**Assignment : Web Development**

For Learner Use:

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| Surname of Learner | Naidu |
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| Date of Test Given | 31/08/2020 |
| Location / Branch | iStudent Academy, Durban |

For Assessors Use:

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| Name of Branch | Durban |
| Name of Facilitator |  |
| Name of Assessor |  |
| Assessor Number |  |
| Mark Allocation | 140 |
| Mark Obtained |  |
| Competency Status (C / NYC) |  |

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| Unit Standards MICT Seta | 115368 , 115372 |

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| Candidates Signature | C:\Users\KIAN\AppData\Local\Microsoft\Windows\INetCache\Content.Word\(KNPMB070)Kian Naidu.jpg | Date of Submission | 16/11/2020 |
| Assessors Signature |  | Date Marked |  |

**Assignment set up:**

This assignment is made up of **four** tasks:

• Task A – Design a five page website

• Task B – Build a functioning five page website

• Task C – Test a functioning five page website

• Task D – Knowledge

**Grading criteria**

**Pass –** Candidates must achieve 84

**Merit –** Candidates must achieve 105

**Distinction–** Candidates achieve 120

**Scenario**

A local IT company has recently been set up in your home town which specialises in building high specification computers for gamers. They also sell computer games.

This company has asked if you could build a website to advertise their products and the top 10 computer games on the market at the moment.

Read all of the instructions carefully and complete the tasks in the order given.

**Task A – Design a five page website (45)**

1 Prior to designing your website it is important that you understand exactly what is required of the website. Firstly, you will need to interview the owner of the computer shop to gain the following information (the assessor will act as the owner): (10)

• the aim and content/pages of the website

• any user requirements

•implementation of the website

• timescales for completing the website

Once you have this information you will need to produce a short plan that outlines the details you have learned.

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| **INTERVIEW QUESTIONS**  What guidelines should be followed when creating each page?    What do you expect each of the 5 pages to contain, and how should they be implemented?    What is the target market as well as the age group of users you expect to visit the website?    Should the website be more vibrant in colours or more plain and simple?    Should images/videos be available for each computer game ranked?    What criteria should the video games be ranked by (e.g. best indie games, best AAA games, best sellers)?    Should the ranking be based on this year or a previous year?    Does the user need to enter any information or provide input in any of the 5 pages, if so what would that be?    When do you expect the website to be finished by?    Do all pages need to follow the same colour scheme? |

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| **IMPLEMENTATION PLAN (based on answers)**  What guidelines should be followed when creating each page?  **There is no specific guidelines, go with whatever you feel is best**  What do you expect each of the 5 pages to contain, and how should they be implemented?  **I would like there to be a home and about us page, a page for our top 10 games and another page for our top 10 products and a contact us page**  What is the target market as well as the age group of users you expect to visit the website?  **Mainly the younger generation, between 18-24 years old.**  Should the website be more vibrant in colours or more plain and simple?  **Would like more vibrant, inviting colours**  Should images/videos be available for each computer game ranked?  **Yes**  What criteria should the video games be ranked by (e.g. best indie games, best AAA games, best sellers)?  **(you can determine this, chose any category you like and use that)**   Should the ranking be based on this year or a previous year?  **This year**   Does the user need to enter any information or provide input in any of the 5 pages, if so what would that be?  **Would like the users to provide input and feedback on the contact us page, about games they would like to see, any recommendations they have for improving the site etc.**   When do you expect the website to be finished by?  **3-4 Weeks**   Do all pages need to follow the same colour scheme?  **Yes, would like the website to have a certain amount of uniformity.** |

2 The computer company has initially asked you to design a five page website that advertises the products and the top 10 computer games. The designs need to show the following: (35)

• layout of each page

• a navigation diagram/storyboard/flowchart showing navigation between pages when items are clicked

• the format of content including CSS

• at least 3 different interactive features

• at least ten images

• Any animation feature

***\*The plans can either be hand drawn or drawn using ICT. These will be additional digital or screenshot attachments to be submitted.***

**Designs can be found in the ‘layout’ folder**

**Task B – Build a functioning five page website. (35)**

1 Using the plans created in task A, build the functioning **five** page website that advertises the products and shows the top 10 computer games.

Ensure your finished website includes the following:

• suitable CSS styling on each page

• **five** functioning structured pages

• At least ten images of products and **all** of the games

• navigation between each page

• **three** interactive features

• **one** animation.

**website can be found in the ‘functioning website’ folder.**

***\*The actual code will be assessed as well as the functioning website. You need not build the website on a functioning registered domain – it can be local. This must be shown in Task C.***

**Task C – Test a functioning five page website (10)**

1 Now that your website is complete, complete the following tests: (10)

• functionality testing, open your website in two different web browsers

• test your navigation, demonstrating the functionality of each link

• test your interactive features.

Record any issues encountered for each below. Provide Screenshots.

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| Test on edge, functional , navigation works, interactive buttons work. (Slight issue with edge itself in that it cannot read images inside folders so all images had to be placed in one folder specifically for edge to load the images)  C:\Users\KIAN\AppData\Local\Microsoft\Windows\INetCache\Content.Word\Task C Edge image2.png  Test on Chrome, functional , navigation works, interactive buttons work  C:\Users\KIAN\Desktop\Web Dev Assignment\Testing on 2 browsers\Task C Chrome image2.PNG |

**Task D – Theory (50)**

Task D1: Describe **three** hardware and **three** software components that enable access to the web. (12)

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| Hardware:  1. DSL Modem – coverts digital signals received into analogue signals that can be sent over a telephone line. These are usually built into internet routers.  2. NIC (Network Interface Card) – Allows a computer to communicate to a network by converting analogue signals into digital signals which the computer can understand.  3. UTP (Unshielded Twisted Pair) – A pair of wires that are twisted around each other in order to connect to Ethernet devices to transfer data.  Software:  1. Firewall – Allows connection between the device and network by allowing certain ports to open for communication  2. A browser – Allows users to access electronic documents from the world wide web  3. Internet Protocol – allows for a network to access the internet and thus the web, without an IP connecting to the web is virtually impossible |

Task D2: Explain the role of the following protocols: (6)

* TCP/IP including IPv6
* HTTP
* SMTP.

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| TCP/IP – A suite of communication protocols used to allow network devices to interconnect with one another on a network such as the internet. IPv6 is the most recent version of Internet Protocol, this new version provides identification and location systems for computers.  HTTP – An application protocol that allows for distributed, collaborative, hypermedia info systems to communicate data on the world wide web by users.  SMTP – A protocol that allows for the transfer of electronic mail |

Task D3: Explain the role of the following: (6)

* Internet Service Provider
* Web hosting service
* Domain name registrar.

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| Internet Service Provider – Responsible for making sure users can connect to the internet, routing internet traffic, resolving domain names and maintaining the network infrastructure which allows for internet access.  Web hosting service – Provides the technologies and essential services for a website/web page to be viewed on the internet.  Domain name registrar – A company that manages reserving internet domain names. |

Task D4: Identify and briefly describe **four** types of web functionality. (8)

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| Website purpose – The primary purpose of the website and what features are needed to meet the end goal.  In-site search – allows users to search for information within the site itself for ease of access.  Blog/News – Keeps users informed about the most recent and up to date events going on around them.  Location map – Gives users accurate GPS information in order to see exactly where they are in relation to something else without the hassle of looking it up separately.  Event Calendar – An organized way of showing upcoming events to the user in relation to the current date so they can plan in advance, or know the time frame between different events. |

Task D5: Explain the use of **two** different Mark-Up languages. (4)

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| XML (extensible Mark-up Language) – Simplifies things by storing data in plain text format which provides hardware-independent way of storing, transferring and sharing data.  KML (Keyhole Mark-up Language) – A file format which displays geographic data in an Earth browser such as Google Earth. |

Task D6: Explain the use and functionality of: (8)

* Web runtime environments
* Web application programming languages
* Databases including SQL
* PHP

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| * The web runtime environment is the environment in which a program or application is executed. This allows a specified area for an application to run and easily debug if there is an error without ending up crashing the computer if it had been done outside the runtime environment. * The purpose of web app programming languages is to allow for the creation of backend and frontend development and the creation of webpages as a whole. The functionality comes from the different types of languages such as html that provides the front end interface, CSS that provides the style and layout for the web page and finally JavaScript that provides the ability to change the webpage dynamically via inputs/outputs given by the user. * Databases allow for the storage of small to large amounts of data that may or may not be linked in relationships. SQL allows for the filtering of specific records in a database and to also edit the database in a much more efficient way. The functionality of a database is mainly shown through when very large amounts of data needs to be stored as it will be kept stored in a structured manner in rows and columns with primary keys for unique values. SQL shows its functionality since it is able to filter through millions of records and find information that would take any normal person hours to do. This saves time and increases productivity since SQL is also able to update multiple records based on specific criteria as well as delete records. * PHP is used for creating dynamic websites and platforms, it is a server-side language. Its functionality involves the fact it can interact with many different database languages such as MySQL. It is also able to run on most well-known OS software such as Linux, windows, Unix, mac OS and more. It is also able to encrypt data and restrict users on a site which is useful for security management. |

Task D7: Identify **one** typical stack combination that can be used for web development. (2)

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| LAMP(Linux, Apache, MySQL, PHP) stack |

Task D8: What is an API and describe a scenario where it would be required. (4)

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| An API is an application programming interface that acts as a software intermediary that allows for two applications to communicate to each other, taking in an input and returning an appropriate output for the user. An example would be buying a game from amazon, you would need to send in your banking details and amount of that game you want, the information is then sent from Amazon’s API once you order the item to check in their databases if the item you requested is still available then returns an output depending on whether your purchase was successful or not. |