**DAILY ASSESSMENT FORMAT**

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| **Date:** | **1 june 2020** | **Name:** | **Sanketh S Acharya** |
| **Course:** | **DIGITAL DESIGN USING HDL** | **USN:** | **4AL17EC084** |
| **Topic:** | **1. Industry Applications of FPGA**  **2. FPGA Business Fundamentals**  **3. FPGA vs ASIC Design Flow**  **4. FPGA Basics – A Look Under the Hood** | **Semester & Section:** | **6TH SEM & ‘B’ SEC** |
| **Github Repository:** |  |  |  |

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| **FORENOON SESSION DETAILS** |
| **Image of session**  **C:\Users\cw\Desktop\1 j.PNG**  **C:\Users\cw\Desktop\1 j2.PNG** |
| **Report –**          What is an FPGA?  **An FPGA is a (mostly) digital, (re-)configurable ASIC.  I say mostly because there are analog and mixed-signal aspects to modern FPGAs.  For example, some have A/D converters and PLLs.  I put *re-* in parenthesis because there are actually one-time-programmable FPGAs, where once you configure them, that’s it, never again.  However, most FPGAs you’ll come across are going to be re-configurable.  So what do I mean by digitally configurable ASIC?**  **I mean that at the core of it, you’re designing a digital logic circuit, as in AND, OR, NOT, flip-flops, etc.  Of course that’s not entirely accurate and there’s much more to it than that, but that is the gist at its core.**  C:\Users\cw\Desktop\1 j 3.PNG How Does an FPGA work? FPGA-basics-gates-and-flip-flops  **You’re designing a digital circuit more than anything else, basically at one layer of abstraction above the logic gate (AND, OR, NOT) level.  At the most basic level, you need to think about how you’re specifying the layout and equations at the level of LUTs (Look-Up Tables) and FFs (Flip-Flops).**    FPGA-look-up-tables-and-flip-flops    **Otherwise you’re circuit can get very large and slow very quickly.  You’ve got a very detailed level of control at your fingertips, which is very powerful, but can be overwhelming, so start slow.  You’ll be determining the # of bits, and exact math / structure of each function.**    **An FPGA is a synchronous device, meaning that logical operations are performed on a clock cycle-by-cycle basis.  Flip-flops are the core element to enabling this structure.**    **In general, you’re going to put digital data into an FPGA and get digital data out of it through various low-voltage digital I/O lines, sometimes many bits in parallel (maybe through one or more A/D converter outputs or an external DRAM chip), sometimes through high-speed serial I/O (maybe connecting to an Ethernet PHY or USB chip).** |

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| **AFTERNOON SESSION DETAILS** | | | |
| **Image of session**  **C:\Users\cw\Desktop\s c.PNG** | | | |
| **Report –**  **Worms and malware:**   * **Difference between worms/malware/Trojans** * **Types of viruses:** * **Spyware** * **Ransomware** * **Adware** * **Worms** * **Malware trojans**   **Vulnerabilities:**  **A buffer overflow , or buffer overrun , is a common software coding mistake that an attacker could mistake that an attacker could exploit to gain access to your system**  **Case studies:**   * **Case study related to virus** * **Case study related to buffer overflow**   **Case study : wanna cry?**  **What is wanna cry?**  **the wanna cry ransomware attack was a may 2017 worldwide cyberattack by the rasomware cryptoworm , which targeted computers running the Microsoft windows operating system by encrypting data and demanding ransom payments in the bitcoin cryptocurrency** | | | |