

# Assignment 1 - Question 1

**Author - Ashutosh Sahu - 11840260**

**Note** - In case the code/text formatting looks odd in this PDF, you can view the original Dropbox Paper [here](#).

### A. Process table definition of Xinu.

Process table of Xinu or the `proctab[]` data structure is a structure in C whose definition can be found in `~/xinu/include/process.h`.

This definition is as follows:

```

struct procent {
    /* Entry in the process table
    */
    uint16 prstate; /* Process state: PR_CURR, et
c.    */
    pri16 prprio; /* Process priority
    */
    char *prstktptr; /* Saved stack pointer
    */
    char *prstkbase; /* Base of run time stack
    */
    uint32 prstklen; /* Stack length in bytes
    */
    char prname[PNMLEN]; /* Process name
    */
    sid32 prsem; /* Semaphore on which process
waits    */
    pid32 prparent; /* ID of the creating process
    */
    umsg32 prmsg; /* Message sent to this proces
s    */
    bool8 prhasmsg; /* Nonzero iff msg is valid
    */
}

```

```

        int16    prdesc[NDESC]; /* Device descriptors for proc
ess        */
};

```

## B. Different process states in Xinu.

A process can attain 8 states in Xinu. These states are defined in `~/xinu/include/process.h`. They are as follows:

```

/* Process state constants */
#define PR_FREE      0      /* Process table entry is unused
    */
#define PR_CURR      1      /* Process is currently running
    */
#define PR_READY     2      /* Process is on ready queue
    */
#define PR_RECV      3      /* Process waiting for message
    */
#define PR_SLEEP     4      /* Process is sleeping
    */
#define PR_SUSP      5      /* Process is suspended
    */
#define PR_WAIT      6      /* Process is on semaphore queue
    */
#define PR_RECTIM    7      /* Process is receiving with tim
eout    */

```