Department of Computer Science
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Master's Thesis - Work Plan

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0.1 Work Plan

Based on the task list provided in the description document, I would like to divide the task into the following phases and explain my objective on each of the milestones.

1. `Research Phase:` In this phase, I would mainly focus on five subtasks
    - To familiarize myself with Xilinx PYNQ board and understand completely how the hardware design and also the tools required such Xilinx Vivado works. For this, I will use the Zynq Z7020 board and set up the PYNQ environment as per[1] and run given examples.
    - To familiarize myself with the internal working of the tool Hot Spicy. This will involve a detailed analysis of the code of the said tool from [2] and also run the given examples in the tool in an already setup environment Which will also assist me to evaluate the tool.
    - Research of the available libraries which support data analytics and machine learning in python. Discuss and come to a conclusion on which libraries can be implemented in the setup environment and also within the timeframe of the master's thesis.
    - Conduct a literature survey based on the previous and current research of Python-based high-level synthesis that will assist me to decide on which methodologies and techniques can be inherited or avoided for extension of Hot Spicy tool. This will also be a starting step for the documentation.
    - Create and provide a proposal document on what and how the Hot Spicy tool can be extended to support the data analytics and machine learning libraries in python. This document will contain the methods and techniques which will be used for implementation and discussion on existing challenges in the tool and solutions accordingly.
2. `Implementation Phase:` In this phase, I will focus on two sub-tasks
    - Post-approval of the proposal the implementation work will be started and this phase will consume more time and involve multiple reviews.
    - Once implemented a simple demo application will be developed such as matrix multiplication to demonstrate the implementation, extension of Hot Spicy tool and results
3. `Documentation:`
    - This phase will involve the complete documentation of the master's thesis which will be refined over multiple reviews.
4. `Presentation`
    - This will be the final presentation of the master's thesis and hopefully better grades after this.

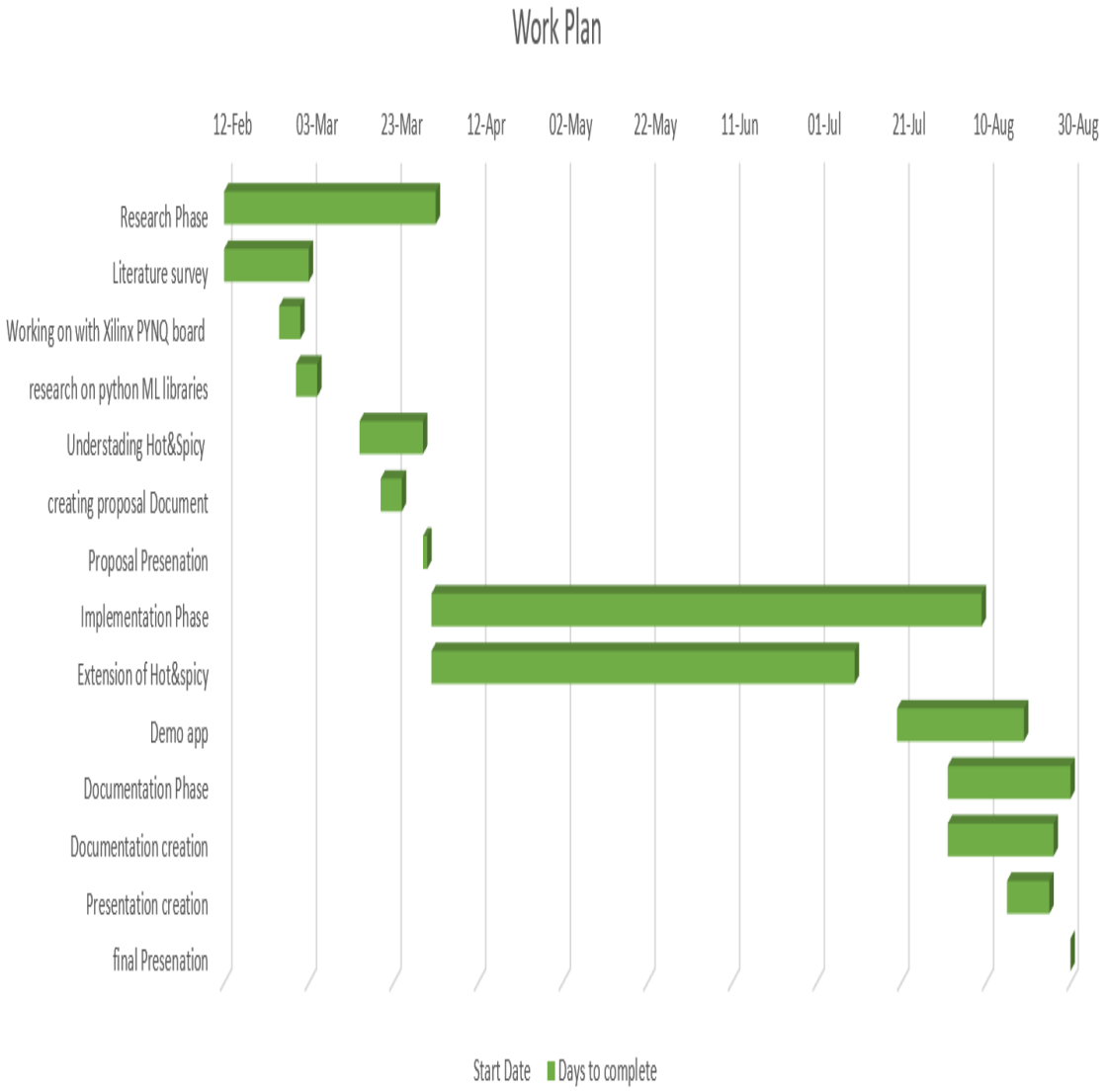

Figure 1: Gantt chart representing Work Plan

Bibliography

[1] Pynq: Python productivity for zynq: http://www.pynq.io/home.html.

[2] Hot spicy: Python tools for fpgas: http://www.pynq.io/home.html.