

SOUTH EASTERN KENYA UNIVERSITY

SCHOOL OF SCIENCE AND COMPUTING

A REPORT OF A	TWO MONTH	INDUSTRIAL	ATTACHMENT	AT THE ICT
DEPARTMENT ()F KISH COUN	TY GOVERNN	MENT.	

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REGISTRATION NUMBER: G126/0649/2018.

DEPARTMENT: INFORMATION AND COMMUNICATION TECHNOLOGY.

PERIOD OF ATTACHMENT: FROM 25TH APRIL TILL 8TH JULY 2022

DECLARATION

presented to any other institutio	n for any award.		
Signature:	Date:		
Declaration by the Supervisor	•		
Name:	Signature:	Date:	

DEDICATION

I dedicate this report to God for helping me get an opportunity to do this attachment in this organisation. I also dedicate this project to my parents who supported me since I began this attachment. Finally, My Supervisor Mr. Nathan Oirere for exposing me to gain industry skills While working in the ICT department.

ACKNOWLEDGEMENT

My sincere gratitude to God for giving me the gift of life and good health during the entire period of attachment.

A special thanks to the **South Eastern Kenya University** for giving me a chance to pursue the computer science course and giving me support through the lecturers, to ensure that I have gained knowledge in this field.

ABSTRACT

I study at **South Eastern Kenya University** where am currently pursuing **Bachelor of Science in Computer science.** This report shows what I have been doing during my industrial attachment at Application Development and maintenance section of the ICT department of the County Government of Kisii and it clearly reflects the activities I participated while in the Application Development and maintenance section of the ICT department of the County Government of Kisii.

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CHAPTER ONE

Introduction

1.1 Background Information of attachee

My name is Onchagwa Davis Nyabwari, a fourth-year student in the **South Eastern Kenya University** taking **Bachelor of Science in Computer Science**. I come from Kisii County. I completed my Primary Education from St. Catherine Kanunda Primary School in 2013 where I scored 334 marks in my KCPE, then proceeded to St. Patrick's Mosocho Mixed Secondary School in 2014 and completed my Secondary Education in 2017 where I Scored a B+ of 72 Points in my KCSE and there after I Joined South Eastern Kenya University for my undergraduate degree.

1.2 Expectations from the attachment

These were my industrial attachment expectations:

- To be given chance to learn new Information Technology concepts
- Equip me with professional experience in the computer science field that can solidify my foundation as a computer scientist.
- To be tasked with Technology activities that will force me remember what I did in class.
- Be given chance to do the best of my abilities to add value to the organisation as an attachee
 of the organization.
- To get a helpful organization supervisor who will challenge me to do technology tasks so as I can get better in this field.
- To get friendly Employees who can be of help to me during the attachment.

CHAPTER TWO

Description of the Attachment Establishment

2.1 Location and brief history

The Kisii county government was established 4th March 2013. The county shares common borders with Nyamira County to the North East, Narok County to the South and Homabay and Migori Counties to the West. The county covers a total area of 1,332.7 km square and is divided into nine constituencies. It has 9 sub-counties and 45 Wards respectively. The Kisii county government begun also with a total of 10 departments each with various functions to play for easy governance of the county. The reasons why it was established was to: Reduce poverty levels, increase literacy levels and increase sustainable development.

Vision

To be a prosperous county with a high quality of life for its citizens.

Mission

To build a prosperous and peaceful county that facilitates the realization of each citizen's goals and aspiration through inclusive development.

Core Values

- Integrity
- Teamwork
- Equity
- Professionalism
- Customer Focused

2.2 Objectives of establishment

- Increase literacy Levels
- Reduce Poverty Levels
- Diversity Employment Opportunities
- Promote sustainable Development

2.3 Department in the establishment and their functions

1. Department of Administration, Cooperate Responsibility and Stakeholder Management

This is one of the 10 departments in the Kisii County Government charged with responsibility of ensuring effective delivery of both headquarter and field administrative services. It also has a mandate of ensuring effective corporate governance of Kisii County Government and stakeholder management.

Roles

- Coordinate participation of Communities in governance at the local level
- Special Program Policies
- County Policing Authority
- Responsible for Administration
- Coordination of decentralized units- urban and rural areas.
- Responsible for Communication
- Provide Corporate Services
- Carry-out Stakeholders Management
- Responsible for County Security
- Conducting County Forums
- Responsible for disaster Management and emergency response coordination
- Responsible for follow up of the Implementation of County & National Policies

2. Department of Finance and Economic Planning

The Department of Finance and Economic Planning is responsible for finance and economic planning of the County. The department's a pivotal role in the coordination of development planning, mobilization of public resources and ensuring effective accountability for use of the resources for benefit of Kisii County.

The department has other departments such as Accounting, Auditing, ICT, Insurance, pensions, Procurement. The ICT department is made up of 5 sections which include: Application

Development and maintenance, Database Administration, Security Administration, Network administration, Help desk and PC support training.

Roles

- To Implement Financial and Economic policies in the county
- Annual budget preparation
- Resource mobilization
- Managing County Government's public debt and other obligations & developing debt control framework
- Consolidating Annual appropriation accounts and other financial statements of the County Government Custodian of the inventory of County Government Assets
- Ensure compliance with accounting standards prescribed by Accounting Standards Board
- Ensure proper management and control of, and accounting for the finances of the County Government and its entities in order to promote efficient and effective use of county budgetary resources
- Maintenance of proper records for CRF, CEF and other public funds administered by County Government.
- Monitor County Government entities
- Assisting County Government Entities develop capacity
- Provide National Treasury with information
- Issue circulars
- Advise County Government Executives, County Executive Committee, and County Assembly on financial matters
- Strengthening financial and fiscal relations between the National Government and County Government in performing its function
- Reporting regularly to the County Assembly on the implementation of annual county budget

3. Department of Energy, Environment, Water and Natural Resources

The department is headed by the Executive Committee Member in charge Energy, Water, Environment and Natural Resources. This department comprises of the following sectors:

- Energy Sector
- Environment and Natural Resources Sector
- Water Sector
- Forestry Sector

The Role of this department is

• To promote the living standard of the county residents through ensuring affordable water and sanitation services, and a clean safe environment for all.

4. Department of County Health

This Department's function of establishment is to provide equitable and affordable health care at the highest affordable standards to her citizens.

Roles

- Procurement of Medical supplies and equipment
- Provision and promotion of preventive, curative and rehabilitative health services.
- Provide overall sanitation services and prevention of sanitary nuisances.
- Provision of maternal and child health services.
- Quarantine administration for disease outbreak.
- Manage clinics, dispensaries, health centres and hospitals.
- Provide health education.
- Health inspection and other health services including food safety

5. Department of Education, Labour and Manpower Development

The core function of this department focuses on the young and youthful citizens of this county. This specifically includes their welfare which comprises of their education, employment, personal health and self-reliance. Kisii County, through this department sector has put in place elaborate strategies

whose intentions are to educate, train and empower the youth who play a critical role in the development of the county.

6. Department of Roads, Public Works, Transport and Housing

The Roads, Public Works, Transport and Housing Department is headed by the County Executive Committee Member who oversees the day-to-day management and administrative activities. In order to execute its mandate, the Sector is organized into three (3) departments namely, Roads, Public Works, and Transport. It provides and manages Engineering works and services within the jurisdiction of the County. These works and services include development and maintenance of infrastructure, maintenance of motor vehicles and heavy equipment, licensing of public motor vehicles and development control.

7. Department of Lands Physical Planning and Urban Development

The Department is divided into three departments which include Lands, Physical Planning, and Survey. Its role is to formulate and implement land policy, undertake physical planning, register land transactions, undertake land surveys and mapping, land adjudication and settlement and valuation and administration of state and trust land.

8. Department of Culture, Youth, Sports and Social Services

The department comprises of five sectors gender and Social Development, Culture, Youth Development and Empowerment, Children Services, Sports.

The function of this department is to

- Offer advisory and counselling services to sportsmen and women
- Supervise sports personnel, coordinate and regulate workers in developing sports
- Upgrading of stadia and ward playgrounds in the County
- Develop, manage and implement sports programs in the County.

9. Department of Agriculture, Livestock, Fisheries and Cooperative Development

The Department of Agriculture has a role to promote and facilitate promotion of food and agricultural raw materials for food security and income, advance agro – based industries and agricultural exports; and enhance sustainable use of land resources as a basis for agricultural enterprises.

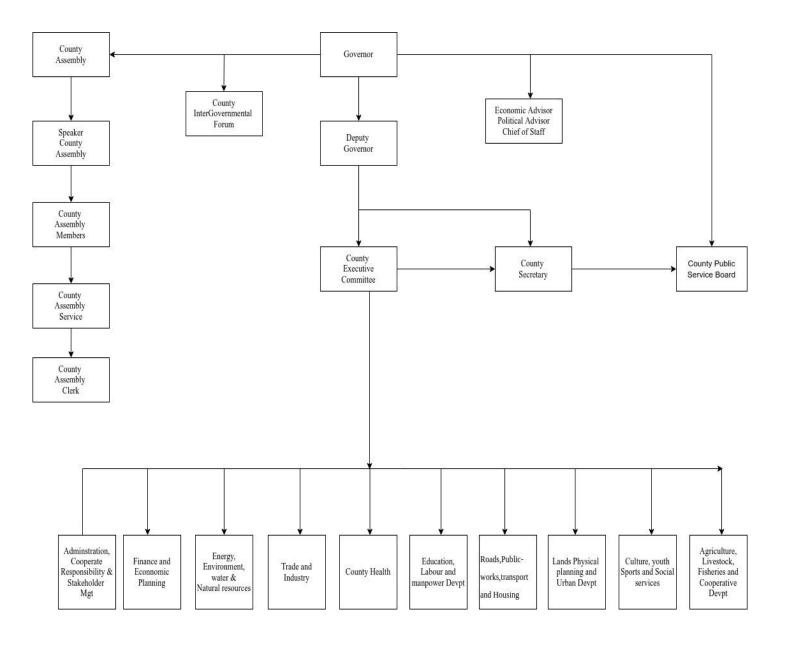
10. Department of Trade and Industry

The Department is headed by a director and has three Divisions at the Headquarters namely: Business Support Services; Trade Monitoring & Research; and Trade Policy and East African Matters.

Roles

- Promotion of retail and wholesale markets
- Development of micro, small and medium enterprises
- Private sector Development

2.4 Organizational Structure



CHAPTER THREE

3.1 Report On actual Work Carried Out and Experience gained

The major tasks I have carried out as expected in the Application Development and maintenance section of the Kisii County Government include:

- Troubleshooting inkjet printers
- Installing Microsoft office and activating it.
- Installing printer drivers.
- Bypass windows password using a software
- Update network drivers on PCs to enable internet access.
- Network installation in a new ICT office.
- Carrying out asset tagging to all new county network devices.
- Replacement of tonner in a printer.
- Configuration of Ip of telephones on a network for efficient communication.
- Installing windows operating system on a staff computer.
- Fixing cables in the ICT lab of software development.
- Refactoring the Kisii County Meeting management system Login Page
- Creating a Static Website and hosting online
- Creating a Portfolio Website.
- Debugging Error on Website Using Developer Tools
- Animating a website using Animate on Scroll Library (AOS)
- Creating a multiple text typing animation using CSS
- Working with git hub to carry out source control
- Adding favicons to Webpages
- Making a Low-Fidelity user Interface design for a Survey Application for the County Government.
- Adding Buttons to a webpage and linking to uploaded files on the internet.
- Hosting a website online using source code on GitHub
- Upgrading an ICT Support PC from windows 10 to windows 11
- Fixing visual studio software error that prevented installation of Extensions for Programming on an ICT lab PC
- Inserting a carousel on a webpage using HTML5, CSS3 and JavaScript
- Troubleshooting a staff PC that was not powering on.
- Creating a gallery using a multi-item carousel
- Refactoring a navigation bar to have different background on scrolling a website.

- Creating a dashboard for a management system application.
- Creating a website background using SVG images
- Connecting a HTML 5 form with Gmail for contact purposes.
- Fixing a telephone (office) that was not powering on
- Use event listeners of JavaScript to clear data on a form once data has been submitted to the database.
- Alert a user whether data has been sent to the database successfully or not.
- Displaying an alert when data is sent to a database from a website when a submit button is pressed.
- Installing windows operating system on a staff PC
- Activating a windows operating system that had expired on a laptop of the director of the statistics department.
- Aiding a civic and public education director log into his organization account that was denied access by the server.
- Installing an operating system in a virtual environment and configuring the operating system to share files, network with the host machine and displays the right scale.
- Creating a user interface of a Mobile application and connecting it to a hosted website for the organization.

Experience Gained

- Learnt how to troubleshoot Inkjet printers and operating Inkjet printers
- Learnt how to uninstall Microsoft office and activating it.
- Learnt how to install printer drivers and ensuring the printer can be shared among workers
 of that office.
- Learnt how to use lazersoft to bypass windows passwords.
- Learnt how to update software drivers on a PC.
- Learnt how to install a network and working with network devices such as switches.
- Learnt how to use command prompt to extract user files that were sensitive then formating the laptop.
- Learnt how to carryout asset tracking with the help with of asset tags.

- Learnt how to easily fit a new tonner to a printer.
- Learnt how to configure telephones with IP on the network.
- Learnt how to install an operating system on a computer.
- Learnt how to crimp straight through cables connecting computers from a switch.
- Learnt how to troubleshoot a network and even check it's speed.
- Learnt how to use bootstrap5 to achieve a responsive Website Design
- Learnt how to host a website online
- Learnt using CSS Flex box and CSS grid to layout a webpage.
- Learnt how to debug errors on a website using Developer on google chrome.
- Learnt how to make a website more interactive with website animations on scrolling
- Learnt how to use CSS to make multiple text typing animation on a webpage
- Learnt how to push, pull and also collaborate on projects with colleagues using git hub
- Learnt how to add favicons on webpages and linking buttons to external files on the cloud.
- Learnt how to upgrade a windows operating system on a pc and setting it up for use with ease
- Learnt how to diagnose software errors on programming software and fixing them
- Learnt to create a carousel that has a beautiful 2D appearance.
- Learnt basic troubleshooting of PCs
- Learnt how to make a website gallery using a multi-item carousel.
- Learnt how to use JavaScript event listeners to manipulate the DOM
- Learnt how to make a dashboard for a system from scratch.
- Learnt how to use css to layout a background of a webpage together with SVG images.
- Learnt how to connect a contact form with Gmail using JavaScript.
- Learnt how to troubleshoot office office telephones and ensuring it connects to the network.
- Learnt how to use the onclick event listeners to clear forms when data is sent to database.
- Learnt how to use bootstrap alerts and sweet alert Library to display an alert.
- Learnt how to format a computer harddisk but reserve documents in a given portion.
- Learnt how work with firewalls.
- Learnt how information systems' policy work to enhance security of organization accounts.
- Learnt to configure a guest operating system on a host machine and make them share resources.
- Learnt how to quickly come up with a fully working mobile application that depends on a
 website.

The role of industrial attachment is to equip a student what is required for the real world in order to be able to solve problems which cannot be done in a classroom environment. During My industrial attachment session, I gained knowledge Technically, Professionally and Socially.

Technically, I gained skills to be able to solve real life problems with ease and in a technical way thus helping me as a computer science student.

Socially; In this aspect I was able to create a network with real professionals in the Development area who I learnt from them and also even became friends to help me out in my career as a computer scientist.

Professionally; I got professional advice on more fields to venture-in and also got knowledge on what to do to be more marketable in the field of IT and stay fit in the market.

CHAPTER FOUR

4.1 Summary of the attachment activities

This is a summary of activities done during my industrial attachment:

- Troubleshooting printers
- Installing and activating softwares.
- Bypassing windows passwords
- Updating software drivers.
- Network installation and working with network devices.
- Replacing printer tonners
- Configuring Ip on office telephones for efficient communication.
- Crimping cables
- Network troubleshooting
- Refactoring systems Pages
- Creating Websites
- Styling Websites using various technologies such as Bootstrap5 and CSS3
- Animating Webpages to make them more interactive
- Hosting Websites online
- Version control using git hub
- Troubleshooting PCs
- Debugging of errors on Webpages
- Installing and Upgrading Operating Systems

4.2 Problems Encountered

During the attachment these Problems were encountered:

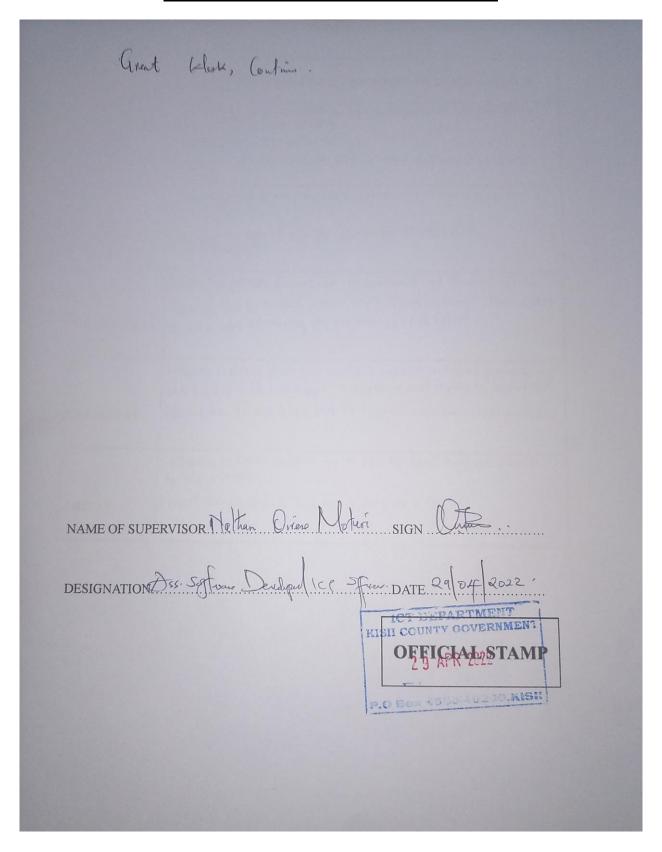
- Slow internet Connectivity
- Frequent Power blackouts in the ICT lab
- A lot of Cold in the ICT Lab

4.3 Suggestions for improvement

- Increase bandwidth for the internet
- The Blackout issue can be solved by connecting the phase with a backup generator

DAY	BRIEF DESCRIPTION OF TASKS DONE AND SKILLS GAINED
MONDAY	Orientation and Introduction to ICT employees in the application development and maintenance sections. Troubleshooting Inkjet printers Learnt how to troubleshoot Inkjet Printers and Operating Inkjet Printers.
TUESDAY	Installation of Microsoft office and activating it on a staff PC. Successfully learnt how to uninstall Microsoft office easily and activating it.
WEDNESDAY	Installing Printer drivers in the Economics and Statistics office PC. Learnt how to install printer drivers on a Pc and ensuring the printer can be shared among the workers of that office.
THURSDAY	Helping a County Staff log into his laptop that he had forgotten the password, without formatting the laptop with the help of a software and resetting the password afterwards. Learnt how to use Lazersoft to bypass windows Passwords
FRIDAY	Updating network drivers on an ICT Lab PC that had no access to the internet to have internet access. Learnt how to install software drivers and also network drivers on a PC

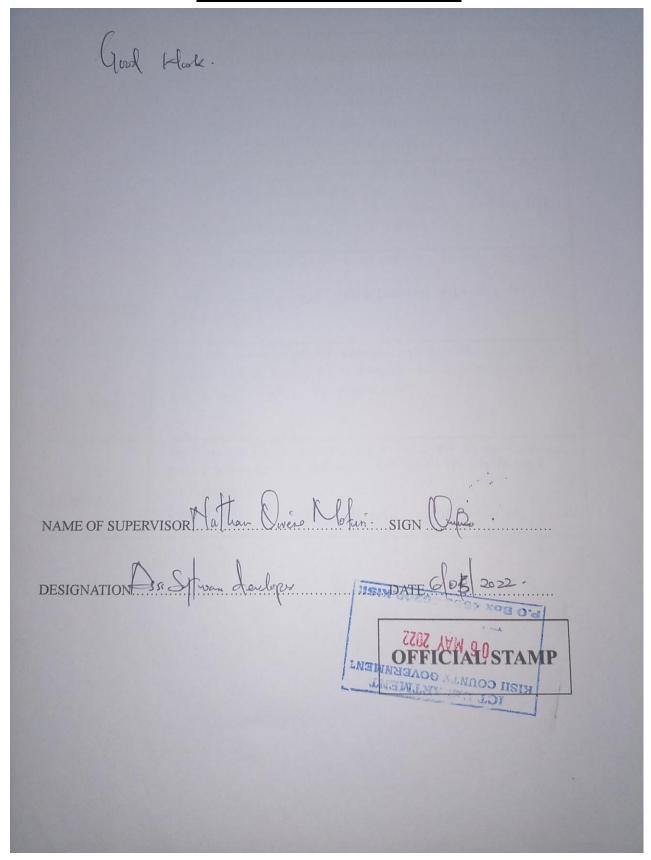
Table 1: Week 1



DAY	BRIEF DESCRIPTION OF TASKS DONE AND SKILLS GAINED
MONDAY	Network Installation in a new ICT office in the Economic development and finance department. Learnt how to install a network and also working with networking devices such as switches
TUESDAY	Troubleshooting a laptop that was unable to boot due to corrupted windows operating System. Learnt how to use command prompt to extract user files that were sensitive then formatting it.
WEDNESDAY	Carrying out asset tagging on all new county network devices. Learnt how to carry out asset tracking with the help of asset tags
THURSDAY	Replacing an old Printer tonner with a new tonner. Learnt how to easily fit a tonner to a printer when the tonner needs to be replaced.
FRIDAY	Configuring IP telephone on a network so as to ensure proper communication between county staff in various departments. Learnt how to configure telephones with IP on the network

Table 2: Week 2

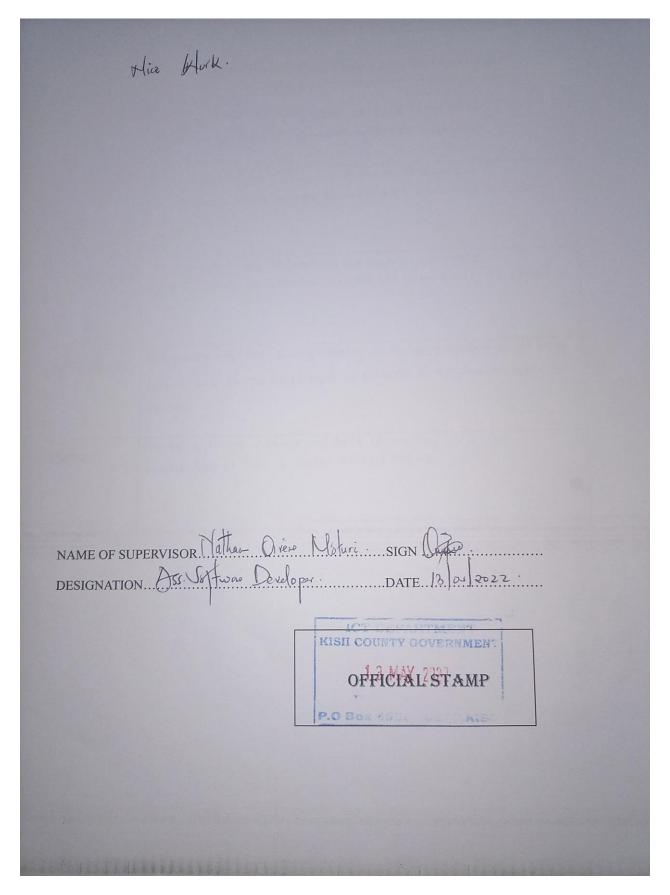
SUPERVISOR'S WEEKLY REPORT



Week starting on.......9th May.....ending on......13th May......

DAY	BRIEF DESCRIPTION OF TASKS DONE AND SKILLS GAINED
MONDAY	Installing Windows Operating System On a staff Computer. Learnt the Procedure on how to install an operating system on a computer.
TUESDAY	Fixing broken cables in the ICT Lab for Application development. Learnt how to crimp straight through cables connecting computers and Switches
WEDNESDAY	Troubleshooting the network of the county government of the ICT department. Learnt how to troubleshoot network problems and monitoring the speed of the network.
THURSDAY	Refactoring the Kisii county meeting management system login Page. Learnt how to use bootstrap5 to achieve a responsive website design.
FRIDAY	Creating a static website and hosting it online. Learnt how to host a static website online.

Table 3: Week 3



Week starting on.......16th May.....ending on......20th May......

DAY	BRIEF DESCRIPTION OF TASKS DONE AND SKILLS GAINED
MONDAY	Tasked to create a project portfolio by the supervisor. Learnt how to use CSS flex-box to carry out layouting of a webpage. Learnt how to combine both CSS flex-box and CSS grid to achieve a responsive website design.
TUESDAY	Finish creating the portfolio and debugging errors on the website. Learnt how to debug errors on a website using developer tools on google chrome.
WEDNESDAY	Animating the portfolio website. Learnt how to make the website more interactive with website animations using animate on scroll library (AOS).
THURSDAY	Creating multiple text typing animation using CSS Learnt how to use CSS to carry out a typing animation on a webpage.
FRIDAY	Working with GitHub to carry out source control. Learnt how to use GitHub desktop and git command line to push, pull and even collaborate on projects with colleagues.

Table 4: Week 4

Good Hook,	
NAME OF SUPERVISOR Nathan Ofreis Motuni SIGN June. DESIGNATION DIS SIGTURIE developer DATE 20 /05/2022.	
KISH COUNTY GOVERNMEN. OFFICIAL STAMP	

DAY	BRIEF DESCRIPTION OF TASKS DONE AND SKILLS GAINED
MONDAY	Adding favicons to webpages.
	Making a low fidelity user interface design for a survey application for the county
	government.
	Learnt how to add favicons to webpages.
	Learnt how to achieve a design of an application on paper before coding it.
TUESDAY	Adding a button to a webpage and linking it to uploaded files on a cloud database.
	Learnt how to add buttons to a website, style them and even link them
	to external files off the websites.
WEDNESDAY	Hosting a website online Learnt how to host a website online using code stored on GitHub.
THURSDAY	Upgrading an ICT support PC (HP Pro one 600 G5) from windows 10 to windows 11. Learnt how to upgrade a windows operating system on a PC and setting it up for use.
FRIDAY	Fixing Visual Studio Code error that prevented installation of extensions for programming on an ICT lab PC. Learnt how to diagnose software errors and fix them when they occur.

Table 5: Week 5

EXCellent Work
NAME OF SUPERVISOR Matter Oileis Moturi SIGN Outs. DESIGNATION ASS. Softwar Levelogu. DATE 28/03/2022.
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DAY	BRIEF DESCRIPTION OF TASKS DONE AND SKILLS GAINED
MONDAY	Inserting a Carousel on a webpage using HTML5, CSS, and JavaScript. It was a must that the Carousel to have indicators and captions for every Image. Learnt how to create a carousel that has a beautiful 2D appearance.
TUESDAY	Troubleshooting a staff PC in the Economics and Statics office of the County. Learnt how to troubleshoot a PC when having problems.
WEDNESDAY	MADARAKA DAY HOLIDAY
THURSDAY	Inserting a multi-item carousel so as to make an image gallery for a website. Refactoring a webpage navigation to have a different background on scrolling a website for visibility purposes. Learnt how to make a website gallery using a multi-item carousel. Learnt how to use JavaScript event listeners to manipulate the DOM.
FRIDAY	Creating a dashboard for a management system application. Learnt how to make a dashboard for a system from scratch.

Table 6: Week 6

Excellent progress and Mice Work.
Mt o in Mt.
NAME OF SUPERVISOR Mather Over Moture SIGN DATE 08 05 2022. DESIGNATION Ass. Software Douloper. DATE 08 05 2022.
Section of the Control of the Contro
KISH COUNTY GOVERNMEN
O 3 JUN 2022 OFFICIAL STAMP
P.O Box 4550-40130-KISI

Week starting on......6th June......ending on.......10th June......

DAY	BRIEF DESCRIPTION OF TASKS DONE AND SKILLS GAINED
MONDAY	Creating a website background using SVG images. Learnt how to use CSS to layout a background of a webpage together with SVG images to provide a curvy background.
TUESDAY	Connecting a HTML5 form with Gmail for contact Purposes Learnt how to connect a contact form built with HTML5 with Gmail using JavaScript
WEDNESDAY	Fixing an office telephone that was not powering on and not connecting to the network. Learnt how to troubleshoot an office telephone and also learnt how to connect it to the network.
THURSDAY	Use Event JavaScript event listeners to clear data on a form once data has been submitted to the database. Alert a user whether data has been sent to the database to the database Successfully or not. Learnt how to use the on click event listener to clear form fields when data is sent to the database.
FRIDAY	Displaying an alert when data is sent to a database from a website when a submit button is pressed. Learnt how to use bootstrap5 alerts and sweet alert library to display an alert.

Table 7: Week 7

EXC	ellent block.
NAME OF SUPERV	ISOR Mathen Direso Moturi - SIGN Office. SS. Software Developer. DATE 10/06/2022.
	MOFFICIAL STAMPEN 10 JUN 2022
	P.O Box 655.

Week starting on.......13th June.....ending on......17th June......

DAY	BRIEF DESCRIPTION OF TASKS DONE AND SKILLS GAINED
MONDAY	Installing windows anomating average on a staffing
	Installing windows operating system on a staff pc
	Troubleshooting a PC that was not powering on.
	Learnt how to format a portion of the computer hard disk and leaving the other portion with sensitive data.
TUESDAY	Activating a windows operating system that had expired on a laptop of the director
	Of the statistics department.
	Connecting a HTML5 form using a third party service (formsubmit.io) to a Gmail
	account.
	Learnt how to work with firewalls as I activated the windows Operating System
WEDNESDAY	Aiding a civic and public education director log into his organization account that
	he was denied access by the server.
	Learnt how to information system policy work to enhance security of the
	organization account.
THE COLUMN	
THURSDAY	Installing an operating system in a virtual environment and configuring the
	operating system to share files, network with the host machine and display the
	right scale.
	Learnt to configure a guest operating System on a host machine and make them
	share resources.
FRIDAY	
	Creating a user interface of a Mobile application and connecting it to a hosted
	website for the organization.
	Learnt how to quickly come up with a fully working mobile application that
	depends on a website.

Table 8: Week 8

