Enums

- A data type that allows a programmer to define a variable and specify the valid values that could be stored in that variable.
    - ➔ Can create a variable named “myColor” and it can only contain one of the primary colors , red, yellow , or blue and no other values.
- You first have to define the enum type and give it a name
    - ➔ Initiated by the keyword enum.
    - ➔ Then the name of the enumerated data type.
    - ➔ The list of identifiers (enclosed in a set of curly braces) that define the permissible values that can be assigned to the type :

```
enum primaryColor {red, yellow, blue};
```

- Variables declared to be of this data type can be assigned the values red, yellow, and blue inside the program, and no other values.
- To declare a variable to be of type enum primaryColor.
    - ➔ Use the keyword enum
    - ➔ Followed by the enumerated type name
    - ➔ Followed by the variable list. So the statement.

```
enum primaryColor , myColor, gregsColor;
```

- Defines the two variable myColor and gregsColor to be of type primaryColor
    - ➔ The only permissible values that can be assigned to these variables are the names red, yellow and blue.
    - ➔ myColor = red;
- Another example

```
enum month {January, February, March, April, May, June, July, August,
September, October, November, December};
```

- The compiler actually enumeration identifiers as integer constants
    - ➔ First name in list in 0

```
enum month thisMonth;
```

…

thisMonth = February;

- The Value 1 is assigned to thisMonth (and not the name February) because it is the second identifier listed inside the enumeration list.
- If you want to have a specific integer value associated with an enumeration identifier, the integer can be assigned to the identifier when the data type is defined.

```
enum direction{up, down, left =10, right};
```

- An enumerated data type direction is defined with the values up, down, left, and right.
- up= 0, because it appear first in the list
- 1 to down because it appears next
- 10 to left because it is explicitly assigned the value .
- 11 to right because it appears immediately after left in the list.