# **CONCEPT NOTES**

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**Programme:** BSc in Electronics Engineering

**Proposed Tittle:** Wireless USB flash Drive

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| PROBLEM |
| **Problem statement:**  Traditional memory storages rely on physical connections like wires which serves a great deal of disturbance when mobility is needed. Also, some wires tend to be bulk and heavy to carry. Some of the improved state-of-the-arts of today uses ports like Usb connectors which in spite of having a very high data transfer rate, sometimes are prone to fatigue after a long run of use.  Also, the security for this kind of existing storage connections is weak therefore there is a need for a better way of connecting the storage devices with and without physical connection. This will help in improving the portability, flexibility and security of the existing storage devices. **Research gap:** In spite of currently existing technology and advancement of wireless technology like the existence of   * Network Attached Storage (NAS) which are mainly served by the NAS server. * SanDisk Connect wireless stick flash drive which offers storage capacity of up to 200GB and a good transfer speed but it is only supported on its software. * Asus Travelair N a wireless SSD drive which can offers up to 1TB of storage.   As far as the current technology, the storage solutions fail short of simplicity, compatibility, flexibility and security. In some solutions like SanDisk wireless flash drive, some parameters like compatibility and security have been solved with highest priority while trading off other parameters like flexibility.  There is a need for research and development to bridge this gap and create a reliable, user-friendly, and secure wireless alternative that may ensure good and reliable data management accompanied with security. |

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| OBJECTIVES |
| **Main objective:** To design and implement wireless flash storage device that can accommodate flexibility in terms of cross-platform operability.  **Specific Objectives**:   1. To enhance mobility: by enabling data transfer and access with both physical and wireless connections. In this term portability and convenience are considered.   **Methodology:**   * Develop or utilizing the existing ways of creating a local area network wirelessly between the Host and the Client that the user may interact with the handshaking process only when needed. * To develop a robust way of data transfer between the host and the client which include using more than one data channels, modified session database to always remember session whenever there is a fluctuation/change or loss in connectivity.  1. To implement security: To implement robust security measures to ensure data is protected during transfer.   **Methodology:**   * By utilizing the existing encryption technologies such as hybrid encryption technology which utilizes both symmetric and asymmetric encryption technology. A secured and a robust yet reliable system can be developed.  1. To design with multipoint user-friendly interfaces: To develop an intuitive and user-friendly interface that can cope with at least more than 3 operating systems with windows and Linux included.   **Methodology:**   * By implement the in-built features for wireless file transfer that already exist in most of the operating systems like samba (SMB) protocol and network file sharing (NFS) protocol to reduce congestion of procedure that the user is supposed to consider in order to perform data transfer. * By also implementing the normal physical connection like usb mass storage server will provide a user with choices that mostly fits comfortability. * By implementing a user-friendly encasing design, can provide user with a |

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| PROJECT OUTPUT AND IMPORTANCE |
| |  |  | | --- | --- | | **Objective** | **Output** | | To enhanced mobility | * Increased Mobility. * Increased system robustness in term of data loss. * Reduced human interaction during configuration. | | To implement security | * Increased data Security. * Enhanced robustness in term of data encryption. * Reduced data loss. * Improved data reliability. | | To design with multipoint user-friendly interfaces | * Reduced mobility inconveniences. * Increased Cross-flatform choice. * Improved portability of the device. * Increased number of users per a session. |  **Overall project output:** The expected output of this project is a multipoint, portable and cross platform system that can perform reliable data transfer seamlessly through both physically and wireless to more than three operating systems without the need of a third-party application. **Importance / Benefits of the project:** This projects output will help to solve the problem of having several apps in order to perform data transfer. The user will no longer need the middleman(software) rather than the inbuilt features that have been supported by most of the operating systems. The product will support on-the-go, seamless data transfer to use. |