Assignment No2 Solution

**CS 606**

For Any Solution Just Comment on Website

**Consider the following CFG.**

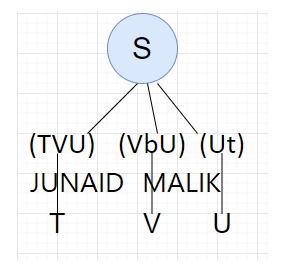
S 🡪 TVU | VbU | Ut

T 🡪 dt | UV

U 🡪 g | ε

V 🡪 h | ε

**EXPLANATION: (Not Necessary) But Sometimes Question will be asked in EXAM so Concept is better.**

* **First of Terminal =terminal**
* **First of** ε= ε

V 🡪 h | ε is me see (h, ε) took as a first then

U 🡪 g | ε is me see (g, ε)

Took as a First then

T 🡪 dt | UV is me see first is d then U the value of U find (g, ε) then V and the value of V is (h, ε) So

T 🡪 dt | UV = {d,g,h, ε}

Same as it

S 🡪 TVU | VbU | Ut

First (S) is T and T is Equal to {d, g, h, ε} Then Capital V and V is Equal to (h, ε) so h and ε already present the U and U is Equal to the (g, ε) So g and ε already Presence Then check VbU so the Value of V and U already present then small b will be in so new Value find

{d, g, h, ε, b,} Then check the Ut So the VALUE of U Already in so New

Value Find

{d, g, h, ε, b, t}

**SOLUTON:**

1. **Find First sets for above grammar.**

First (S)=First (TVU) u First (VBU) u First(UT).

= {d, g, h, **ε,** b, t,**}**

First (T) = {d, g, h, **ε}**

First(U) = {g, **ε}**

First(V) = {h, **ε}**

**PART B:**

S 🡪 TVU | VbU | Ut

T 🡪 dt | UV

U 🡪 g | ε

V 🡪 h | ε

* Place $ in FOLLOW(S), where S is the start symbol and $ is the input right end marker

First (T) = {d, g, h, **ε}**

First(U) = {g, **ε}**

First(V) = {h, **ε}**

* **Follow of T is first of VU and First VU is V the Value of V is {h} and the first of U is {g}, and Follow of TVU is S so value of S is {$} then original Value becomes {h, g, $}**
* **The Follow of U is follow of S so S becomes {$}, then follow f U is small {t}, then** UV follow of U is first od V so Value of U is already presence

**SOLUTION:**

1. **Find Follow sets for above grammar.**

Follow (S) = {$}

Follow (T) = {h, g, $}

Follow (U) = {$, t, h, g}

Follow (V) = {b, $, g, h}