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ERP Application Programming (Summer Semester 2025)

Assignment No. 1

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1. SAP ABAP Dictionary

1.1. Domains

To begin the development process in ABAP, the first step is to create a **Domain** using transaction code **SE11** in the ABAP Data Dictionary. A domain defines the technical properties of a field, such as its data type, length, and possible value range. It serves as the foundation for creating data elements and ensures consistency in data definitions across the system. Once the domain is defined, it can be reused in multiple data elements and table fields.

Dictionary Object Edit Goto Utilities Environment System Help

ABAP Dictionary: Initial Screen

☐ Database table
☐ View
☐ Data type
☐ Type Group
☒ Domain
☐ Search help
☐ Lock object

Z_018_BICYCLE_ID

Display Change Create

The list of Domains those have been created are listed below,

Domain Name	Short Description	Data Type
Z_018_BICYCLE_ID	Domain for Bicycle ID length 5	NUMC
Z_018_BICYCLE_NAME	Domain for Bicycle Name Length 40	CHAR
Z_018_FRAME_SIZE	Domain for Bicycle Frame Size Length 5	NUMC
Z018_GEAR_TYPE	Domain for Bicycle Gear Type Length 20	CHAR
Z_018_CUST_ID	Domain for Customer ID Length 10	CHAR
Z_018_CUST_NAME	Domain for Customer Name Length 40	CHAR
Z_018_BIRTHDAY	Domain for Customer Birthday Length 8	DATS
Z_018_CHAR_10	Domain for Character with Length 10	CHAR
Z_018_QUANTITY	Domain for Quantity Length 10	NUMC

1.2. DATA ELEMENTS

Next, **Data Elements** are created in SE11 and assign it to the previously created **Domain** to define the semantic meaning of a field. The data element adds descriptive labels and documentation while inheriting the domain's technical properties.

Data Element Name	Short Description	Data Type
Z_018_EN_BICYCLE_ID	Data element for Z_018_BICYCLE_ID	NUMC
Z_018_EN_BICYCLE_NAME	Data element for Domain Z 018 BICYCLE NAME	CHAR
Z_018_FRAME_SIZE	Data Element for Z_018_FRAME_SIZE	NUMC
Z_018_EN_GEAR_TYPE	Data element forZ_018_GEAR_TYPE	CHAR
Z_018_EN_CUST_ID	Data element for Domain Z_018_CUST_ID	CHAR
Z_018_EN_CUST_NAME	Data Element for Z_018_CUST_NAME	CHAR
Z_018_EN_BIRTHDAY	Domain for Customer Birth Date	DATS
Z_018_EN_CHAR_10	Data Element for Domain Z_018_CHAR_10	CHAR
Z_018_EN_QUANTITY	Data Element for Z_018_QUANTITY	NUMC

Data elements those are created and used are showed below in the tables Z018_CUSTOMERS and Z018_PRODUCT. Pre-built data elements **NETWR_AP** for price and **WAERK** for currency are used. Some data elements are used repeatedly.

Field	Key	Initi_	Data element	Data Type	Length	Decim_	Coordinate	Short Description
MANDT	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	MANDT	CLNT	3	0	0 Client	
BICYCLE_ID	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Z_018_EN_BICYCL_ NUMC	NUMC	10	0	0 Data element for Z_018_BICYCLE_ID	
BICYCLE_NAME	<input type="checkbox"/>	<input type="checkbox"/>	Z_018_EN_BICYCL_ CHAR	CHAR	40	0	0 Data element for Doamin Z_018_BICYCLE_NAME	
FRAME_SIZE_CM	<input type="checkbox"/>	<input type="checkbox"/>	Z_018_FRAME_SIZE NUMC	NUMC	5	0	0 Data Element for Z_018_FRAME_SIZE	
GEAR_TYPE	<input type="checkbox"/>	<input type="checkbox"/>	Z_018_EN_GEAR_T_ CHAR	CHAR	20	0	0 Data element forZ_018_GEAR_TYPE	
PRICE	<input type="checkbox"/>	<input type="checkbox"/>	NETWR_AP	CURR	15	2	0 Net Value of the Order Item in Document Currency	
CURRENCY	<input type="checkbox"/>	<input type="checkbox"/>	WAERK	CUKY	5	0	0 SD document currency	

SAP Dictionary: Display Table

← → ↺ ↻ ↶ ↷ ↸ ↹ ↺ ↻ ↶ ↷ ↸ ↹ Technical Settings Append Structure...

Transparent Table **Z018_CUSTOMERS** Active

Short Description Table for customer information

Attributes Delivery and Maintenance **Fields** Input Help/Check Currency/Quantity Fields Indexes

1 / 10

Field	Key	Initi.	Data element	Data Type	Length	Decim.	Coordinate	Short Description
MANDT	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	MANDT	CLNT	3	0		0 Client
CUSTOMER_ID	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Z_018_EN_CUST_ID	CHAR	10	0		0 Data element for Domain Z_018_CUST_ID
CUSTOMER_NAME	<input type="checkbox"/>	<input type="checkbox"/>	Z_018_EN_CUST_N.	CHAR	40	0		0 Data Element for Z_018_CUST_NAME
BIRTHDAY	<input type="checkbox"/>	<input type="checkbox"/>	Z_018_EN_BIRTHD.	DATS	8	0		0 Domain for Customer Birth Date
CITY	<input type="checkbox"/>	<input type="checkbox"/>	Z_018_EN_CHAR30	CHAR	30	0		0 Data element for domain Z_018_CHAR30
POSTAL_CODE	<input type="checkbox"/>	<input type="checkbox"/>	Z_018_EN_CHAR_10	CHAR	10	0		0 Data Element for Domain Z_018_CHAR_10
BICYCLE_ID	<input type="checkbox"/>	<input type="checkbox"/>	Z_018_EN_BICYCL.	NUMC	10	0		0 Data element for Z_018_BICYCLE_ID
QUANTITY	<input type="checkbox"/>	<input type="checkbox"/>	Z_018_EN_QUANTI.	NUMC	7	0		0 Data Element for Z_018_QUANTITY
AMOUNT	<input type="checkbox"/>	<input type="checkbox"/>	NETWR_AP	CURR	15	2		0 Net Value of the Order Item in Document Currency
CURRENCY	<input type="checkbox"/>	<input type="checkbox"/>	WAERK	CUKY	5	0		0 SD document currency

2. Database Table

2.1. Z018_PRODUCT

Creating a new database table called Z018_PRODUCT to handle the offered goods which contains all the relevant data. Maintain the short text and then choose 'A' Application table (master and transaction data) as the Delivery Class and Display/Maintenance Allowed as the value for Data Browser/Table View Editing.

The screenshot shows the SAP ABAP Dictionary: Initial Screen. The 'Database table' radio button is selected, and the text 'Z018_PRODUCT' is entered in the adjacent field. Below this, there are several other radio buttons: 'View', 'Data type', 'Type Group', 'Domain', 'Search help', and 'Lock object', each followed by an empty text input field. At the bottom of the screen, there are three buttons: 'Display', 'Change', and 'Create'.

The table fields were maintained accordingly. The field **MANDT** was defined first using the data element **MANDT**, with the **Key** and **Initial Value** options selected, as required for client-dependent tables. Subsequently, the field **BICYCLE_ID** was created and marked as a primary key field by enabling both the **Key** and **Initial Value** checkboxes. The data element **Z_018_EN_BICYCLE_ID** was assigned to this field, based on the data type **NUMC** with a length of **10**. The following fields were included in the table structure:

- **MANDT** – Client (necessary for client-dependent tables)
- **BICYCLE_ID** – Number identifying the bicycle
- **BICYCLE_NAME** – Name of the bicycle
- **FRAME_SIZE_CM** – Frame size in centimeters
- **GEAR_TYPE** – Gear type(Manual or Auto)
- **PRICE** – Price of the bicycle
- **CURRENCY** – Currency used

By switching to the 'Fields' tab the fields of the table are entered, below the fields are from SAP are added. For the product table.

The screenshot shows the 'Fields' tab of the SAP Dictionary for table Z018_PRODUCT. The table is a transparent table for products. The fields tab displays a list of fields with their keys, data elements, data types, lengths, decimal places, and coordinates. The fields are:

Field	Key	Initi.	Data element	Data Type	Length	Decim.	Coordinate	Short Description
MANDT	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	MANDT	CLNT	3	0	0 Client	
BICYCLE_ID	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Z_018_EN_BICYCL_NUMC		10	0	0 Data element for Z_018_BICYCLE_ID	
BICYCLE_NAME	<input type="checkbox"/>	<input type="checkbox"/>	Z_018_EN_BICYCL_CHAR		40	0	0 Data element for Doamin Z_018_BICYCLE_NAME	
FRAME_SIZE_CM	<input type="checkbox"/>	<input type="checkbox"/>	Z_018_FRAME_SIZE_NUMC		5	0	0 Data Element for Z_018_FRAME_SIZE	
GEAR_TYPE	<input type="checkbox"/>	<input type="checkbox"/>	Z_018_EN_GEAR_T_CHAR		20	0	0 Data element for Z_018_GEAR_TYPE	
PRICE	<input type="checkbox"/>	<input type="checkbox"/>	NETWR_AP	CURR	15	2	0 Net Value of the Order Item in Document Currency	
CURRENCY	<input type="checkbox"/>	<input type="checkbox"/>	WAERK	CUKY	5	0	0 SD document currency	

In this context, it is mandatory to maintain the data class. Therefore, the data type **APPL0** has been selected to ensure appropriate application-specific data handling. Additionally, the size category has been set to **0**, which specifies the allocated size for the table storage.

The screenshot shows the 'Technical Settings' tab of the SAP Dictionary for table Z018_PRODUCT. The settings are as follows:

Name: Z018_PRODUCT (Transparent Table)

Short Descript.: Table for products

Last Changed: DEV-018 05.06.2025

Status: Actv. saved

General Properties

Logical Memory Parameters

Data Class: APPL0 Master Data, Transparent Tables

Size Category: 0 Expected Data Records 0 to 3.500

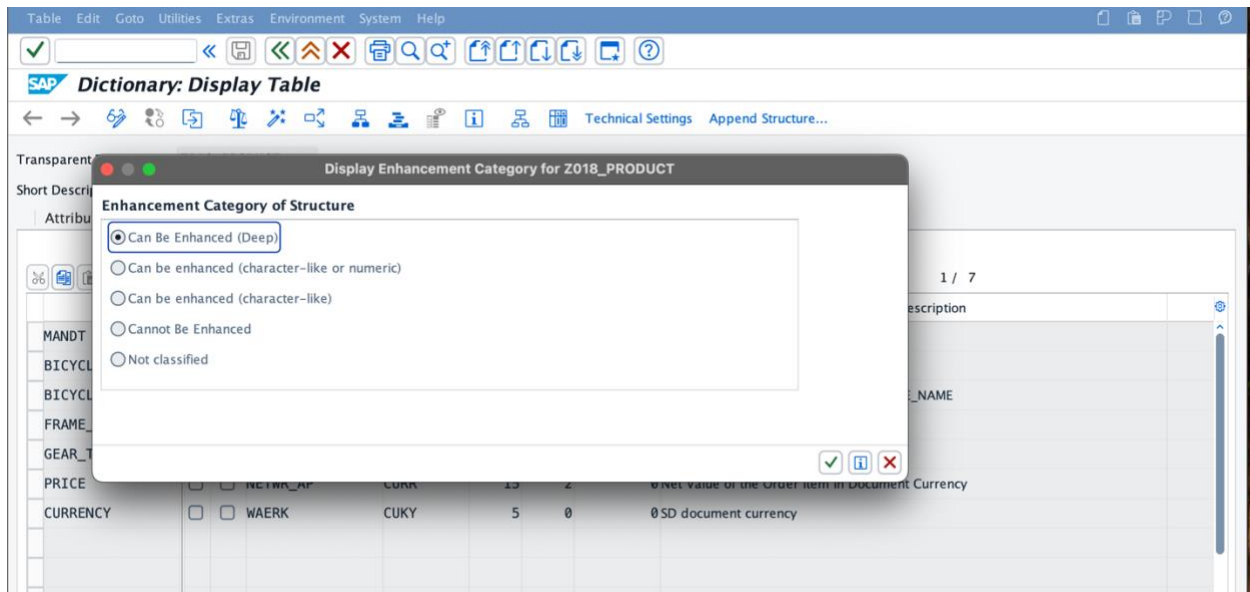
Table Sharing

Sharing Type: Not classified

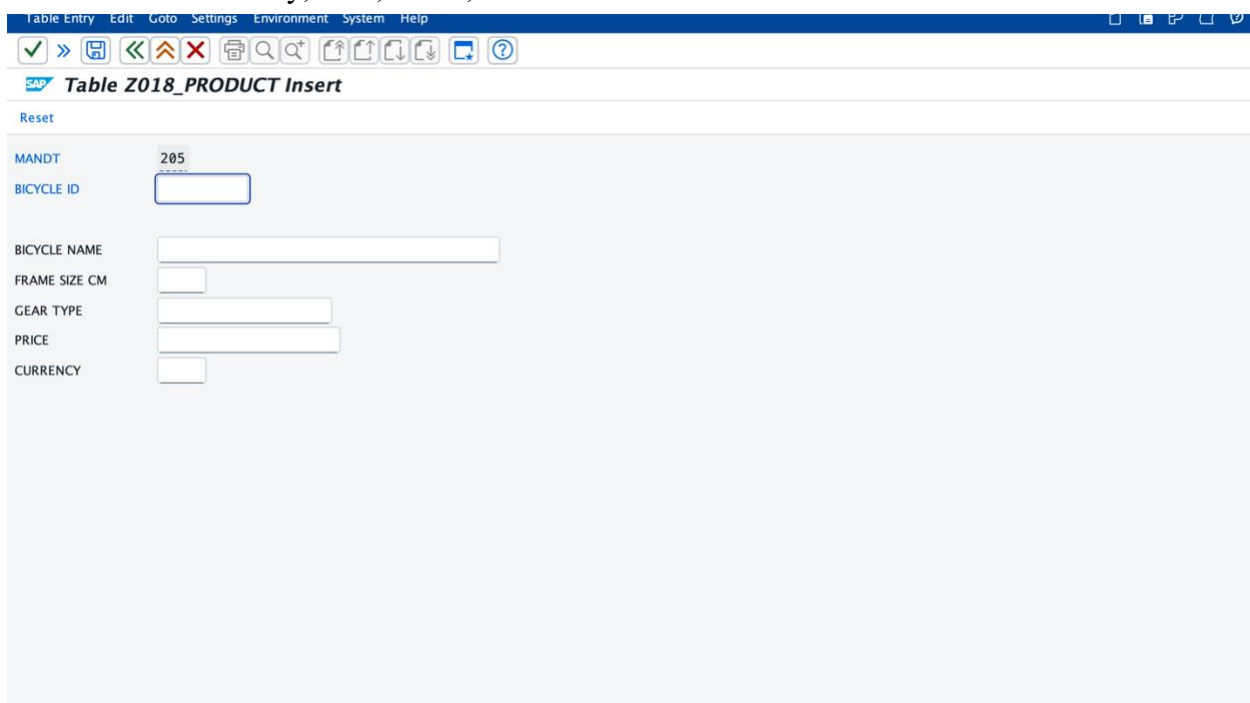
Buffering

Buffering Not Allowed

After that, define an enhancement category as Can be Enhanced (Deep). The enhancement category can be defined using following menu path: (Menu •) Extras • Enhancement Category.



In the next step, some data records are entered into the table. This can be done easily using the data browser, which can be accessed via the menu path: Menu => Utilities => Table Contents => Create Entries. Finally, save, check, and activate the table.



The entries have been entered for ten products are added below. Menu path: ((Menu •) Utilities • Table Contents • Display)

Table Entry Edit Goto Settings Utilities Environment System Help

SAP Data Browser: Table Z018_PRODUCT Select Entries 10

Table: Z018_PRODUCT
Displayed Fields: 7 of 7 Fixed Columns: 2 List Width 0250

MANDT	BICYCLE_ID	BICYCLE_NAME	FRAME_SIZE_CM	GEAR_TYPE	PRICE	CURRENCY
<input type="checkbox"/> 205	0000000001	ROAD RUNNER	00054	MANUAL	670,00	USD
<input type="checkbox"/> 205	0000000002	MOUNTAIN KING	00058	AUTO	780,00	USD
<input type="checkbox"/> 205	0000000003	ECO RIDE	00050	MANUAL	800,00	USD
<input type="checkbox"/> 205	0000000004	CITY SWIFT	00056	MANUAL	850,00	USD
<input type="checkbox"/> 205	0000000005	TURBO JET	00052	AUTO	759,00	USD
<input type="checkbox"/> 205	0000000006	CUBE AIM RACE	00045	MANUAL	800,00	USD
<input type="checkbox"/> 205	0000000007	POLYGON CASCADE 4	00051	AUTO	710,00	USD
<input type="checkbox"/> 205	0000000008	SCOTT ASPECT 950	00052	MANUAL	620,00	USD
<input type="checkbox"/> 205	0000000009	SPECIALIZED ROCKHOPPER	00056	AUTO	829,00	USD
<input type="checkbox"/> 205	0000000010	NORCO STORM 5	00049	MANUAL	749,00	USD

2.2. Z018_CUSTOMERS

Creating another database table called Z18_CUSTOMERS to store the customers which contains all the relevant data. Maintain the short text and then choose 'A' Application table (master and transaction data) as the Delivery Class and Display/Maintenance Allowed as the value for Data Browser/Table View Editing.

ABAP Dictionary: Initial Screen

Database table: Z018_CUSTOMERS

View:

Data type:

Type Group:

Domain:

Search help:

Lock object:

Display Change Create

The fields of the table are maintained by first defining the field **MANDT** with the data element **MANDT**. The checkboxes for **Key** and **Initial Value** are selected for this field, as it is required for client-dependent tables.

Next, the field **Customer_ID** is defined and designated as a primary key. The checkboxes for **Key** and **Initial Value** are also selected, and the corresponding data element is assigned to this field.

The following fields are included in the customer database table:

- **MANDT** (Client)
- **Customer_ID** (Customer Number)
- **Customer_Name** (Name of the Customer)
- **Birthday** (Date of Birth)
- **City** (City of Residence)
- **Postal_Code** (Postal Code)
- **Bicycle_ID** (Bicycle Identifier)
- **Quantity** (Quantity Purchased)
- **Amount** (Purchase Amount)
- **Currency** (Currency Type)

Switching to the 'Fields' tab we enter the fields of our table, below the fields are from SAP are added for the customer table.

SAP Dictionary: Display Table

Transparent Table **Z018_CUSTOMERS** Active

Short Description: Table for customer information

Attributes | Delivery and Maintenance | **Fields** | Input Help/Check | Currency/Quantity Fields | Indexes

Field	Key	Initi.	Data element	Data Type	Length	Decim.	Coordinate	Short Description
MANDT	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	MANDT	CLNT	3	0		0 Client
CUSTOMER_ID	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Z_018_EN_CUST_ID	CHAR	10	0		0 Data element for Domain Z_018_CUST_ID
CUSTOMER_NAME	<input type="checkbox"/>	<input type="checkbox"/>	Z_018_EN_CUST_N_	CHAR	40	0		0 Data Element for Z_018_CUST_NAME
BIRTHDAY	<input type="checkbox"/>	<input type="checkbox"/>	Z_018_EN_BIRTHD_	DATS	8	0		0 Domain for Customer Birth Date
CITY	<input type="checkbox"/>	<input type="checkbox"/>	Z_018_EN_CHAR30	CHAR	30	0		0 Data element for domain Z_018_CHAR30
POSTAL_CODE	<input type="checkbox"/>	<input type="checkbox"/>	Z_018_EN_CHAR_10	CHAR	10	0		0 Data Element for Domain Z_018_CHAR_10
BICYCLE_ID	<input type="checkbox"/>	<input type="checkbox"/>	Z_018_EN_BICYCL_	NUMC	10	0		0 Data element for Z_018_BICYCLE_ID
QUANTITY	<input type="checkbox"/>	<input type="checkbox"/>	Z_018_EN_QUANTI_	NUMC	7	0		0 Data Element for Z_018_QUANTITY
AMOUNT	<input type="checkbox"/>	<input type="checkbox"/>	NETWR_AP	CURR	15	2		0 Net Value of the Order Item in Document Currency
CURRENCY	<input type="checkbox"/>	<input type="checkbox"/>	WAERK	CUKY	5	0		0 SD document currency

Furthermore, in the ABAP Dictionary, it is necessary to assign a currency or a quantity field if the table contains a currency or quantity value. Here, in the currency field the reference table and reference field Z018_Customers and Currency field is set. It is necessary to choose reference currency from a customizing table.

Transparent Table: **Z018_CUSTOMERS** Active
Short Description: Table for customer information

Attributes | Delivery and Maintenance | Fields | Input Help/Check | **Currency/Quantity Fields** | Indexes

Field	Data element	Data Ty.	Reference table	Ref. field	Short Description
MANDT	MANDT	CLNT			Client
CUSTOMER_ID	Z_018_EN_CUST_ID	CHAR			Data element for Domain Z_018_CUST_ID
CUSTOMER_NAME	Z_018_EN_CUST_NAME	CHAR			Data Element for Z_018_CUST_NAME
BIRTHDAY	Z_018_EN_BIRTHDAY	DATS			Domain for Customer Birth Date
CITY	Z_018_EN_CHAR30	CHAR			Data element for domain Z_018_CHAR30
POSTAL_CODE	Z_018_EN_CHAR_10	CHAR			Data Element for Domain Z_018_CHAR_10
BICYCLE_ID	Z_018_EN_BICYCLE_NUMC	NUMC			Data element for Z_018_BICYCLE_ID
QUANTITY	Z_018_EN_QUANTITY	NUMC			Data Element for Z_018_QUANTITY
AMOUNT	NETWR_AP	CURR	Z018_CUSTOMERS	CURRENCY	Net Value of the Order Item in Document Currency
CURRENCY	WAERK	CUKY			SD document currency

The foreign key relationship between the two tables is required to be established immediately. The **Bicycle_ID** field in the **Z018_CUSTOMERS** table is linked to the **Z018_PRODUCT** table. To do this, the **Bicycle_ID** field is selected, and the **Foreign Key** button in the toolbar is pressed. A pop-up window is displayed, requesting the check table. The product table **Z018_PRODUCT** is then selected, and the Enter key is pressed to confirm.

The repository information is automatically read by the system, and a foreign key definition is proposed based on the matching field names in both tables. Furthermore, the same data element must be used in the fields to define the foreign key successfully. In this case, the data element **Z_018_EN_Bicycle_ID** is assigned to the **Bicycle_ID** field in both tables to ensure this consistency.

Table: **Z018_CUSTOMERS** Active
Short Description: Table for customer information

Attributes | Delivery and Maintenance | Fields | **Input Help/Check** | Currency/Quantity Fields | Indexes

Field	Data element	Data Ty.	Foreign K.	Check table	Origin of Input Help	Srch Help	Fix.	Domain
MANDT	MANDT	CLNT	<input type="checkbox"/>				<input type="checkbox"/>	MANDT
CUSTOMER_ID	Z_018_EN_CUST_ID	CHAR	<input type="checkbox"/>				<input type="checkbox"/>	Z_018_CUST_ID
CUSTOMER_NAME	Z_018_EN_CUST_NAME	CHAR	<input type="checkbox"/>				<input type="checkbox"/>	Z_018_CUST_NAME
BIRTHDAY	Z_018_EN_BIRTHDAY	DATS	<input type="checkbox"/>		Input help based on data type		<input type="checkbox"/>	Z_018_BIRTHDAY
CITY	Z_018_EN_CHAR30	CHAR	<input type="checkbox"/>				<input type="checkbox"/>	Z_018_CHAR30
POSTAL_CODE	Z_018_EN_CHAR_10	CHAR	<input type="checkbox"/>				<input type="checkbox"/>	Z_018_CHAR_10
BICYCLE_ID	Z_018_EN_BICYCLE_NUMC	NUMC	<input checked="" type="checkbox"/>	Z018_PRODUCT	Input help implemented with c...		<input type="checkbox"/>	Z_018_BICYCLE_ID
QUANTITY	Z_018_EN_QUANTITY	NUMC	<input type="checkbox"/>				<input type="checkbox"/>	Z_018_QUANTITY
AMOUNT	NETWR_AP	CURR	<input type="checkbox"/>				<input type="checkbox"/>	WERTV8
CURRENCY	WAERK	CUKY	<input type="checkbox"/>				<input type="checkbox"/>	WAERS

In the technical settings the I have set data class and size category. APPL0 as a data type and 0 as the size category has been chosen. After that, enhancement category has been defined as Can be Enhanced (Deep).

The screenshot shows the SAP Dictionary: Display Technical Settings window for table Z018_CUSTOMERS. The window has a menu bar (Settings, Edit, Goto, System, Help) and a toolbar. The main area displays the table's properties:

- Name:** Z018_CUSTOMERS (Transparent Table)
- Short Descript.:** Table for customer information
- Last Changed:** DEV-018, 13.06.2025
- Status:** Actv., saved

Below the properties, there are two tabs: General Properties and DB-Specific Properties. The General Properties tab is active, showing the following settings:

- Logical Memory Parameters:**
 - Data Class:** APPL0 (Master Data, Transparent Tables)
 - Size Category:** 0 (Expected Data Records 0 to 2.400)
- Table Sharing:**
 - Sharing Type:** Not classified
 - Display:** (button)
- Buffering:**
 - Buffering Not Allowed:** (selected)
 - Buffering allowed but switched off:** (radio button)
 - Buffering Activated:** (radio button)

The enhancement category can be defined using following menu path: (Menu •) Extras • Enhancement Category.

The screenshot shows the SAP Dictionary: Display Table window for table Z018_CUSTOMERS. The window has a menu bar (Menu, Extras, Utilities, Table Contents, Create Entries, Save, Check, Activate) and a toolbar. The main area displays the table's structure with columns: Attribute, Data Element, Data Type, Length, Decimals, and Description. The table structure is as follows:

Attribute	Data Element	Data Type	Length	Decimals	Description
MANDT	Z_018_EN_CHAR_10 CHAR	10	0	0	Data Element for Domain Z_018_CHAR_10
CUSTOMER_ID	Z_018_EN_BICYCL. NUMC	10	0	0	Data element for Z_018_BICYCLE_ID
CUSTOMER_ID	Z_018_EN_QUANTI. NUMC	7	0	0	Data Element for Z_018_QUANTITY

The Enhancement Category dialog box is open, showing the following options:

- Can Be Enhanced (Deep):** (selected)
- Can be enhanced (character-like or numeric):** (radio button)
- Can be enhanced (character-like):** (radio button)
- Cannot Be Enhanced:** (radio button)
- Not classified:** (radio button)

In the next step some records have been entered in the table using the menu path (Menu • Utilities • Table Contents • Create Entries). Finally, Save, check, and activate the table.

☐ << < > >>

SAP Table Z018_CUSTOMERS Insert

Reset Check Table...

MANDT: 205
 CUSTOMER ID:
 CUSTOMER NAME:
 BIRTHDAY:
 CITY:
 POSTAL CODE:
 BICYCLE ID:
 QUANTITY:
 AMOUNT:
 CURRENCY:

The entries those had been entered can be checked using the menu path (Menu • Utilities • Table Contents • Display)

[A14] Z018_PRODUCT [A14] Z018_CUSTOMERS x [A14] Z_018_ABAP_PROGRAM [A14] Z_018_INITAIL_SCREEN_INCLUDE [A14] Z_018_ABAP_PROGRAM [A14] Z_018_ABAP_PROGRAM

SAP Data Browser: Table Z018_CUSTOMERS Select Entries 10

Menu Check Table... More Exit

Table: Z018_CUSTOMERS
 Displayed Fields: 10 of 10 Fixed Columns: 2 List Width: 0250

	MANDT	CUSTOMER_ID	CUSTOMER_NAME	BIRTHDAY	CITY	POSTAL_CODE	BICYCLE_ID	QUANTITY	AMOUNT	CURRENCY
<input type="checkbox"/>	205	CUST001	ALICE THOMPSON	09.04.1998	New York	10001	0000000001	0000002	1.340,00	USD
<input type="checkbox"/>	205	CUST002	BOB MARTINEZ	06.04.2000	Chicago	60614	0000000004	0000002	1.700,00	USD
<input type="checkbox"/>	205	CUST003	CARLA NGUYEN	24.04.1979	San Diego	92103	0000000002	0000001	780,00	USD
<input type="checkbox"/>	205	CUST004	DAVID SMITH	16.05.1984	Seattle	98101	0000000002	0000003	2.340,00	USD
<input type="checkbox"/>	205	CUST005	EMMA RODRIGUEZ	11.09.1986	Miami	33101	0000000001	0000003	2.010,00	USD
<input type="checkbox"/>	205	CUST006	FRANK JOHNSON	01.09.1986	Boston	02108	0000000009	0000002	1.658,00	USD
<input type="checkbox"/>	205	CUST007	GRACE LEE	21.12.2000	Austin	73301	0000000003	0000001	800,00	USD
<input type="checkbox"/>	205	CUST008	HENRY WILSON	19.02.2002	Denver	80203	0000000010	0000004	2.996,00	USD
<input type="checkbox"/>	205	CUST009	ISLA PATEL	22.07.1985	Portland	97201	0000000008	0000002	1.240,00	USD
<input type="checkbox"/>	205	CUST010	JACK O'CONNELL	27.07.1994	San Jose	95112	0000000006	0000001	800,00	USD

3. SOURCE CODE LIBRARY

3.1. Radio Buttons

Create an input screen with four radio buttons using PARAMETERS

```
* Begin selection screen block with title text-000
SELECTION-SCREEN: BEGIN OF BLOCK b WITH FRAME TITLE TEXT-000.
*Radio button in group 'a'
SELECTION-SCREEN BEGIN OF LINE.
  PARAMETERS rb1 RADIOBUTTON GROUP a.
  SELECTION-SCREEN COMMENT 3(18) FOR FIELD rb1.
SELECTION-SCREEN END OF LINE.

SELECTION-SCREEN BEGIN OF LINE.
  PARAMETERS rb2 RADIOBUTTON GROUP a.
  SELECTION-SCREEN COMMENT 3(18) FOR FIELD rb2.

SELECTION-SCREEN END OF LINE.

SELECTION-SCREEN BEGIN OF LINE.
  PARAMETERS rb3 RADIOBUTTON GROUP a.
  SELECTION-SCREEN COMMENT 3(30) FOR FIELD rb3.
  PARAMETERS pid TYPE z018_customers-bicycle_id MODIF ID rb3.

SELECTION-SCREEN END OF LINE.

SELECTION-SCREEN BEGIN OF LINE.
  PARAMETERS rb4 RADIOBUTTON GROUP a.
  SELECTION-SCREEN COMMENT 3(23) FOR FIELD rb4.
SELECTION-SCREEN END OF LINE.

SELECTION-SCREEN END OF BLOCK b.
```

Output:

Program Edit Goto System Help

Solution for Assignment 1 2025

Please Make Your Choice

- ☒ Show All Products
- ☐ Show All Customers
- ☐ Show Customers by Fav Product
- ☐ Update All Customers

The parameters have been changed in the selection text.

Name	Text	DDIC Reference
PID		<input type="checkbox"/>
RB1	Show All Products	<input type="checkbox"/>
RB2	Show All Customers	<input type="checkbox"/>
RB3	Show Customers by Fav Product	<input type="checkbox"/>
RB4	Update All Customers	<input type="checkbox"/>

3.2. Includes

* Include additional logic for each radio button

INCLUDE z_018_radiobutton_include_1.

INCLUDE z_018_radiobutton_2.

INCLUDE z_018_radiobutton_3.

INCLUDE z_018_radiobutton_4.

These are 4 includes for 4 radio buttons. First to show all products, second is to show all customers, third to show customer by favorite product and lastly to update the customer amount in customer table.

i. Show All Products (Radio button 1)

If the first radio button 1 is selected, report has to output all the product records and all columns from the product table. **(1st Include)**

```
* & Include z_018_radiobutton_include_1
* &-----*
* Display report title with inverted color
WRITE: / TEXT-001 COLOR 6 INVERSE ON.
ULINE.
* Display current date, time, user name, and underline
WRITE: / TEXT-002, sy-datum DD/MM/YYYY,
      / TEXT-003, sy-zeit,
      / TEXT-004, sy-uname,
      / sy-uline.
* Form to display all product records from Z018_PRODUCT table
FORM show_products.
" Internal table and work area to hold product records
DATA: it_products TYPE TABLE OF z018_product,
      wa_products TYPE z018_product.

SELECT * INTO TABLE it_products FROM z018_product.
IF sy-subrc = 0.
  "Header
  WRITE: /.
  POSITION 1. WRITE TEXT-005 COLOR 6 INVERSE ON. "Bicycle_ID
  POSITION 13. WRITE TEXT-006 COLOR 6 INVERSE ON. "Bicycle_Name
  POSITION 39. WRITE TEXT-007 COLOR 6 INVERSE ON. "Frame_Size_CM
  POSITION 55. WRITE TEXT-008 COLOR 6 INVERSE ON. "Gear_Type
  POSITION 69. WRITE TEXT-009 COLOR 6 INVERSE ON. "Price
  POSITION 85. WRITE TEXT-010 COLOR 6 INVERSE ON. "Currency

  ULINE.
  " Loop through each product and display its data
  LOOP AT it_products INTO wa_products.
    WRITE: /.
    POSITION 1. WRITE wa_products-bicycle_id.
    POSITION 13. WRITE wa_products-bicycle_name.
    POSITION 39. WRITE wa_products-frame_size_cm.
    POSITION 55. WRITE wa_products-gear_type.
    POSITION 69. WRITE wa_products-price LEFT-JUSTIFIED.
    POSITION 85. WRITE wa_products-currency LEFT-JUSTIFIED.
  ENDLOOP.
  ULINE.
  " Display total number of products shown
  WRITE: / TEXT-011, sy-dbcnt.
ENDIF.
ENDFORM.
```


*Start of selection

START-OF-SELECTION.

IF rb1 = 'X'.

PERFORM show_products.

ENDIF.

Output:

Solution for Assignment 1 2025					
Solution for Assignment 1 2025					
General Report Information					
Date	22.06.2025				
Time	01:03:07				
User Name	DEV-018				
Bicycle_ID	Bicycle_Name	Frame_Size_CM	Gear_Type	Price	Currency
0000000001	ROAD RUNNER	00054	MANUAL	670,00	USD
0000000002	MOUNTAIN KING	00058	AUTO	780,00	USD
0000000003	ECO RIDE	00050	MANUAL	800,00	USD
0000000004	CITY SWIFT	00056	MANUAL	850,00	USD
0000000005	TURBO JET	00052	AUTO	759,00	USD
0000000006	CUBE AIM RACE	00045	MANUAL	800,00	USD
0000000007	POLYGON CASCADE 4	00051	AUTO	710,00	USD
0000000008	SCOTT ASPECT 950	00052	MANUAL	620,00	USD
0000000009	SPECIALIZED ROCKHOPPER	00056	AUTO	829,00	USD
0000000010	NORCO STORM 5	00049	MANUAL	749,00	USD
Results Generated		10			

ii. Show All Customers (Radio Button 2)

If the second radio button is selected, the report must output all the customers records and all columns from the invoices table. (2nd Include)

```
* & Include z_018_radiobutton_2
* &-----*
" Internal table and variables for storing and formatting customer data
FORM show_customers.
DATA:
  it_customers TYPE TABLE OF z018_customers,
  wa_customers TYPE z018_customers,
  lv_birthday_str TYPE string,
  lv_quantity_str TYPE string,
  lv_amount_str TYPE string.
" Select all customers from database
SELECT * INTO TABLE it_customers FROM z018_customers.
IF sy-subrc = 0.
" Header with positions and inverse color
WRITE: /.
POSITION 1. WRITE TEXT-012 COLOR 6 INVERSE ON. "Customer_ID
POSITION 15. WRITE TEXT-013 COLOR 6 INVERSE ON. "Customer_Name
POSITION 40. WRITE TEXT-014 COLOR 6 INVERSE ON. "Birthday
POSITION 55. WRITE TEXT-015 COLOR 6 INVERSE ON. "City
POSITION 70. WRITE TEXT-016 COLOR 6 INVERSE ON. "Postal_Code
POSITION 85. WRITE TEXT-005 COLOR 6 INVERSE ON. "Bicycle_ID
POSITION 100. WRITE TEXT-017 COLOR 6 INVERSE ON. "Quantity
POSITION 110. WRITE TEXT-018 COLOR 6 INVERSE ON. "Amount
POSITION 120. WRITE TEXT-010 COLOR 6 INVERSE ON. "Currency

ULINE.

LOOP AT it_customers INTO wa_customers.
  " Format Birthday (date) to DD/MM/YYYY string
  lv_birthday_str = |{ wa_customers-birthday DATE = USER }|.
  " Convert Quantity (numeric) to string without leading zeros
  lv_quantity_str = CONV string( wa_customers-quantity ).
  " Format Amount (numeric) with 2 decimals, convert to string
  lv_amount_str = |{ wa_customers-amount DECIMALS = 2 }|.
" Display customer data
WRITE: /.
POSITION 1. WRITE wa_customers-customer_id LEFT-JUSTIFIED.
POSITION 15. WRITE wa_customers-customer_name LEFT-JUSTIFIED.
POSITION 40. WRITE lv_birthday_str LEFT-JUSTIFIED.
POSITION 55. WRITE wa_customers-city LEFT-JUSTIFIED.
POSITION 70. WRITE wa_customers-postal_code LEFT-JUSTIFIED.
POSITION 85. WRITE wa_customers-bicycle_id LEFT-JUSTIFIED.
POSITION 100. WRITE lv_quantity_str LEFT-JUSTIFIED.
POSITION 110. WRITE lv_amount_str LEFT-JUSTIFIED.
POSITION 120. WRITE wa_customers-currency LEFT-JUSTIFIED.
ENDLOOP.
```

```

    ULINE.
    WRITE: / TEXT-011, sy-dbcnt. " Show number of records
  ENDIF.
ENDFORM.

```

```

* Start of Selection
START-OF-SELECTION.
IF rb2 = 'X'.
  PERFORM show_customers.
ENDIF.

```

Output:

SAP Solution for Assignment 1 2025								1
Solution for Assignment 1 2025								
General Report Information								
Date	22.06.2025							
Time	01:14:35							
User Name	DEV-018							
Customer_ID	Customer_Name	Birthday	City	Postal Code	Bicycle_ID	Quantity	Amount	Currency
CUST001	ALICE THOMPSON	09.04.1998	New York	10001	0000000001	0000002	1340.00	USD
CUST002	BOB MARTINEZ	06.04.2000	Chicago	60614	0000000004	0000002	1700.00	USD
CUST003	CARLA NGUYEN	24.04.1979	San Diego	92103	0000000002	0000001	780.00	USD
CUST004	DAVID SMITH	16.05.1984	Seattle	98101	0000000002	0000003	2340.00	USD
CUST005	EMMA RODRIGUEZ	11.09.1986	Miami	33101	0000000001	0000003	2010.00	USD
CUST006	FRANK JOHNSON	01.09.1986	Boston	02108	0000000009	0000002	1658.00	USD
CUST007	GRACE LEE	21.12.2000	Austin	73301	0000000003	0000001	800.00	USD
CUST009	ISLA PATEL	22.07.1985	Portland	97201	0000000008	0000002	1240.00	USD
CUST008	HENRY WILSON	19.02.2002	Denver	80203	0000000010	0000004	2996.00	USD
CUST010	JACK O'CONNELL	27.07.1994	San Jose	95112	0000000006	0000001	800.00	USD
Results Generated		10						

iii. Show All Customers by Favorite Product (Radio Button 3)

If the third radio button is selected, the report should present only those customers that prefer the product you enter in a text parameter box. In addition, all columns from both tables should be displayed. (3rd Include)

```
* & Include z_018_radiobutton_3
* &-----*

" Define a structure combining customer and product fields for joined data
FORM display_customers_by_product.

TYPES: BEGIN OF ty_joined,
        customer_id TYPE z_018_en_cust_id,
        customer_name TYPE z_018_en_cust_name,
        birthday TYPE z_018_en_birthday,
        city TYPE z_018_en_char30,
        postal_code TYPE z_018_en_char_10,
        bicycle_id TYPE z_018_en_bicycle_id,
        quantity TYPE z_018_en_quantity,
        amount TYPE netwr_ap,
        currency TYPE waerk,
        bicycle_name TYPE z_018_en_bicycle_name,
        frame_size_cm TYPE z_018_frame_size,
        gear_type TYPE z_018_en_gear_type,
        price TYPE netwr_ap,
    END OF ty_joined.

" Declare internal table and work area for joined data, and counter variable
DATA: it_joined TYPE STANDARD TABLE OF ty_joined,
      wa_joined TYPE ty_joined,
      lv_count TYPE i.

" Select customer and product data where bicycle IDs match and equal parameter pid
SELECT
    a~customer_id, a~customer_name, a~birthday, a~city, a~postal_code,
    a~bicycle_id, a~quantity, a~amount, a~currency,
    b~bicycle_name, b~frame_size_cm, b~gear_type, b~price
    INTO TABLE @it_joined
    FROM z018_customers AS a
    INNER JOIN z018_product AS b
    ON a~bicycle_id = b~bicycle_id
    WHERE b~bicycle_id = @pid.

" Print header with field names in inverse color at specific positions
WRITE: /.
POSITION 1. WRITE TEXT-012 COLOR 6 INVERSE ON. "Customer_ID
POSITION 14. WRITE TEXT-013 COLOR 6 INVERSE ON. "Customer_Name
POSITION 35. WRITE TEXT-015 COLOR 6 INVERSE ON. "City
POSITION 50. WRITE TEXT-016 COLOR 6 INVERSE ON. "Postal_Code
POSITION 69. WRITE TEXT-005 COLOR 6 INVERSE ON. "Bicycle_ID
POSITION 82. WRITE TEXT-006 COLOR 6 INVERSE ON. "Bicycle_Name
POSITION 95. WRITE TEXT-017 COLOR 6 INVERSE ON. "Quantity
POSITION 110. WRITE TEXT-009 COLOR 6 INVERSE ON. "Price
```

```

POSITION 120. WRITE TEXT-018 COLOR 6 INVERSE ON. "Amount
POSITION 132. WRITE TEXT-010 COLOR 6 INVERSE ON. "Currency
ULINE.
" Loop through joined data and display each record
LOOP AT it_joined INTO wa_joined.
  ADD 1 TO lv_count.

WRITE: /.
POSITION 1.  WRITE wa_joined-customer_id LEFT-JUSTIFIED.
POSITION 14. WRITE wa_joined-customer_name LEFT-JUSTIFIED.
POSITION 35. WRITE wa_joined-city LEFT-JUSTIFIED.
POSITION 50. WRITE wa_joined-postal_code LEFT-JUSTIFIED.
POSITION 69. WRITE wa_joined-bicycle_id LEFT-JUSTIFIED.
POSITION 82. WRITE wa_joined-bicycle_name LEFT-JUSTIFIED.
POSITION 95. WRITE wa_joined-quantity LEFT-JUSTIFIED.
POSITION 110. WRITE wa_joined-price LEFT-JUSTIFIED.
POSITION 120. WRITE wa_joined-amount LEFT-JUSTIFIED.
POSITION 132. WRITE wa_joined-currency LEFT-JUSTIFIED.
ENDLOOP.

ULINE.
WRITE: / TEXT-011, lv_count. " e.g., 'Total Records: 5'

ENDFORM.

START-OF-SELECTION.
  IF rb3 = 'X'.
    PERFORM display_customers_by_product.
  ENDIF.

```

Output:

In the selection screen I have selected Bicycle_ID 1, and the output screen is showing me the results of customers those bought this bicycle.

 Solution for Assignment 1 2025

Solution for Assignment 1 2025									1
General Report Information									
Date	22.06.2025								
Time	01:27:27								
User Name	DEV-018								
Customer_ID	Customer_Name	City	Postal Code	Bicycle_ID	Bicycle_Name	Quantity	Price	Amount	Currency
CUST001	ALICE THOMPSON	New York	10001	0000000001	ROAD RUNNER	0000002	670,00	1.340,00	USD
CUST005	EMMA RODRIGUEZ	Miami	33101	0000000001	ROAD RUNNER	0000003	670,00	2.010,00	USD
Results Generated		2							

iv. Update Customer Amount (Radio Button 4)

If the fourth radio button is selected, the system has to recalculate and update the amount in the customer table. Multiply the product quantity from the customer table and the product price from the product table and store the result in the customer table. During calculation output all the product records with the new calculated amount should be displayed. (4th Include)

```
* & Include z_018_radiobutton_4
* &-----*
* &-----*

FORM update_customer_amounts.
" Counter for number of updated records
DATA: lv_updated TYPE i VALUE 0.
DATA: it_customers TYPE TABLE OF z018_customers,
      wa_customers TYPE z018_customers,
      lv_price TYPE netwr_ap.

" Retrieve all customer records from the database
SELECT * INTO TABLE it_customers FROM z018_customers.

" Print table header
WRITE: /
      TEXT-012 COLOR 6 INVERSE ON,      "Customer_ID
      TEXT-013 COLOR 6 INVERSE ON,      "Customer_Name
      TEXT-005 COLOR 6 INVERSE ON,      "Bicycle_ID
      TEXT-017 COLOR 6 INVERSE ON,      "Quantity
      TEXT-018 COLOR 6 INVERSE ON,      "Amount
      TEXT-010 COLOR 6 INVERSE ON.      "Currency
ULINE.

LOOP AT it_customers INTO wa_customers.

" Get price of the product corresponding to the customer's bicycle
SELECT SINGLE price INTO @lv_price
  FROM z018_product
  WHERE bicycle_id = @wa_customers-bicycle_id.
" If matching product found, calculate and update amount
IF sy-subrc = 0.
  wa_customers-amount = wa_customers-quantity * lv_price.
  MODIFY z018_customers FROM wa_customers.
  ADD 1 TO lv_updated.
ENDIF.

" Display the updated customer information
WRITE: / wa_customers-customer_id UNDER TEXT-012 LEFT-JUSTIFIED,
        wa_customers-customer_name UNDER TEXT-013 LEFT-JUSTIFIED,
        wa_customers-bicycle_id UNDER TEXT-005 LEFT-JUSTIFIED,
        wa_customers-quantity UNDER TEXT-017 LEFT-JUSTIFIED,
        wa_customers-amount UNDER TEXT-018 LEFT-JUSTIFIED,
        wa_customers-currency UNDER TEXT-010 LEFT-JUSTIFIED.
```

```

ENDLOOP.
ULINE.
" Display total number of updated records
WRITE: / TEXT-011, lv_updated.

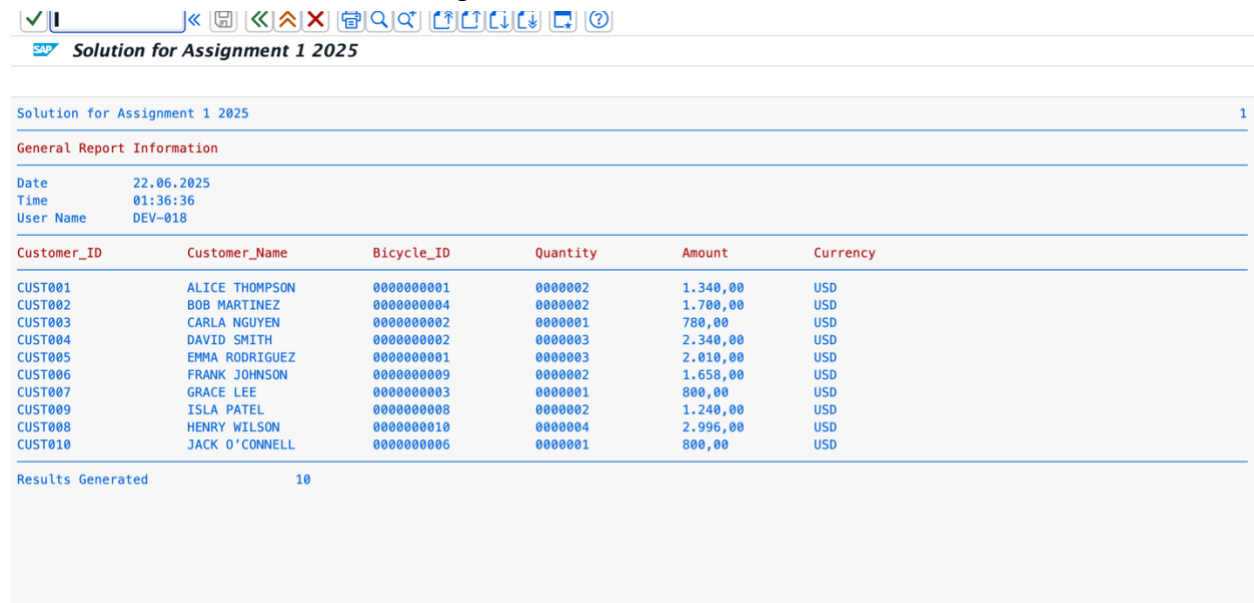
ENDFORM.

START-OF-SELECTION.
IF rb4 = 'X'.
    PERFORM update_customer_amounts.
ENDIF.

```

Output:

It has calculated the amount of the purchase that each customer has made.



The screenshot shows the SAP 'Solution for Assignment 1 2025' interface. At the top, there is a toolbar with various icons for navigation and printing. Below the toolbar, the title 'Solution for Assignment 1 2025' is displayed on the left, and the number '1' is on the right. The main section is titled 'General Report Information' and contains a table with the following data:

Customer_ID	Customer_Name	Bicycle_ID	Quantity	Amount	Currency
CUST001	ALICE THOMPSON	000000001	0000002	1.340,00	USD
CUST002	BOB MARTINEZ	000000004	0000002	1.700,00	USD
CUST003	CARLA NGUYEN	000000002	0000001	780,00	USD
CUST004	DAVID SMITH	000000002	0000003	2.340,00	USD
CUST005	EMMA RODRIGUEZ	000000001	0000003	2.010,00	USD
CUST006	FRANK JOHNSON	000000009	0000002	1.658,00	USD
CUST007	GRACE LEE	000000003	0000001	800,00	USD
CUST009	ISLA PATEL	000000008	0000002	1.240,00	USD
CUST008	HENRY WILSON	000000010	0000004	2.996,00	USD
CUST010	JACK O'CONNELL	000000006	0000001	800,00	USD

Below the table, it states 'Results Generated 10'.

4. (Time, Date, Username)

For showing the username, time and date these codes are written on top of the includes.

```

WRITE: / TEXT-001 COLOR 6 INVERSE ON.
uline.
WRITE: / TEXT-002, sy-datum DD/MM/YYYY,
      / TEXT-003, sy-uzeit,
      / TEXT-004, sy-uname,
      / sy-uline.

```

Output:

General Report Information

Date 18.06.2025
Time 18:18:37
User Name DEV-018

5. Text-Elements

The purpose of text elements is to be used as constants or labels for titles and messages and are defined according to the language of the session.

SAP ABAP Text Elements: Display Text Symbols Language English

← → ↺ ↻ ↵ ↶ ↷ ↸ ↹ ↺ ↻ ↵ ↶ ↷ ↸ ↹

Program Z_018_ASSIGNMENT1_2025

Active

Text Symbols Selection Texts List Headings

Next Free Number

1 / 19

Sy	Text	Length	Max.
000	Please Make Your Choice	23	46
001	General Report Information	26	52
002	Date	4	14
003	Time	4	14
004	User Name	9	14
005	Bicycle_ID	10	20
006	Bicycle_Name	12	22
007	Frame_Size_CM	13	23
008	Gear_Type	9	19
009	Price	5	10
010	Currency	8	10
011	Results Generated	17	27
012	Customer_ID	11	21
013	Customer_Name	13	23

<div> <div> <div>←</div> <div>→</div> <div>↶</div> <div>↷</div> <div>↺</div> <div>↻</div> <div>⌂</div> <div>📄</div> <div>🔍</div> <div>🔧</div> </div> <div> <div>Program</div> <div> <div>018_ASSIGNMENT1_2025</div> <div>Active</div> </div> </div> </div>				
<div> <div>Text Symbols</div> <div>Selection Texts</div> <div>List Headings</div> </div>				
<div> <div> <div>⌂</div> <div>📄</div> <div>⊕</div> <div>⊖</div> <div>📄</div> <div>⌂</div> </div> <div>Next Free Number</div> <div>7 / 19</div> </div>				
Sy.	Text	Lngh		Max.
006	Bicycle_Name	12	22	
007	Frame_Size_CM	13	23	
008	Gear_Type	9	19	
009	Price	5	10	
010	Currency	8	10	
011	Results Generated	17	27	
012	Customer_ID	11	21	
013	Customer_Name	13	23	
014	Birthday	8	18	
015	City	4	14	
016	Postal Code	11	21	
017	Quantity	8	18	
018	Amount	6	16	
		0	0	

6. Overview of the Code

```
*& Report z_018_assignment1_2025
*&-----*
*&
*&-----*
REPORT z_018_assignment1_2025.
* Begin selection screen block with title text-000
SELECTION-SCREEN: BEGIN OF BLOCK b WITH FRAME TITLE TEXT-000.
*Radio button in group 'a'
SELECTION-SCREEN BEGIN OF LINE.
  PARAMETERS rb1 RADIOBUTTON GROUP a.
  SELECTION-SCREEN COMMENT 3(18) FOR FIELD rb1.
SELECTION-SCREEN END OF LINE.

SELECTION-SCREEN BEGIN OF LINE.
  PARAMETERS rb2 RADIOBUTTON GROUP a.
  SELECTION-SCREEN COMMENT 3(18) FOR FIELD rb2.

SELECTION-SCREEN END OF LINE.

SELECTION-SCREEN BEGIN OF LINE.
  PARAMETERS rb3 RADIOBUTTON GROUP a.
  SELECTION-SCREEN COMMENT 3(30) FOR FIELD rb3.
  PARAMETERS pid TYPE z018_customers-bicycle_id MODIF ID rb3.

SELECTION-SCREEN END OF LINE.

SELECTION-SCREEN BEGIN OF LINE.
  PARAMETERS rb4 RADIOBUTTON GROUP a.
  SELECTION-SCREEN COMMENT 3(23) FOR FIELD rb4.
SELECTION-SCREEN END OF LINE.

SELECTION-SCREEN END OF BLOCK b.
* Include additional logic for each radio button
INCLUDE z_018_radiobutton_include_1.
INCLUDE z_018_radiobutton_2.
INCLUDE z_018_radiobutton_3.
INCLUDE z_018_radiobutton_4.
```

The codes inside the includes are added in each radio button description.

7. Problems Occurred

- Z018_Customers table was not activated as the reference table and reference field for the currency field was missing.
(To fix this the reference table and field has been added)
- The position of the data was not properly adjusted to the text of the header and the which was solved by using the code POSITION and LEFT-JUSTIFIED.

SAP

Solution for Assignment 1 2025

Solution for Assignment 1 20251

General Report Information

Date21.06.2025

Time20:20:05

User NameDEV-018

Bicycle_ID	Bicycle_Name	Frame_Size_CM	Gear_Type	Currency	Price
0000000001	ROAD RUNNER	00054	MANUAL	USD	670,00
0000000002	MOUNTAIN KING	00058	AUTO	USD	780,00
0000000003	ECO RIDE	00050	MANUAL	USD	800,00
0000000004	CITY SWIFT	00056	MANUAL	USD	850,00
0000000005	TURBO JET	00052	AUTO	USD	759,00
0000000006	CUBE AIM RACE	00045	MANUAL	USD	800,00
0000000007	POLYGON CASCADE 4	00051	AUTO	USD	710,00
0000000008	SCOTT ASPECT 950	00052	MANUAL	USD	620,00
0000000009	SPECIALIZED ROCKHOPPER	00056	AUTO	USD	829,00
0000000010	NORCO STORM 5	00049	MANUAL	USD	749,00

Results Generated10

After arranging and fixing the code,



Solution for Assignment 1 2025

Solution for Assignment 1 2025

General Report Information

Date22.06.2025

Time02:15:34

User NameDEV-018

Bicycle_ID	Bicycle_Name	Frame_Size_CM	Gear_Type	Price	Currency
0000000001	ROAD RUNNER	00054	MANUAL	670,00	USD
0000000002	MOUNTAIN KING	00058	AUTO	780,00	USD
0000000003	ECO RIDE	00050	MANUAL	800,00	USD
0000000004	CITY SWIFT	00056	MANUAL	850,00	USD
0000000005	TURBO JET	00052	AUTO	759,00	USD
0000000006	CUBE AIM RACE	00045	MANUAL	800,00	USD
0000000007	POLYGON CASCADE 4	00051	AUTO	710,00	USD
0000000008	SCOTT ASPECT 950	00052	MANUAL	620,00	USD
0000000009	SPECIALIZED ROCKHOPPER	00056	AUTO	829,00	USD
0000000010	NORCO STORM 5	00049	MANUAL	749,00	USD

Results Generated

10