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Batch: B   **Div: A (Te Comps)**

Subject: SPCC

Topic: Intermediate Code Generation

Code:

```python
while(True):
    print("1 : assignment 2: arithmatic 3: relational 4: exit")
    code = int(input())
    if code == 1:
        print("enter assignment equation")
        str = input()
        str_ls = str.split('=')
        a = str_ls[0]
        b = str_ls[1]
        print(f"temp = {a}")
        print(f"{b} = temp")
    elif code ==2:
        print("enter arithnatic equation")
        str = input()
        first = str[:3]
        second = str[3:]
        print(f"temp = {first}")
        print(f"temp1 = temp{second}")
    elif code == 3:
        print("enter relational equation")
        str = input()
        str_ls = str.split(' ')
        a = str[:1]
        op = str[1:3]
        b = str[3:]
        address = 100
        print(f"{address} if {a}{op}{b} goto {address+3}")
        address = address+1
        print(f"{address} t=0")
        address = address+1
        print(f"{address} goto {address+2}")
        address = address+1
        print(f"{address} t=1")
    else:
        break
```

OUTPUT:

```
1 : assignment 2: arithmatic 3: relational 4: exit
1
enter assignment eqn
x=y
temp = x
y = temp
1 : assignment 2: arithmatic 3: relational 4: exit
2
enter arithnatic eqn
a+b-c
 temp = a+b
temp1 =  temp-c
1 : assignment 2: arithmatic 3: relational 4: exit
3
enter relational eqn
x>=y
100 if x>=y goto 103
101 t=0
102 goto 104
103 t=1
1 : assignment 2: arithmatic 3: relational 4: exit
3
enter relational eqn
x<=y
100 if x<=y goto 103
101 t=0
102 goto 104
103 t=1
1 : assignment 2: arithmatic 3: relational 4: exit
```

```
1 : assignment 2: arithmatic 3: relational 4: exit
3
enter relational eqn
x<=y
100 if x<=y goto 103
101 t=0
102 goto 104
103 t=1
1 : assignment 2: arithmatic 3: relational 4: exit
3
enter relational eqn
x>y
100 if x>y goto 103
101 t=0
102 goto 104
103 t=1
1 : assignment 2: arithmatic 3: relational 4: exit
3
enter relational eqn
x<y
100 if x<y goto 103
101 t=0
102 goto 104
103 t=1
1 : assignment 2: arithmatic 3: relational 4: exit
```

POSTLAB:

Q1 sol: id₁ or—op   id₂ and-op   not-op id₃

$id_1 \mid id_2 \& \sim id_3$

Intermediate code generation:

temp 1 = $id_1 \mid id_2$

temp 2 = $\sim id_3$

temp 3 = temp 1 & temp 2

x = temp 3

Q2.   ~~for if c<d then x=y+z~~

if c<d then x = y+z

if (c<d) goto 102

exit (0)

temp = y + z

100
101
102
103