Jorush J. Doololy Segsom Number 1.03 Dustion Dosign - Swelaf and impliament spec le program to construct Predictive 12201 porsong Table for the grammer rules: AY aBa, BY GBJE. Use this table to passe the sentence : abba & Moswer # include 28td/16 h) # include 2 string. b) # irehide < stations oton prod[3][10]= {"A+aBa", "B+ 6B", "B+ B+ B+ Co] start (2); int top:-1; int j:0; K,1; void push (chan item) The second of th stack[+++op]= item; void pope) sopedop-1; void display () into; fonlo=dop; 070:0--) printy (10 c1, stack (3) }

void adook proh (champ) 9 if (p== 'A') popu; 607 (g=847)en (print[0]-1: j=3: j--) } push (prod (o) 757) else popes. for 1j= synles (prod Ci) -I; j+=3; j--) push (prod [,] GJ). void maine) chan c. int. i. print (" first (B) = fal 1+"). printfly fins+(B) = \$6.08 (th). print (a jollow (B) = fag \n \n'); print (" + a + b + d \n"). print (MA 1+ 1.8 \n", prod [0]) printf ("B t 1.5 t 1.5 \n) prod [2] prod [1], priorit ("anten she input string denominated with groof ("Vis") joput) Jon (i=0; input (i]!= 1 vo; it+) (Comput (i) ;= 'al & & input (i) != 'b' & & Cionputtio Eprinty ("invalid suring");
exit(0);

if Ciaput (i-1]! - '\$') printf (" In In Input string entened without and man he exit(0); Push ('a'); push ('A') phints ("InIn stack It Input It action 1); print/ ("10 - . . . while (i ! - somen (input) & & stock [top] != 1\$1) posiny (1(01) for (1= +ap; 1) = 0; 1--) printf ("1.e", stack Co) void moin () chan es inti; printf(" line+(A) = fail 1+"); printf (bollow(A) gag\n"); print (* finst (B) = 96, B] (+1); print ("follow(B) = fat (ning) print (" + a + + 6 + \$ \n"). point ("A t". 1.8 \ n", prod (0)) print luerten are infait string denninded with & to, scarf to 180, input) for (1=0; sapetlitelousitt)

if (Enput (i) != 101) && (input [i] != 161) && (input [i] != 181)) print [" invalid extring") exit(o); is (input (i-1]! = y') printf (" In In Input string entered without end marken { cxit(o); push ('\$'); push ('A'); printf (Inin dack it input it actions), while (i! = 8 34 nlen linput) 88 stack (tap)! = 14) point (" n") bon C1= +0p; 1>=0;1--) print ("V.c" - Stack (I)); print (11x+11) 607 (1=); 128+11/en (input); 1++) printf !" " c", input [1] print (1 1/2) if lotack (FOD] = = A) I pointy (-11 Ary aBa")

Stack push ("A"); else if (stack [40] = = 11811)

(if lingual [i] != 181) }

print ("B -> @") smindf (" \+ motohed@ "); (נומנים else print ("B 7 (B") stackbush ("B"); olse If I stock[tob] = = input [i]) print(* pop 1/e", input (i)) printf (" \+ material x.c", input (17); pop(); else bneak; if (8dack [40p] == '8' && input [i] = = '\$') printy (" \n & st &"); Accepted \p"); printy CKIN Valid string printf (un Involled string nejected in)) else

Outfut

\$ gce 3.0 \$. la. out 60010w(A) = \$ \$3} bins + (A) = fag 61 ns +(B) = \$6, @ } bollow (B) = faj. 0 -6 A 70Ba A B 768 B > 0 orning desemmined with & so paise B onto she input a66a \$ aedion input Stack A 7080 0660\$ Ad materied a popa 066a \$ a Bo & B 7 6B 66 a \$ Bas motehed t. pob6 66ag 68a \$ B76B 600 modeled 6 Ba\$ pop b 60\$ 0Ba\$ matche d @ B7 @ 9 matched a Bad pop a as 28 \$ string suepted.

Wollid

```
student@student-virtual-machine:~$ ./a.out
first(A)={a} follow(A)={$}
first(B)={b,@} follow(B)={a}
                 Ь
                         $
Α
        A->aBa
                B->bB
В
        B->@
enter the input string terminated with $ to parse:-abba$
       Input
stack
               action
A$
        abba$
                A->aBa
aBa$
        abba$
                        matched a
                popa
Ba$
        bba$
                B->bB
bBa$
       bba$
                        matched b
                popb
Ba$
       ba$
                B->bB
bBa$
                popb
                        matched b
       ba$
Ba$
        a$
                B->@
                         matched @
        a$
                        matched a
a$
                popa
$
        $
Valid string Accepted
```

student@student-virtual-machine:~\$ gcc 3.c

```
first(A)={a} follow(A)={$}
first(B)=\{b,0\} follow(B)=\{a\}
                Ь
                        $
         а
       A->aBa
В
       B->@
               B->bB
enter the input string terminated with $ to parse:-abaa$
stack Input action
A$
       abaa$
               A->aBa
       abaa$
aBa$
                       matched a
               popa
Ba$
       baa$
               B->bB
       baa$
                       matched b
bBa$
               popb
Ba$
               B->@
                       matched @
       aa$
a$
       aa$
               popa
                       matched a
Invalid string rejected
```

student@student-virtual-machine:~\$./a.out