Main program from mm1_simple.c

```
//===== Main program ====================================
int main(void)
{
  double   end_time = SIM_TIME; // Total time to simulate
  double   Ta = ARR_TIME;       // Mean time between arrivals
  double   Ts = SERV_TIME;      // Mean service time
  double   time = 0.0;          // Simulation time
  double   t1 = 0.0;            // Time for next event #1 (arrival)
  double   t2 = SIM_TIME;       // Time for next event #2 (departure)
  unsigned int n = 0;           // Number of customers in the system

  // Seed the RNG
  rand_val(1);

  // Main simulation loop
  while (time < end_time)
  {
    if (t1 < t2)                    //** Event #1 (arrival)
    {
      time = t1;                    // Set time to that of current event
      n++;                          // Increment number of customers in system
      t1 = time + exponential(Ta);  // Assign time for the next arrival event
      if (n == 1)                   // If first customer in system then
        t2 = time + exponential(Ts); //   assign its departure time
    }
    else                             // *** Event #2 (departure)
    {
      time = t2;                     // Set time to that of current event
      n--;                           // Decrement number of customers in system
      if (n > 0)                     // If customers in system then
        t2 = time + exponential(Ts);  //   assign next departure time
      else                           // If no customers in system then
        t2 = end_time;               //   assign next departure to "infinity"
    }
  }

  return(0);
}
```

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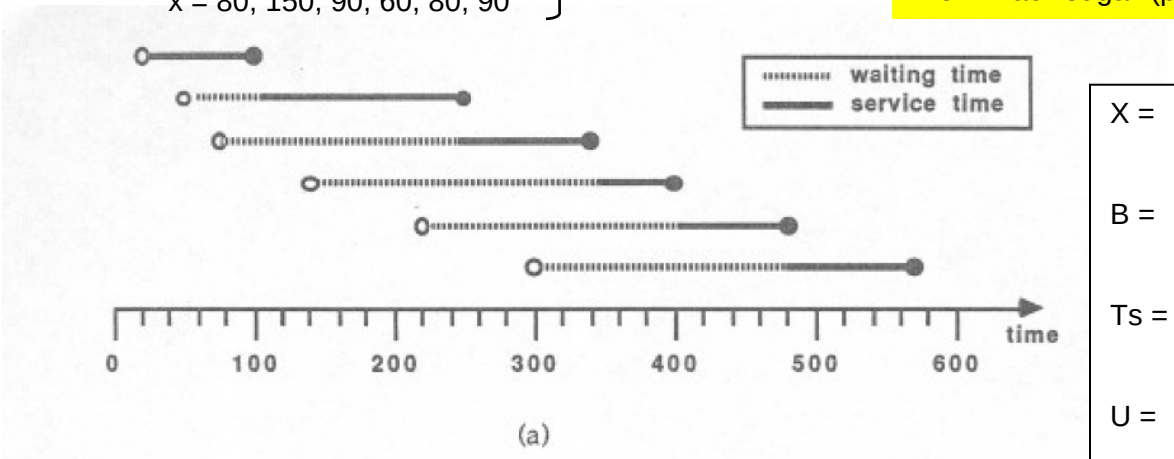
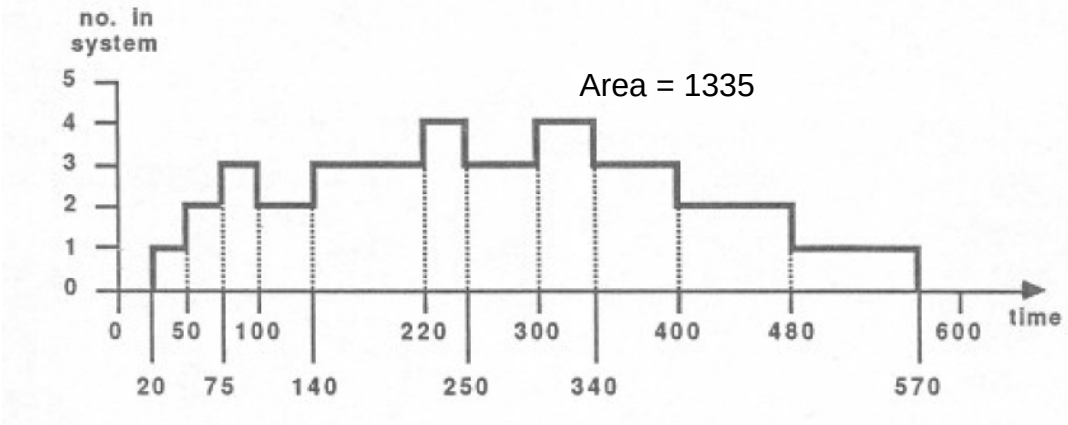
a = 20, 30, 25, 65, 80, 80
x = 80, 150, 90, 60, 80, 90

} Given

From MacDougall (page 15, Fig. 1.5)



(a)



X =

B =

Ts =

U =

W =

Wq =

L =

Lq =