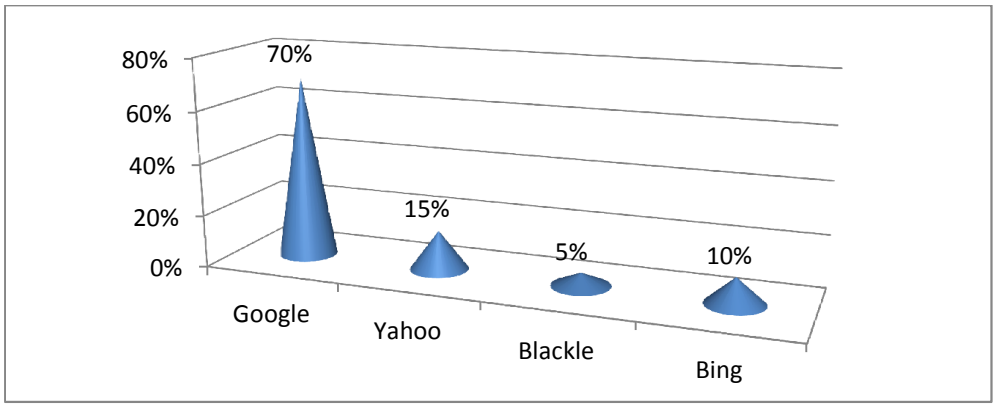

Figure: 2.4

5. Do you know that inkjet printer use more energy than laser jet printer?

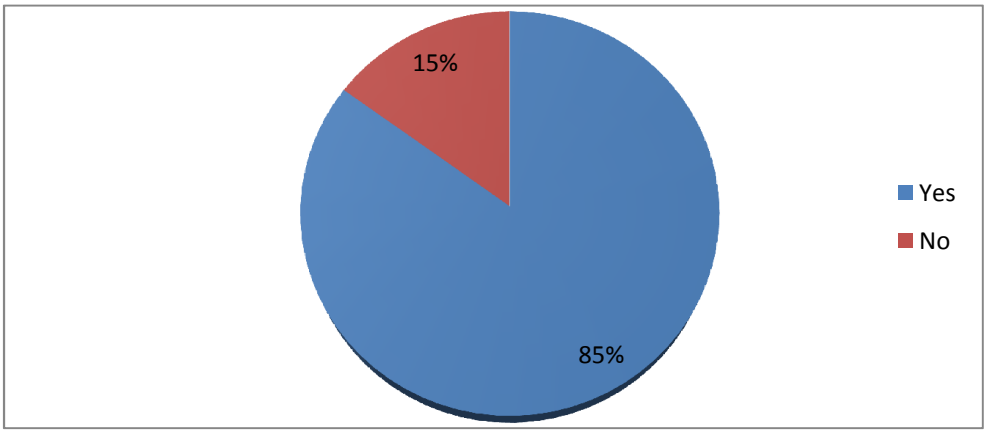

Figure: 2.5

6. What do you think that the use of computer devices put harmful impact on environment?

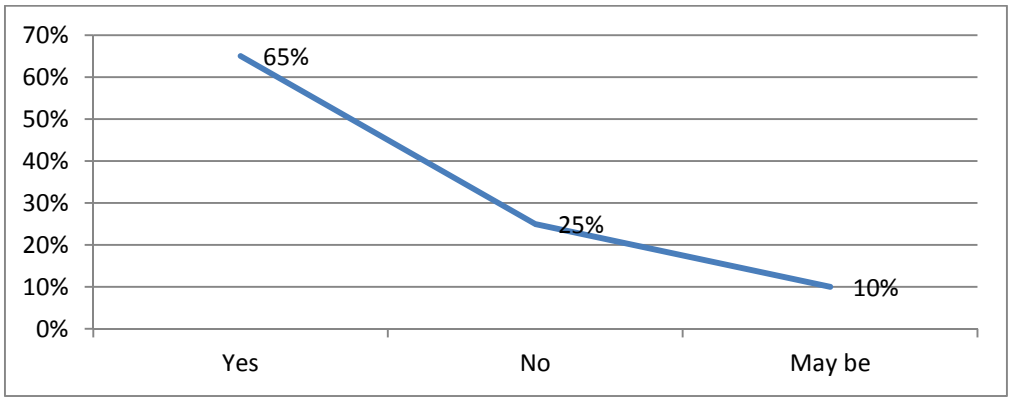

Figure: 2.6

7. Is most of the CO2 emission generated through computer and its devices?

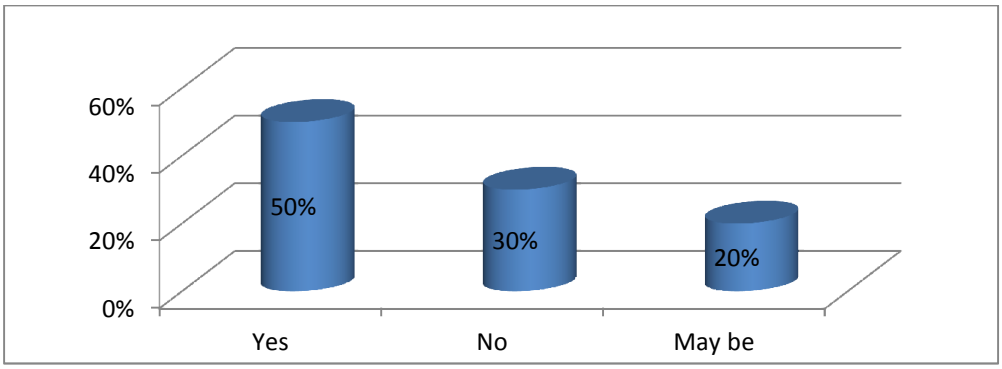

Figure: 2.7

8. Is it true that there are many toxic chemical are used while manufacturing of computer?

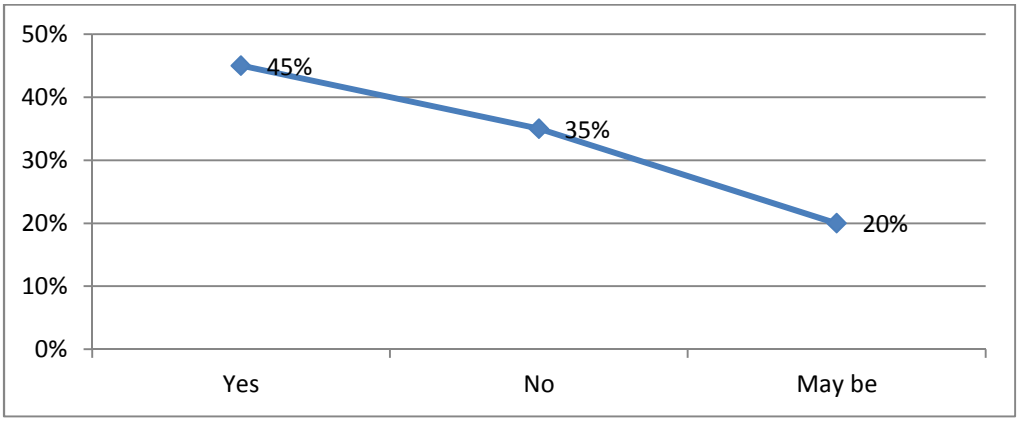

Figure: 2.8

9. Does high consumption of electricity play harmful impact on environment?

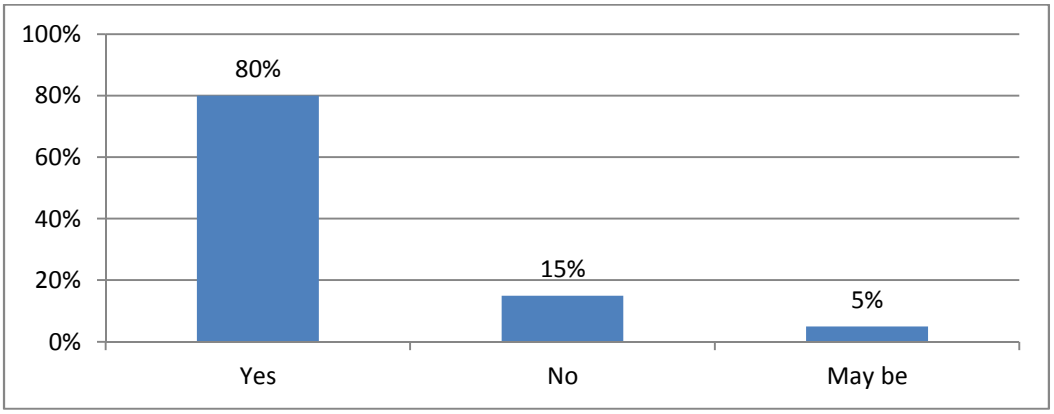

Figure: 2.9

10. World environment is celebrated to raise global awareness?

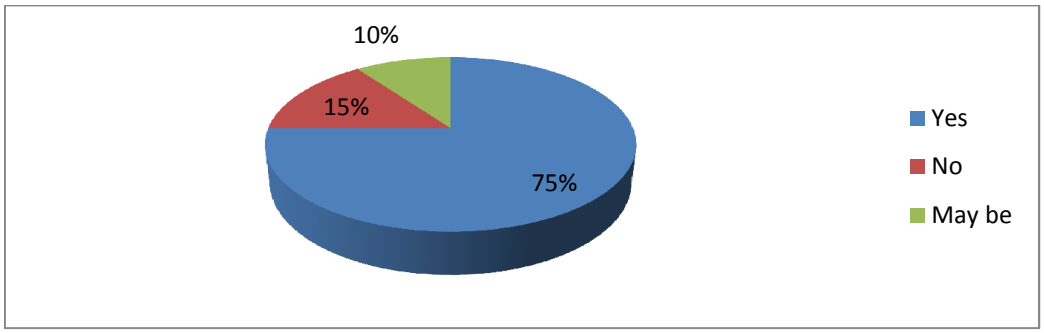

Figure: 2.10

11. Do you think that the goal of green computing is to reduce the dangerous materials and save the environment?

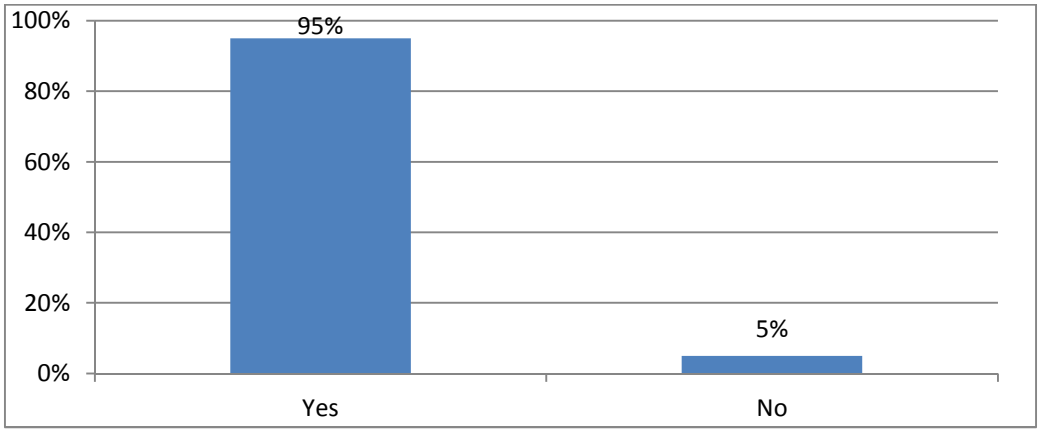

Figure: 2.11

12. Do you know Energy Star is an international standard for energy efficient consumer product?

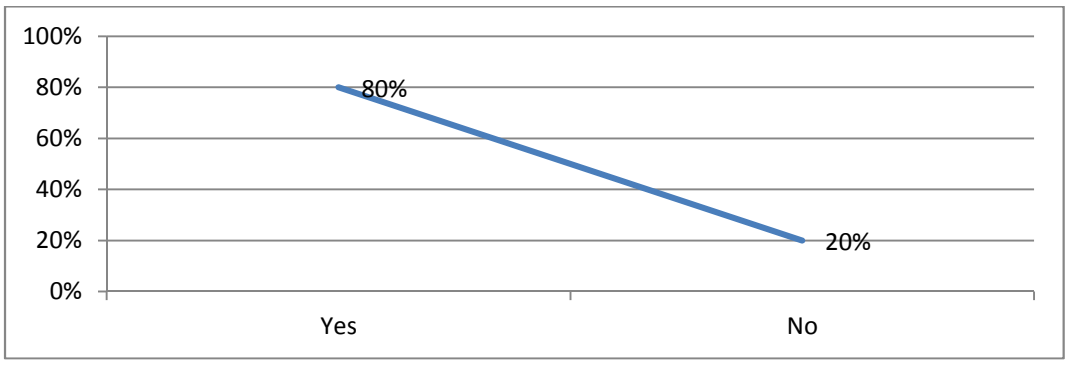

Figure: 2.12

13. When you don't use computer than you turn off your computer?

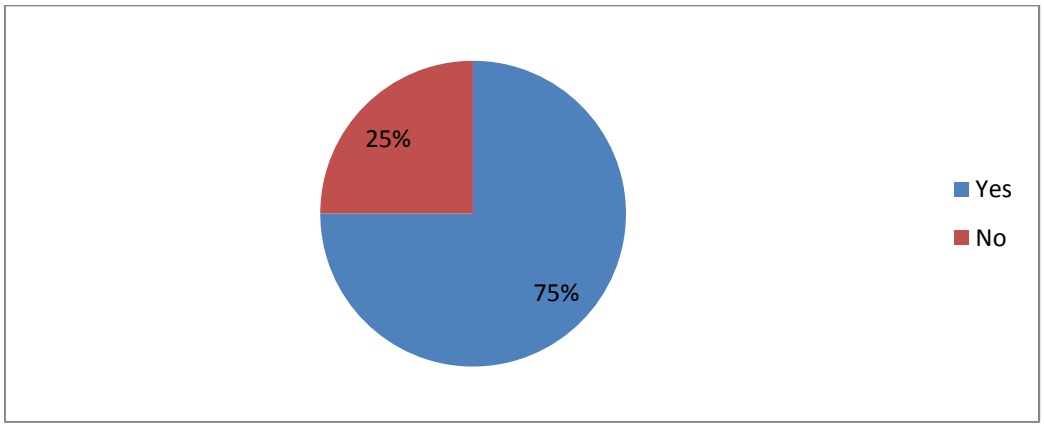

Figure: 2.13

14. Do you consider Energy Star logo when you purchase new devices?

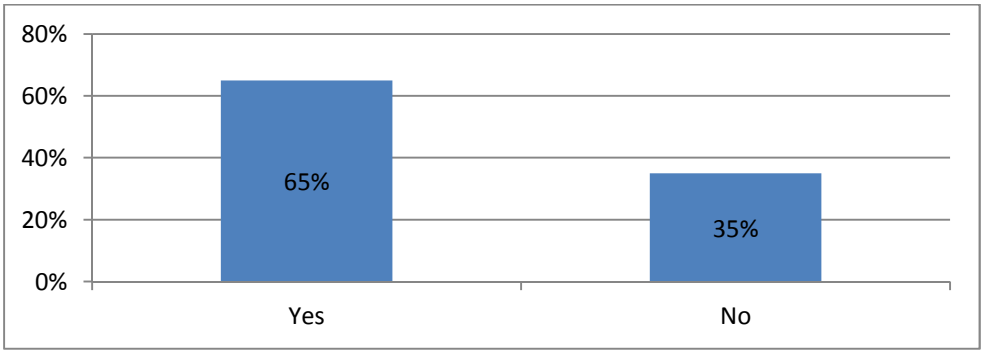

Figure: 2.14

15. Is it true that Google's Blackle search engine is less energy consuming search engine?

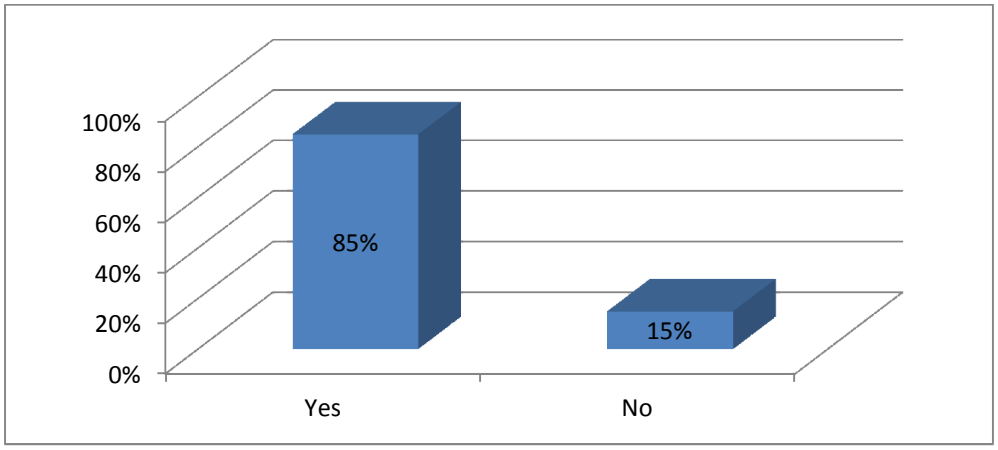

Figure: 2.15

16. What do you think that government should have to promote green computing?

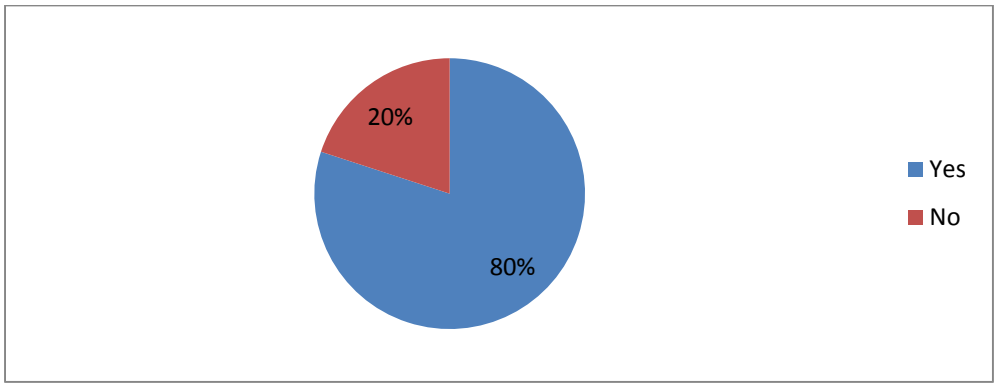

Figure: 2.16

17. Government should take steps to aware people about the green computing?

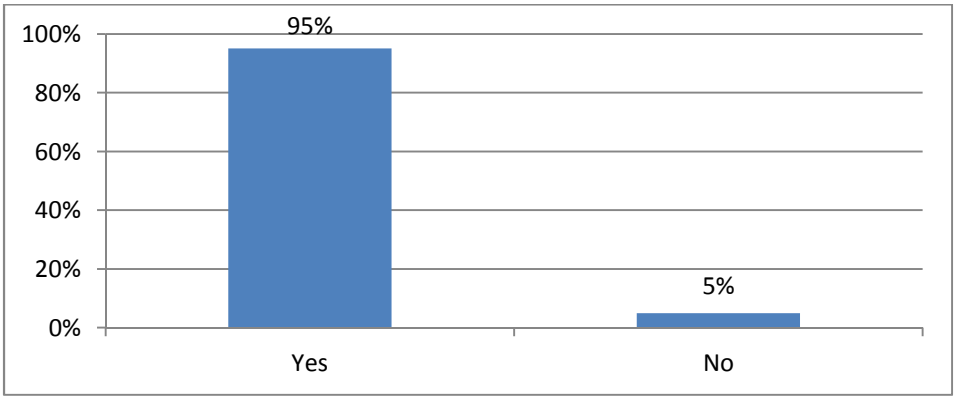

Figure: 2.17

18. Should everyone aware about green computing and its benefits?

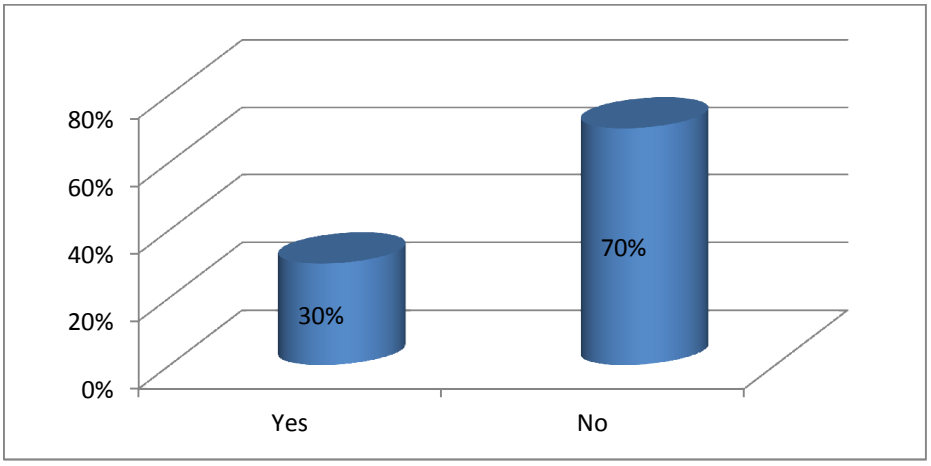

Figure: 2.18

19. Do you know PC recycling protects the environment?

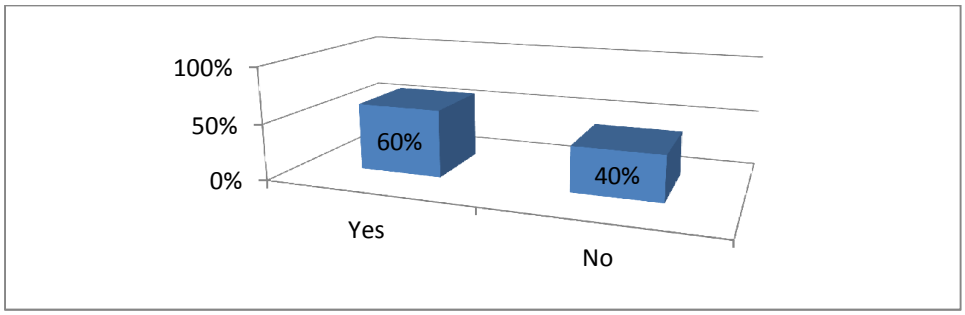

Figure: 2.19

20. Does the sleep mode reduce energy?

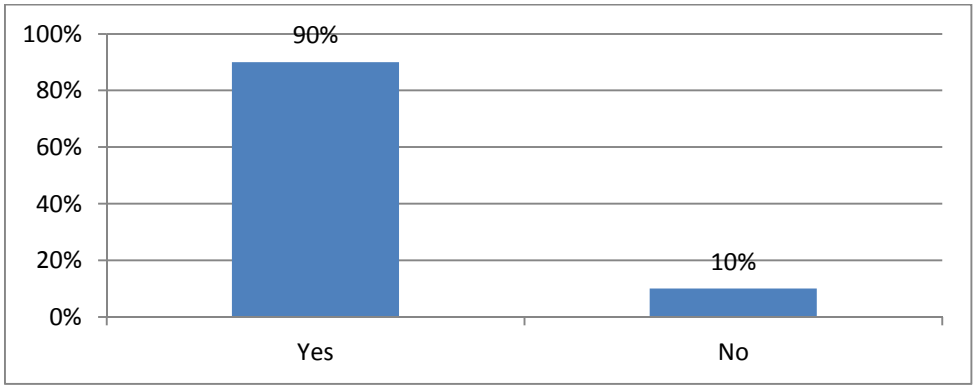

Figure: 2.20

21. What do you think that screen savers save energy?

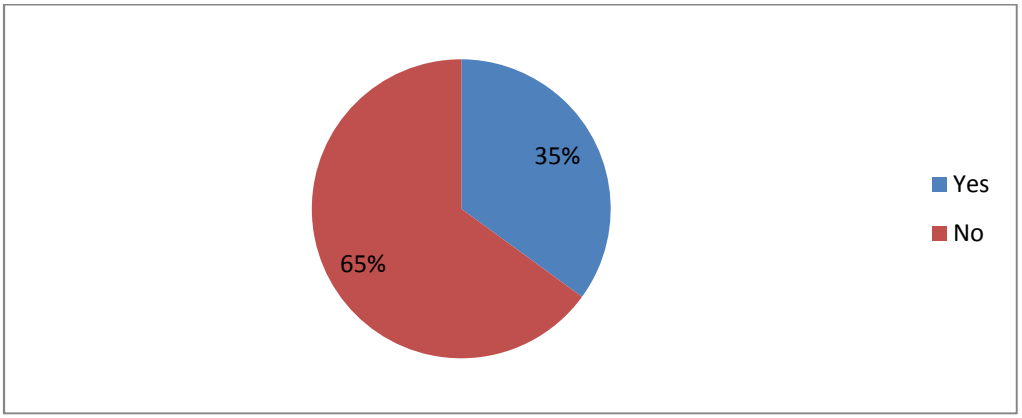

Figure: 2.21

22. What do you think PC recycling increase environmental pollution?

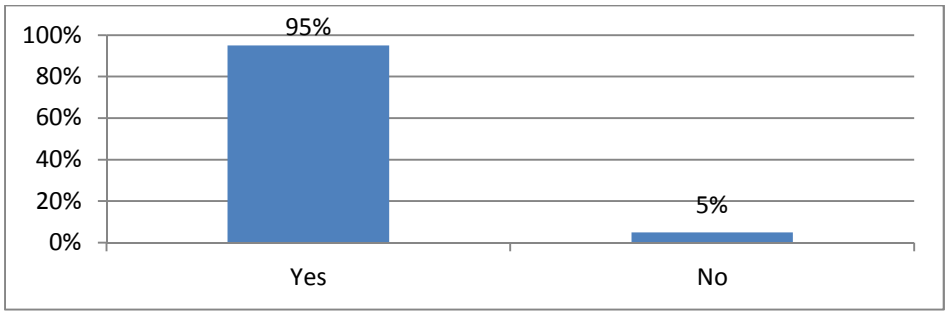

Figure: 2.22

23. Is the Energy Star hardware increase electricity?

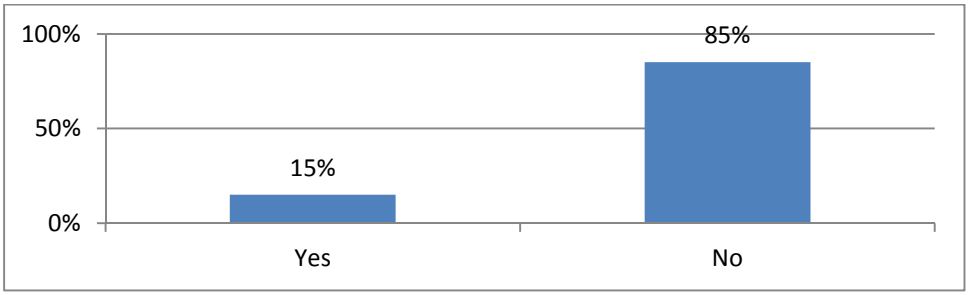

Figure: 2.23

24. What do you think that shutting down save more energy than using sleep mode?

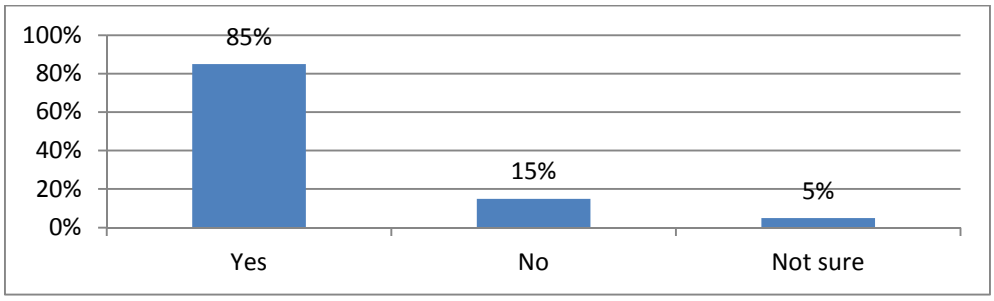

Figure: 2.24

25. Do you know laser printer contain toner particles that can damage lunges?

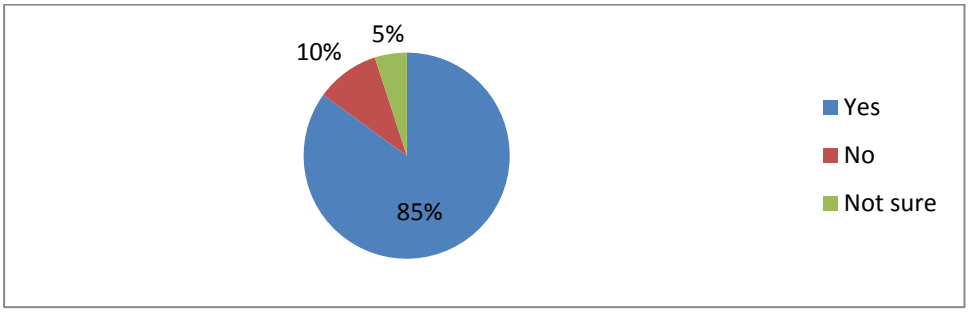

Figure: 2.25

3 RESULTS AND DISCUSSION

Green computing is a process that deals with computer equipment and its related resources. Green computing a way of saving energy and protect the environment. Its basic goal is to provide the awareness to the public to sustain the environment eco-friendly. Provides the awareness about the green computing it saves energy and its cost as well as environment protection. Stopping the harmful use of computing and to maintain the healthy environment. Designer and manufacture try their best to maintain that electronic equipment that effectively consume low energy. Doing more work on software instead of hardware. Star energy program give the basic idea about the green computing and its approved assures are the environment protected.

4 CONCLUSION

The purpose of research was to discuss the issue of computer with impact on environment hazardous and toxic. Computers are consuming more and more energy and spare the carbon emission. Basic goal of research is to provide the awareness to public how to protect the environment and how to aware about the use of computing and its related resources. The research is based on review of the literature and different points of view in this area of research and green computing formalities. This research also sets out the strategies for computing issues and the status and future directions for research on the green computing. . Positive and negative aspects of research are based on the progress and its result. Green computing is the best field which provides the help and sources to protect the environment from the toxic use of computer and electronic devices. The work further analyzes the future of computer providing information and awareness about the green computing. These areas still require more interest and monitoring for search on the green computing to adopt more and more technique for aware the public about the green computing.

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