**ASSIGNMENT 3**

**SYSTEM PROGRAMMING LAB**

**202100102**

**MERWIN PINTO**

**ROLL NO 1**

**DIV E**

**INTERMEDIATE: CODE**

**AD 6 C 400**

**IS 14 S1**

**DL 8 C 5**

**IS 1 R1 S1**

**IS 2 R1 L1**

**DL 7 C 4**

**IS 14 S2**

**IS 3 R2 L2**

**AD 5**

**IS 10 R1 R2**

**AD 13 S3+4**

**AD 11 S1**

**IS 3 R1 L3**

**IS 2 R1 R2**

**IS 1 S2 R1**

**AD 5**

**AD 13 S4+10**

**IS 1 R3 L4**

**IS 2 R3 L5**

**IS 1 S6 R3**

**AD 5**

**IS 2 R3 L6**

**IS 3 R1 R3**

**IS 10 R1 L3**

**IS 1 R1 S6**

**DL 8 C 5**

**AD 11 S5**

**AD 13 S6+6**

**AD 12**

**AD 9**

**CODE:**

**lines\_list=[]**

**with open('IntermediateCode.txt','r')as file:**

**for line in file:**

**words = line.strip().split()**

**lines\_list.append(words)**

**for line in lines\_list:**

**print(line)**

**print()**

**symbolTable=[]**

**with open('SymbolTable.txt','r')as file:**

**for line in file:**

**words = line.strip().split()**

**symbolTable.append(words)**

**for line in symbolTable:**

**print(line)**

**print()**

**litTable=[]**

**with open('LiteralTable.txt','r') as file:**

**for line in file:**

**literal=line.strip().split()**

**litTable.append(literal)**

**for literal in litTable:**

**print(literal)**

**with open('MachineCode.txt','w') as myfile:**

**for line in lines\_list:**

**if line[0]=='AD':**

**print()**

**myfile.write('\n')**

**elif line[0]=='DL':**

**print(line[1]+'\t0\t'+line[3])**

**myfile.write(line[1]+'\t0\t'+line[3]+'\n')**

**elif line[0]=='IS':**

**if len(line)==3:**

**index=int(line[2][1:])**

**print(line[1]+'\t0\t'+symbolTable[index-1][1])**

**myfile.write(line[1]+'\t0\t'+symbolTable[index-1][1]+'\n')**

**else:**

**if line[2].startswith('R') and line[3].startswith('R'):**

**print(line[1]+'\t'+line[2][1:]+line[3][1:])**

**myfile.write(line[1]+'\t'+line[2][1:]+'\t'+line[3][1:]+'\n')**

**elif line[2].startswith('R') and line[3].startswith('S'):**

**index=int(line[3][1:])**

**print(line[1]+'\t'+line[2][1:]+'\t'+symbolTable[index-1][1])**

**myfile.write(line[1]+'\t'+line[2][1:]+'\t'+symbolTable[index-1][1]+'\n')**

**elif line[2].startswith('R') and line[3].startswith('L'):**

**index=int(line[3][1:])**

**print(line[1]+'\t'+line[2][1:]+'\t'+litTable[index-1][1])**

**myfile.write(line[1]+'\t'+line[2][1:]+'\t'+litTable[index-1][1]+'\n')**

**elif line[2].startswith('S') and line[3].startswith('R'):**

**index=int(line[2][1:])**

**print(line[1]+'\t'+symbolTable[index-1][1]+'\t'+line[3][1:])**

**myfile.write(line[1]+'\t'+symbolTable[index-1][1]+'\t'+line[3][1:]+'\n')**

**OUTPUT:**

**14 0 402**

**8 0 5**

**1 1 402**

**2 1 416**

**7 0 4**

**14 0 411**

**3 2 417**

**10 1 2**

**3 1 430**

**2 1 2**

**1 411 1**

**1 3 444**

**2 3 445**

**1 454 3**

**2 3 460**

**3 1 3**

**10 1 430**

**1 1 454**

**8 0 5**

**LITERAL TABLE**

**5 416**

**4 417**

**2 430**

**25 444**

**12 445**

**1 460**

**2 461**

**SyM TABLE**

**A 402**

**B 411**

**NEXT 418**

**S1 428**

**S3 442**

**C 454**