Scalar Data Types

Characters:

Specification:-

A character data type provides data objects that have a single character as their value.

Set of values in character data type depends upon hardware and operating system.

Like ASCII character set, and ordering of the characters in this character set is called Collating Sequence, and ordering given by the relational operations.

Character set includes:

- Spaces
- Digits
- Special character $, @, _ etc.

Operations on character data includes only:

- Relational operations
- Assignment and

To test character for:

- Letter
- Digit
- Special character.

Implementation:-

Character data values are almost directly supported by the underlying hardware and operating system because.
In C, character is declared

`char a;`  \(\Rightarrow\) one byte of storage
\(\Rightarrow\) in memory.

Character          Character
Datatype  dataobject

ASCII value of characters data-type in C are

<table>
<thead>
<tr>
<th>ASCII Value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>48 to 57</td>
<td>0 to 9</td>
</tr>
<tr>
<td>65 to 90</td>
<td>A to Z</td>
</tr>
<tr>
<td>97 to 122</td>
<td>a to z</td>
</tr>
</tbody>
</table>

And all remaining for special characters.

```
char a;  // declaration

a = 'A';  // initializing character data object with A

where = A = 65 = 1000001
```

\[
\begin{array}{cccccccc}
0 & 1 & 0 & 0 & 0 & 0 & 0 & 1 \\
\end{array}
\]

\(\Rightarrow\) 65 = A

\(\Rightarrow\) ASCII

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