

CHEP Pallet Management System

BTech 451 Final Seminar

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Company:

Coca-Cola Amatil New Zealand

- Licensed bottler of The Coca-Cola Company in New Zealand
- Been in operation since the early 1900s
- 1000 or so people employed by CCA
- 5 production facilities (located in Auckland, Putaruru, Christchurch)

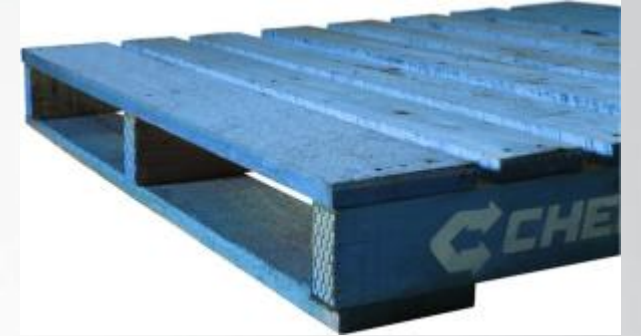


Business Problem: CHEP Pallet Management

- All CHEP Pallet transfers are performed manually
- CCA Staff read data off two screens and type the information into a third system
- Pallet Transfers are not entered into CHEP system
- Potential losses that CCA are liable for
- Losses > \$500,000



CHEP Pallets



- CHEP – Commonwealth Handling Equipment Pool
- Goods sent to Supermarkets within New Zealand on these pallets
- Key Requirement for CCA
- Approximately 40,000 pallets dispatched per month from CCA



Solution

- To create a system to capture and manage pallet movements for CCA Customers and Vendors
- Automation of Shipment information transfer to CHEP
- Automation of Pallet Liability information transfer to CHEP



Related Works



- Not Practical
- Not Cost-effective
- Not Viable for all CCA Customers
- Pallets are prone to damage

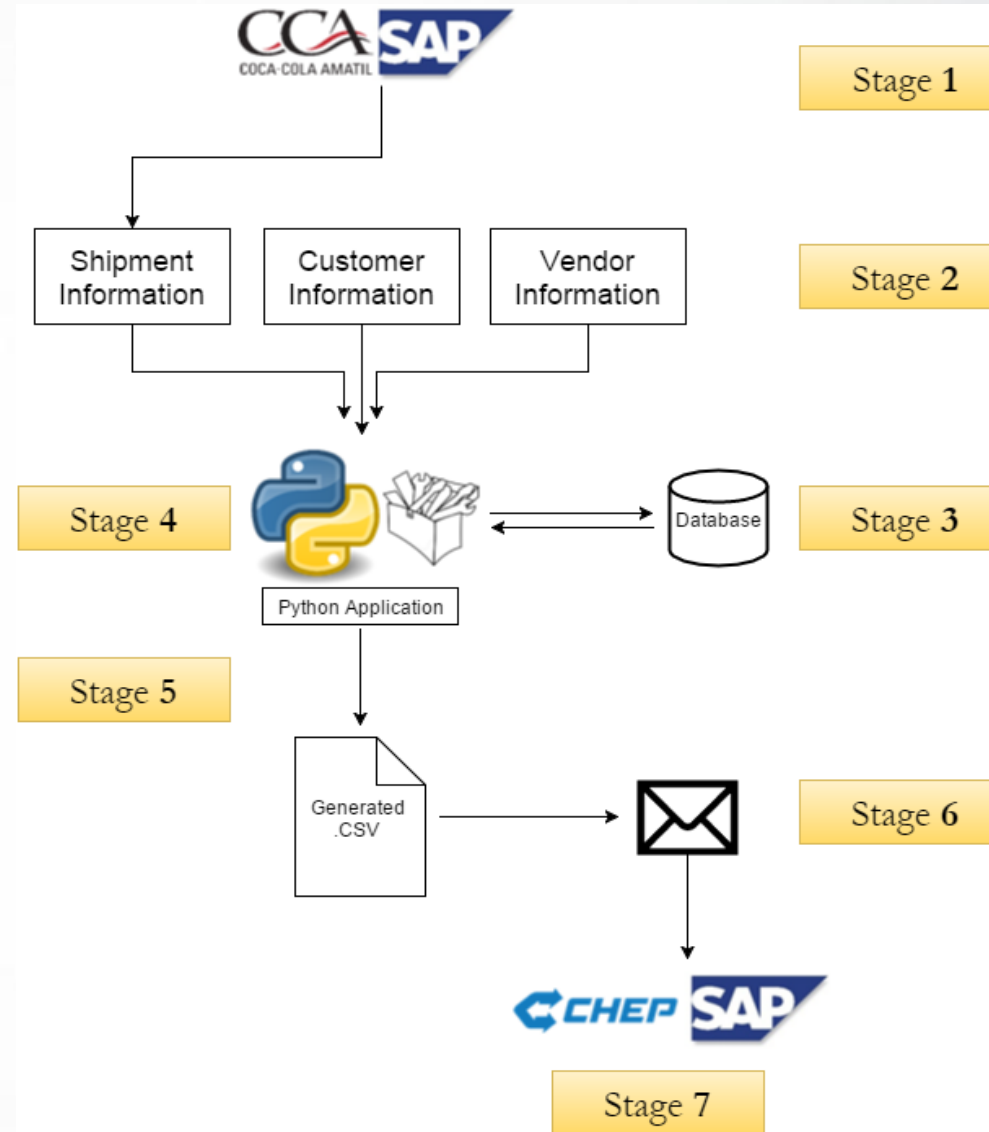


The Project:

- Use of Several Platforms + Technologies to improve business processes
- SAP ABAP, Python3 and SQLite cross-platform library
- Python Application will serve as the intermediary system to automate the transfer of information

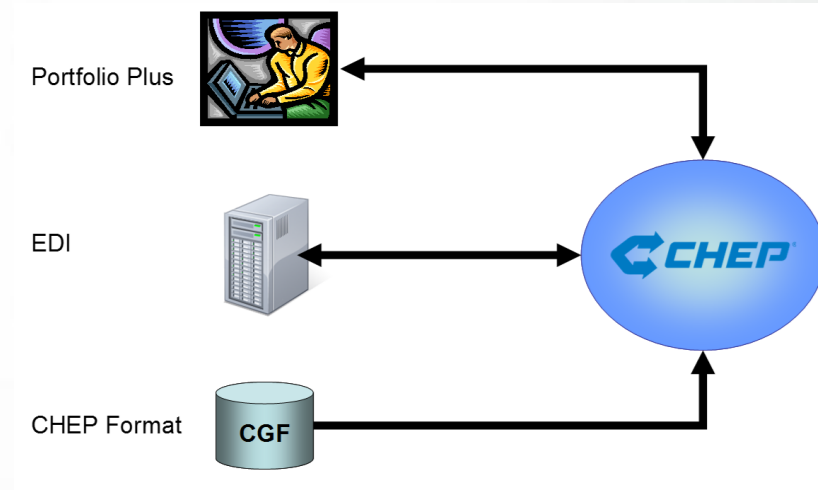


Solution Design:



Solution Design Part 2:

- Referring back to the Stage 6 of my Python Application
- Creation of an EDI (Electronic Data Interchange) File
- Key requirement by CHEP



Solution Benefits:

- Time savings
- Monetary savings
- Staff productivity increased – Less manual work required
- CCA information transferred directly to CHEP systems
- Eliminates several paperwork processes
- Business process streamlining



Progress: First-Half

- SAP Table Joins
- Selection process which can allow manual input
- SQVI Extraction Report



SAP Table Joins:

QuickViewer BTECHV9 list design

Icons: Alias, Join conditions, Search, Filter, Print

VTTK : Shipment Header

Technical Name	Long Text
TKNUM	Shipment Number
VBTP	SD document category
SHTYP	Shipment type
TPLST	Transportation planning point
ERNAM	Name of Person who Create
ERDAT	Date on Which Record Was C
ERZET	Entry time
AENAM	Name of Person Who Change
AEDAT	Changed On
AEZET	Time last change was made
STERM	Leq determination
ABFER	Shipment completion type
ABWST	Processing control
BFART	Service Level
VSART	Shipping type
VSABL	Shipping type of preliminary
VSANL	Shipping type of subsequent
LAUFK	Leq Indicator
VSBED	Shipping Conditions
ROUTE	Shipment route
SIGNI	Container ID
EXTI1	External identification 1
EXTI2	External identification 2

VTP : Shipment Item

Technical Name	Long Text
TKNUM	Shipment Number
TPNUM	Shipment item
VBELN	Delivery
TPRFO	Itinerary of shipment items
ERNAM	Name of Person who Created the Object
ERDAT	Date on Which Record Was Created
ERZET	Entry time
PKSTA	There are Packed Deliveries Dependent on S
KZHULFG	Indicator: Delivery Items for HUs Generated

LFA1 : Vendor Master (General Section)

Technical Name	Long Text
LIFNR	Account Number of Vendor
LAND1	Country Key
NAME1	Name 1
NAME2	Name 2
NAME3	Name 3
NAME4	Name 4
ORT01	City
ORT02	District
PFACH	PO Box

VBFA : Sales Document Flow

Technical Name	Long Text
VBELV	Preceding sales and distribution docu
POSNV	Preceding item of an SD document
VBELN	Subsequent sales and distribution do
POSNN	Subsequent item of an SD document
VBTP N	Document category of subsequent d
RFMNG	Referenced quantity in base unit of r
MEINS	Base Unit of Measure
RFWRT	Reference value
WAERS	Statistics currency
VBTP V	Document category of preceding SD
PLMIN	Quantity is calculated positively, nex
TAQUI	ID: MM-WM transfer order confirmer
ERDAT	Date on Which Record Was Created
ERZET	Entry time
MATNR	Material Number
BWART	Movement Type (Inventory Manag
BDART	Requirement type
PLART	Planning type
STUFE	Level of the document flow record
LGNUM	Warehouse Number / Warehouse Co
AEDAT	Changed On
FKTYP	Billing category
BRGEW	Gross weight

VBAB : Sales Document: Header Data

Technical Name	Long Text
VBELN	Sales Document
ERDAT	Date on Which Record Was C
ERZET	Entry time
ERNAM	Name of Person who Create
ANGDT	Quotation/Inquiry is valid fro
BNDDT	Date until which bid/quotation
AUDAT	Document Date (Date Receiv
VBTP	SD document category
TRVOG	Transaction group
AUART	Sales Document Type
AUGRU	Order reason (reason for the
GWLDT	Warranty Date
SUBMI	Collective number (SD)
LIFSK	Delivery block (document he
FAKSK	Billing block in SD document
NETWR	Net Value of the Sales Order
WAERK	SD Document Currency
VKORG	Sales Organization
VTWEG	Distribution Channel
SPART	Division
VKGRP	Sales Group
VKBUR	Sales Office
GSBER	Business Area

KNA1 : General Data in Customer Master


Technical Name	Long Text
KUNNR	Customer Number
LAND1	Country Key
NAME1	Name 1
NAME2	Name 2
ORT01	City
PSTLZ	Postal Code
REGIO	Region (State, Province, C
SORTL	Sort field
STRAS	House number and street
TELF1	First telephone number
TELF2	Fax Number
XCPDK	Indicator: Is the account a
ADRNR	Address
MCOD1	Search term for matchcode
MCOD2	Search Term for Matchcod
MCOD3	Search term for matchcode
ANRED	Title
AUFSD	Central order block for cus
BAHNE	Express Train Station
BAHNS	Train Station
BBBNR	International location num
BBSNR	International location num
BEGRU	Authorization Group

Left Outer Join







Selection Process:

BTech Extract Version 9



Report-specific selections

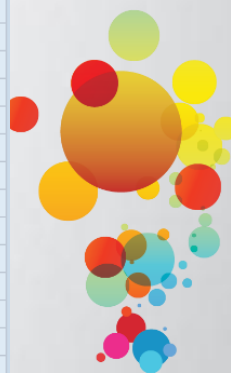
Shipment Number	<input type="text" value="50241399"/>	to	<input type="text" value="50241409"/>	
Customer purchase order number	<input type="text"/>	to	<input type="text"/>	
Actual date of check-in	<input type="text"/>	to	<input type="text"/>	
Shipment type	<input type="text"/>	to	<input type="text"/>	



SQVI Report:

BTech Extract Version 9

Reference	Other Reference	Shipment Date	Pallet Quantity	Purchasing Customer	Purchasing Customer Address	Delivery	Sold-To-PT	TPPT	Forwarding Agent	Proc Time	Ship T.	Shipping Company	Subsit
50241399	S93857991	17.09.2013	24.000	PROGRESSIVE ENTERPRISES #9700	80 FAVONA RD	413168900	8093503	AKAK	295450	15:51:29	Y014	TOLL TRANZLINK NI ERS	000001
50241400	S93857964	17.09.2013	23.000	PROGRESSIVE ENTERPRISES #9700	80 FAVONA RD	413168901	8093503	AKAK	295450	15:59:25	Y014	TOLL TRANZLINK NI ERS	000001
50241401	00000154898	17.09.2013	1.000	BP CONNECT BUSH INN	338 RICCARTON RD	413167126	8100840	CHCH	296965	04:21:28	Y014	SCOOBIE CARRIERS PARTNERSHIP	000001
50241401		17.09.2013	1.000	FACC CAFE 92 *S*	92 RUSSLEY RD	413169480	8097952	CHCH	296965	04:21:28	Y014	SCOOBIE CARRIERS PARTNERSHIP	000001
50241402		17.09.2013	1.000	MOUNT ROSKILL LIQUOR CENTRE	1490 DOMINION RD	413168912	8080859	AKAK	305485	04:42:26	Y014	LOGICAL VENDOR FOR CCA DRIVERS	000001
50241402	4505564112	17.09.2013	1.000	COCA COLA OCEANIA LTD	19 CARBINE RD	413169719	8020963	AKAK	305485	04:42:26	Y014	LOGICAL VENDOR FOR CCA DRIVERS	000001
50241402	30720	17.09.2013	1.000	CCA BRANDS L&P NATL SAMPLG	19 CARBINE RD	413169721	8073496	AKAK	305485	04:42:26	Y014	LOGICAL VENDOR FOR CCA DRIVERS	000001
50241402	4505573824	17.09.2013	1.000	COCA COLA OCEANIA LTD	19 CARBINE RD	413169722	8020963	AKAK	305485	04:42:26	Y014	LOGICAL VENDOR FOR CCA DRIVERS	000001
50241402		17.09.2013	1.000	OPORTO SYLVIA PARK	286 MT WELLINGTON HWY	413169724	8080304	AKAK	305485	04:42:26	Y014	LOGICAL VENDOR FOR CCA DRIVERS	000001
50241402		17.09.2013	1.000	OPORTO SYLVIA PARK	286 MT WELLINGTON HWY	413169724	8080304	AKAK	305485	04:42:26	Y014	LOGICAL VENDOR FOR CCA DRIVERS	000001
50241402	30721	17.09.2013	1.000	CCA BRANDS L&P NATL SAMPLG	19 CARBINE RD	413169726	8073496	AKAK	305485	04:42:26	Y014	LOGICAL VENDOR FOR CCA DRIVERS	000001
50241402		17.09.2013	1.000	MASALA MT EDEN	510 MT EDEN RD	413169728	8109821	AKAK	305485	04:42:26	Y014	LOGICAL VENDOR FOR CCA DRIVERS	000001
50241403	417684	17.09.2013	6.000	SKYCITY RESTAURANT & BAR	53 WELLESLEY ST	413169327	8008147	AKAK	297242	04:55:25	Y014	PHENESS LIMITED	000001
50241403		17.09.2013	6.000	FULLERS GROUP LTD	99 QUAY ST	413169370	8035621	AKAK	297242	04:55:25	Y014	PHENESS LIMITED	000001
50241403	416951	17.09.2013	6.000	SKYCITY RESTAURANT & BAR	53 WELLESLEY ST	413169372	8008147	AKAK	297242	04:55:25	Y014	PHENESS LIMITED	000001
50241403	417146	17.09.2013	6.000	SKYCITY RESTAURANT & BAR	53 WELLESLEY ST	413169373	8008147	AKAK	297242	04:55:25	Y014	PHENESS LIMITED	000001
50241403	417352	17.09.2013	6.000	SKYCITY RESTAURANT & BAR	53 WELLESLEY ST	413169394	8008147	AKAK	297242	04:55:25	Y014	PHENESS LIMITED	000001
50241403	4981551	17.09.2013	6.000	NEW WORLD METRO QUEEN ST	125 QUEEN ST	413169427	8094104	AKAK	297242	04:55:25	Y014	PHENESS LIMITED	000001
50241403	417570	17.09.2013	6.000	SKYCITY RESTAURANT & BAR	53 WELLESLEY ST	413169442	8008147	AKAK	297242	04:55:25	Y014	PHENESS LIMITED	000001
50241403	417570	17.09.2013	6.000	SKYCITY RESTAURANT & BAR	53 WELLESLEY ST	413169464	8008147	AKAK	297242	04:55:25	Y014	PHENESS LIMITED	000001
50241403	13157	17.09.2013	6.000	CROWNE PLAZA HOTEL	128 ALBERT ST	413169546	8061682	AKAK	297242	04:55:25	Y014	PHENESS LIMITED	000001
50241403		17.09.2013	6.000	FIX QUAY ST 638	137 QUAY ST	413169565	8028906	AKAK	297242	04:55:25	Y014	PHENESS LIMITED	000001
50241403	00000152073	17.09.2013	6.000	BP CONNECT FANSHAW ST	104 FANSHAW ST	413169568	8034746	AKAK	297242	04:55:25	Y014	PHENESS LIMITED	000001
50241403	13113	17.09.2013	6.000	CROWNE PLAZA HOTEL	128 ALBERT ST	413169581	8061682	AKAK	297242	04:55:25	Y014	PHENESS LIMITED	000001
50241404		17.09.2013	1.000	SPICE OF INDIA	21 ELLIOTT ST	413168927	8046098	AKAK	297242	04:55:25	Y014	PHENESS LIMITED	000001
50241404	NZ1031	17.09.2013	1.000	MICROSOFT AUCKLAND	22 VIADUCT HARBOUR AVE UNIT 1	413169105	8112256	AKAK	297242	04:55:25	Y014	PHENESS LIMITED	000001
50241404		17.09.2013	1.000	UMIYA	25 ELLIOT ST	413169317	8000779	AKAK	297242	04:55:25	Y014	PHENESS LIMITED	000001
50241404		17.09.2013	1.000	PITA PIT VIADUCT*S*	22 VIADUCT HARBOUR AVE	413169326	8091976	AKAK	297242	04:55:25	Y014	PHENESS LIMITED	000001
50241404		17.09.2013	1.000	VIETNAMESE DELIGHT	21 ATRIUM ON ELLIOT	413169328	8062870	AKAK	297242	04:55:25	Y014	PHENESS LIMITED	000001
50241404		17.09.2013	1.000	HOBSON STREET PHARMACY	136 HOBSON ST	413169331	8092846	AKAK	297242	04:55:25	Y014	PHENESS LIMITED	000001
50241404		17.09.2013	1.000	NZ CONVENIENCE STORE	130 VINCENT ST	413169332	8092846	AKAK	297242	04:55:25	Y014	PHENESS LIMITED	000001



Progress: Second-Half

- Python Application split into 3 packages-
Main, generateDatabase and exportEmailer
- Developed decision-making logic



Progress: Second-Half Decision-making Logic

- 1) Which shipments are not applicable to CHEP?
- 2) From which shipments must the liability of pallets be transferred directly to the customer?
- 3) From which shipments must the liability of pallets be transferred to the Vendor and not the customer?
- 4) From the above shipments which area were the goods sent to?
- 5) Q3 and Q4 combined, use information to determine the correct Vendor Division



Progress: Second-Half

- Exported information according to CHEP Requirements
- Data Validation of my Export data and CCA SAP Data
- Data Emailed to CHEP and verified
- Completed development of the Python Application



Live Demo



What I have gained:

- Project Management skills
- Time Management skills
- CCA Corporate Business experience
- Python language knowledge
- SAP ABAP language knowledge
- SQLite Cross-platform library knowledge



Questions



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