

Week 6

% EXAMINATION 8: “finding out letter grades from entering

grades’

grade=input('enter grade between 1 and 100= ');

if grade<=0

disp('please enter grade in between 1 and 100')

grade=input('enter grade between 1 and 100= ');

else

if grade>=81

lettergrade='AA'

elseif (grade>=76 & grade<=80)

lettergrade ='BA'

elseif (grade>=70 & grade<=75)

lettergrade ='BB')

elseif (grade>=60 & grade<=69)

lettergrade ='CB';

elseif (grade>=50 & grade<=59)

lettergrade ='CC';

elseif (grade>=45 & grade<=49)

lettergrade ='DC'

elseif (grade>=40 & grade<=44)

lettergrade ='DD'

elseif (grade>=30 & grade<=39)

lettergrade ='FD'

elseif (grade>=1& grade<=29)

lettergrade ='FF'

end

end

if ...

....

else

if ...

...

elseif...

...

elseif...

...

end

end

EXAMPLE 3: For example to check to see if a is less than b and at the same time b is greater than or equal to c you would use the following commands:

```
if (a < b) && (b >= c)
    Matlab commands
end
```

Switch – Case Construct

- Syntax :

```
SWITCH switch_expr
  CASE case_expr,
    statement, ..., statement
  CASE {case_expr1, case_expr2, case_expr3,...}
    statement, ..., statement
  ...
  OTHERWISE,
    statement, ..., statement
END
```

Usage

- When there is one variable to execute one **and only one** of many options to be considered.

Eg : Say grading into A+,A,B+,B,...,Fail

The advantage of switch is that the above problem would take a complicated nested if structure but only one level switch-case structure.

```
disp('1. Add the numbers');  
disp('2. Find difference');  
disp('3. Multiply');  
disp('4. Find Maximum');  
disp('5. Find Minimum');  
disp(' ');  
ch=input('Enter Your Choice : ');
```

```
x=input('Enter the first of the 2 numbers');  
y=input('Enter the second of the 2 numbers');  
switch (ch)  
case 1 ,  
    value=x+y  
case 2 ,  
    value=x-y  
case 3 ,  
    value=x*y  
case 4,:  
    value=max(x,y)  
case 5,:  
    value=min(x,y)  
end
```

% EXAMINATION 16:

```
a=10;b=2;x=1;y=4;  
c(1)=(a+b)*a/(x+y);  
c(2)=2*a*x^2+x^2*y^2;  
c(3)=sqrt(a^2-4*x*y)/(2*a);  
c(4)=a/(a+b)^3+(b*x^2)/y;  
c(5)=1/3*x+2/7*y+16*a^2*b;  
c(6)=(3*x^2*y+sqrt(a+b))^(1/3)  
    ;  
c(7)=x/(a+b/sqrt(y));  
c(8)=1+1/(1+1/(1+1/(1+1/x)));  
d=c';
```

% EXAMINATION 16:

```
a=input('enter a')  
b= input('enter b');  
x=input('enter x')  
y= input('enter y');  
c(1)=(a+b)*a/(x+y);  
c(2)=2*a*x^2+x^2*y^2;  
c(3)=sqrt(a^2-4*x*y)/(2*a);  
c(4)=a/(a+b)^3+(b*x^2)/y;  
c(5)=1/3*x+2/7*y+16*a^2*b;  
c(6)=(3*x^2*y+sqrt(a+b))^(1/3)  
    ;  
c(7)=x/(a+b/sqrt(y));  
c(8)=1+1/(1+1/(1+1/(1+1/x)));  
d=c';
```

```
A=input('Enter a square matrix A');  
  
d= det(A);  
  
switch (sign(d))  
case 1 , disp(['det. A is positive and is equal to ' num2str(d) ]);  
    B=inv(A);  
    0.5*B  
case -1 , disp(['det. A is positive and is equal to ' num2str(d) ]);  
    B=inv(A);  
    2*B  
case 0, disp(['det. A is zero']);  
    A+A'  
end
```

break command –exits for loop ; used in case of error.