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Assignment No :- 1

Aim :- Study of Raspberry-Pi, Beagle board, Arduino and other micro controller (History & Elevation)

Theory :-

Study of Raspberry Pi3 :- The raspberry Pi is a series of small single-board computers developed in the United Kingdom by the raspberry Pi foundation to promote the teaching of basic concepts of computer Science in schools & in developing countries The Original model became far more popular than anticipated, The first generation (Raspberry Pi1 Model B) was released in February 2012, followed by the simpler and cheaper Model A. A raspberry pie zero with smaller size & reduced input/output (I/O) and general purpose input/output capabilities was released in November 2015 for US$5. Raspberry Pi 3 Model B was released in febwrary 2016 & has on-board wifi, Bluetooth & USB boot capabilities. By 2017, it bcz the newest mainline Raspberry Pi, on 28 feb 2017. HDMI & composite video are supported with a standard 3.5 mm phono jack for audio output lower level o/p is provided by a number of GPO pins which support common protocols like I2C. The B-Models have an 8P8C Ethernet port & the Pi3 & Pi zero W have on-board wifi 802.11n & Bluetooth. Prices range US$5 to $35.

History and Elevation :-

In 2006 early concept of raspberry Pi were based on the Atmel ATMega644 microcontroller. Its

Schematics and PCB layout are pubicaly available foundation wise trustee Eben upton assembled a group of teachers, academics & computer enthusiasts to device a computer to inspire children. The Computer is inspired by Acorn's BBC Micro of 1981. The Model A, Model B & Model B+ names are references to the original models of the British educational BBC Micro Computer, duveloped by Acorn Computers.

The foundation's goal was to offer two version priced at US$25 & $35. They started accepting orders for the higher priced Model B on 29 Feb 2012. The lower cost Model A on 4 Feb 2013 & the even lower cost (US$ 20) A+ on 10 Nov 2014 On 2015 26 Nov, the cheapest Raspberry Pi yet, the Raspberry Pi zero, was launched as US$5

Study of Beagle Board :-

The beagle board is low power open source single board computer produced by Texas Instruments in association with Digi-Key & Newark element 14. The beagle board was also designed with open Source S/w duvelopment in mind, and as a way of demonstrating the Texas Instruments OMAP 35 30 System-on-a chip. The board was duveloped by a small team of engineers as an educational board that could be used in colleges around the world to teach open source h/w & s/w capabilities. It is also sold to public under the Creative Commons Share-alike license. The board was designed using Cadence ORCAD for Schematics & Cadence Allegro for PCB Manufacturing; no Simulation S/w was used.

Study of Arduino :-

The Arduino project started at the interaction design institute Ivrea (IDII) in ivrea, Italy. At that time, the students used a BASIC Stamp microcontroller at a cost of $100, a considerable expense for many students. In 2003 Hernando Barrage created the development platform wiring as a Master's thesis projects at IDII, under the supervision of Massimo Banzi & Casey Reas, who are known for work on the Processing language.

The initial Arduino core team consisted of massimo Banzi, David Cuartielles versions, Tom Igoe, GianlucaMartino, and David Mellis, but barragin was not invited to participate.

Following the completion of the wiring prog, lighter and loss expensive versions were distributed in the Open Source community.

Adafruit Industries, a New york city Supplier of arduino boards, parts and assemblies, estimated inmid-2011 that over 300,000 official aurduino has been commercially produced & in 2013 that 700,000 official boards were in users hands.

Around the Same time Massimo Banzi announced that the arduino foundation would be a new begining for arduino. But a year later, the foundation STILL hasn't been established, and the state of the project remains Sun clear. The Controversy Surrounding mustro continued when, in july 2017, he reportedly pulled many open source licenses, schematics & code from the arduino web-

site, prompting security scrutiny & outcry. In October 2017, Arduino announced its partnership with ARM Holdings (ARM). The announcement said, in part, "ARM recognized independence as a core value of arduino without any lock-in with the ARM architecture." Arduino intends to continue to work with all technology vendors & architectures.

Conclusion :-

Thus, we have studied history of Raspberry Pi, Beagle bone and Arduino.