

# UM2-L2 EEA : HLEE407 – Programmation des microcontrôleurs

## 2 TD – Correction d'analyse de programmes

### Exercice -1-      **addition**

```
A = Val1
A = A Add Val2
Résultat = A
Fin
```

```
char Add( char Val1, char Val2)
{ char Resultat ;
  Resultat = Val1 + Val2 ;
  return Resultat ;
}
```

### Exercice -2-      **multiplication**

```
A = Val1
B = Val2
Resultat = 0
Boucle Si B = 0      Fin
  Resultat = A Add Resultat
  B = B Sub 1
Boucle
Fin
```

```
short Mul (char Val1, char Val2)
{ short Resultat = 0 ;
  while (Val2)
  {   Resultat = (short)Aval1+ Resultat ;
      Val2 = Val2 -1 ;
      return Resultat ;
  }
}
```

### Exercice -3-      **checksum**

```
Idx = Debut
A = 0
B = Long
Boucle A = A Add *Idx
  Idx = Idx Add 1
  B = B Sub 1
  Si (B <> 0) Boucle
  Resultat = A
Fin
```

```
short Cksm(char Debut[], char Long)
{ short Resultat = 0 ;
  short Idx ;
  for (Idx = 0 ; Idx < Long ; Idx++)
  { Resultat = Resultat + (short)Debut[Idx] ;
  }
}
```

### Exercice -4-      **division par 16**

```
ResDiv = Mem1 >> 4
Fin
```

```
short Div16(short Data)
{   return Data >> 4 ;
}
```

### Exercice -5-      **teste le bit 3**

```
(A Et 0b0000 1000)
Fin
```

```
bool Test (char Data)
{ bool Res ;
  Res = (bool)(Data & 0x04) ;
  Return Res ;
}
```

### Exercice -6-      **bit-2 = 1    bit-4 = 0**

```
A = A Ou 0b0000 0100
A = A Et 0b1110 1111
Fin
```

```
char Force (char Data)
{   char Resultat ;
    Resultat = Data | 4 ;
    Resultat = Resultat & 0xEF ;
}
```

### Exercice -7-      **Active sortie 2 si bit 7 actif**

```
A = Port
Si (A Et 0b1000 0000) <> 0
  A = A Ou 0b0000 0100
Port = A
Fin
```

```
void Activation (char *Port)
{   if (*Port & 0x80)
    { Port = Port | 4 ; }
}
```