Operating Systems

Assignment 3
Part 2

- **Dewangee Agrawal (2016034)**
- **Suraj Prathik Kumar (2016101)**

Description of your code and how you implemented the function -

- The real 16 bit mode is converted to protected mode. To access more than 1 MB of memory we enable the A20 line by calling the 'A20-Gate activate function'.
- The vga text mode is set by int 0x10.
- The Global descriptor table is enabled and loaded by the pointer p.
- The protected mode bit is set on special CPU register in cr0.
- The long jump is taken to the code segment.
- The start of the global descriptor table is defined through a null segment.
- The code segment is defined in the table.
- The data segment is also defined in the table.
- The GDT is ended and the calling takes place through the boot and boot2 segments.
- The bits is defined as 32 bit which is later converted to 64 bit through the times option.
- The boot2 segment sets values to the registers and to the data segment.

- We set up page tables and enable paging and set the address of the PML4 register as the value of the CR3 register,

- The VGA text buffer is directly written to through the loop.

- We specify the text, the colour and the spacing in this loop and print “Hello World” as the text to be displayed in QMEU..