PG – DESD

Module – Embedded C Programming

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Control Statements

- Decision or Selection
  - if-else
  - switch-case
- Iteration (loop)
  - for
  - while
  - do-while
- Jump
  - break
  - continue
  - goto
  - return

if-else statement

```
if (condition) {
        statement 1;
        statement 2;
}

if (condition) {
        statement 1;
        statement 2;
}
else {
        statement 3;
        statement 4;
}
```

```
if (condition)
        statement 1;

if (condition)
        statement 1;
else
        statement 2;
```

- Condition is any expression – using relational, logical or other operators.
  - 0 – false condition
  - 1 – true condition

Ternary/conditional operator

```
if (condition) {
        // execute if condition is true
}
else {
        // execute if condition is false
}
```

- if-else can be nested within each other.

```
condition ? expression1 : expression2
```

- If condition is true, expression1 is executed; otherwise expression2 is executed.
- Ternary operators can also be nested.
- expression1 & expression2 must be expressions (not statement).
  - expression – evaluate to some value.
  - statement – C statement ends with ;

switch-case

```
switch (expression) {
    case const-expr1:
        statement(s);
        break;
    case const-expr2:
        statement(s);
        break;
    …
    default:
        statement(s);
        break;
}
```

- Switch-case is used to select one of the several paths to execute depending on value of int expression.
- case constants cannot be duplicated.
- break statement skips remaining statements and continues execution at the end of switch closing brace.
- If break is missing, statements under sub-sequent case continue to execute.
- default case is optional and it is executed only if an expression is not matching with any of the case constant.
- Sequence of cases and default case doesn't matter.

Loops

- Control statements used for repeating a set of instructions number of times is called as “LOOP”.
- Every loop has
  - Initialization statement
  - Terminating condition
  - Modification statement(Increment/Decrement)
  - Body of loop
- The variable that is used for terminating condition is referred as ‘loop variable’.

while loop

- Used to repeat a statement (or block) while an expression is true (not zero).

- Syntax:

```
initialization;
while(condition) {
        statement1;
        statement2;
        modification;
}
```

for loop

- Used to repeat a statement (or block) while an expression is true (not zero).
- Syntax:

```
for(initialization; condition; modification) {
        statement1;
        statement2;
}
```

Thank you!

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