Unit Budget DB Sample

**NonSalaryCosts:**

﻿

﻿CREATE TABLE NonSalaryCosts (

NSCID PRIMARY KEY,

NSCName VARCHAR (50),

Hours INT,

CostPerHour INT,

TotalCost,

UNIQUE (

NSCName,

CostPerHour

)

ON CONFLICT FAIL

);

**Sample Insert:**

INSERT INTO NonSalaryCosts VALUES(1,"Workshop/technician time",NULL,75,NULL);

INSERT INTO NonSalaryCosts VALUES(2,"Teaching technician time",NULL,50,NULL);

INSERT INTO NonSalaryCosts VALUES(3,"Materials & consumables",NULL,NULL,NULL);

INSERT INTO NonSalaryCosts VALUES(4,"Software-$500/month consumables amazon web services",NULL,NULL,1500);

INSERT INTO NonSalaryCosts VALUES(5,"Field trips",NULL,NULL,NULL);

INSERT INTO NonSalaryCosts VALUES(6,"Other",NULL,NULL,NULL);

INSERT INTO NonSalaryCosts VALUES(7,"Software",NULL,NULL,NULL);

INSERT INTO NonSalaryCosts VALUES(8,"Marking mid-semester test",NULL,NULL,400);

**Enrolment:**

﻿CREATE TABLE Enrolment (

EnrolmentID INT PRIMARY KEY,

UnitID INT REFERENCES Unit (UnitID) ON DELETE RESTRICT ON UPDATE CASCADE,

EnrolmentNumber INT,

IsEstimated VARCHAR (3),

IsLastSemester VARCHAR (3)

);

**Sample Insert:**

INSERT INTO Enrolment VALUES(1,1,72,”NO”,”YES”);

INSERT INTO Enrolment VALUES(2,1,72,”YES”,”NO”);

INSERT INTO Enrolment VALUES(3,2,55,”NO”,”YES”);

INSERT INTO Enrolment VALUES(4,2,100,”YES”,”NO”);

INSERT INTO Enrolment VALUES(5,3,309,”NO”,”YES”);

INSERT INTO Enrolment VALUES(6,3,410,”YES”,”NO”);

**Session:**

﻿ ﻿CREATE TABLE Session (

SessionID INT PRIMARY KEY,

SessionName VARCHAR (50) UNIQUE,

SessionType VARCHAR (10)

);

**Sample Insert:**

INSERT INTO Session VALUES(1,”Lectures”,”NM”);

INSERT INTO Session VALUES(2,”F2F workshop”,”NM”);

INSERT INTO Session VALUES(3,”Online workshop”,”NM”);

INSERT INTO Session VALUES(4,”Laboratories”,”NM”);

INSERT INTO Session VALUES(5,”Lab extra coverage”,”NM”);

INSERT INTO Session VALUES(6,”Meetings”,”NM”);

INSERT INTO Session VALUES(7,”﻿Test invilgilation”,”NM”);

INSERT INTO Session VALUES(8,”Consultation”,”NM”);

INSERT INTO Session VALUES(9,”Demonstrator training”,”NM”);

INSERT INTO Session VALUES(10,”Project 1 Marking”,”M”);

INSERT INTO Session VALUES(11,”Project 2 Marking”,”M”);

INSERT INTO Session VALUES(12,”Exam Marking”,”M”);

INSERT INTO Session VALUES(13,”Practical session F2F”,”NM”);

INSERT INTO Session VALUES(14,”﻿Practical session online”,”NM”);

INSERT INTO Session VALUES(15,”Laboratory 2”,”NM”);

INSERT INTO Session VALUES(16,”﻿Laboratory 3”,”NM”);

INSERT INTO Session VALUES(17,”Workshop prep Marking”,”M”);

INSERT INTO Session VALUES(18,”Project prep Marking”,”M”);

INSERT INTO Session VALUES(19,”Exam Prep Marking”,”M”);

INSERT INTO Session VALUES(20,”Other”,”NM”);

INSERT INTO Session VALUES(21,”Practical sessions”,”NM”);

INSERT INTO Session VALUES(22,”Laboratory 1”,”NM”);

INSERT INTO Session VALUES(23,”Administration of AWS”,”NM”);

INSERT INTO Session VALUES(24,”Marking”,”M”);

INSERT INTO Session VALUES(25,”﻿Exam Invigilation”,”M”);

﻿INSERT INTO Session VALUES(27,"No Activities","NM");

INSERT INTO Session VALUES(28,"Workshops","NM");

﻿INSERT INTO Session VALUES(29,"Mtgs, consult and invigil.","NM");

INSERT INTO Session VALUES(30,"Training","NM");

**TeachingCode:**

﻿ ﻿CREATE TABLE TeachingCode (

TeachingCode INT PRIMARY KEY,

TeachingName VARCHAR (50)

);

**Sample Insert:**

INSERT INTO TeachingCode VALUES(1,”ORAA”);

INSERT INTO TeachingCode VALUES(2,”ORAA(Hons Degree”);

INSERT INTO TeachingCode VALUES(3,”ORAA(PhD”);

INSERT INTO TeachingCode VALUES(4,”None");

**Staff:**

﻿ CREATE TABLE Staff (

StaffID INT PRIMARY KEY,

TeachingID INT REFERENCES TeachingCode (TeachingCode) ON DELETE RESTRICT ON UPDATE CASCADE,

Name VARCHAR (50),

Position VARCHAR (30),

UNIQUE (

Name,

Position

)

ON CONFLICT FAIL

);

**Sample Insert:**

INSERT INTO Staff VALUES(1,4,"David Glance","Academic staff");

INSERT INTO Staff VALUES(2,4,"Rachel Cardell-Oliver","Academic staff");

INSERT INTO Staff VALUES(3,4,"Lyndon While","Academic staff");

INSERT INTO Staff VALUES(4,2,"Facilitator 1","Casual teaching");

INSERT INTO Staff VALUES(5,3,"Jingbo Sun","Casual teaching");

INSERT INTO Staff VALUES(6,4,"Guest Lecture","Other");

INSERT INTO Staff VALUES(7,2,"Manou Rosenberg","Casual teaching");

INSERT INTO Staff VALUES(8,4,"Casual 2","Casual teaching");

INSERT INTO Staff VALUES(9,4,"Casual 3","Casual teaching");

INSERT INTO Staff VALUES(10,4,"Casual 4","Casual teaching");

INSERT INTO Staff VALUES(11,4,"Casual 5","Casual teaching");

INSERT INTO Staff VALUES(12,4,"Casual 6","Casual teaching");

**Unit:**

﻿ ﻿CREATE TABLE Unit (

UnitID INT PRIMARY KEY,

UnitCode VARCHAR (10),

Semester INT (1),

Year INT (4)

);

**Sample Insert:**

INSERT INTO Unit VALUES(1,”CITS5503”, 2, 2020);

INSERT INTO Unit VALUES(2,”CITS4401”, 1, 2020);

INSERT INTO Unit VALUES(3,”CITS1101”, 2, 2021);

**Budget:**

﻿ ﻿CREATE TABLE Budget (

BudgetID INT PRIMARY KEY,

UnitID INT REFERENCES Unit (UnitID) ON DELETE RESTRICT ON UPDATE CASCADE,

Cost INT,

IsEstimated VARCHAR (3),

IsLastSemester VARCHAR (3)

);

**Sample Insert:**

INSERT INTO Unit VALUES(1,1,4691,”YES”,”YES”);

INSERT INTO Unit VALUES(2,1,6864,”NO”,”YES”);

INSERT INTO Unit VALUES(3,1,5561,”YES”,”NO”);

INSERT INTO Unit VALUES(4,1,1160,”YES”,”YES”);

INSERT INTO Unit VALUES(5,1,1094,”NO”,”YES”);

INSERT INTO Unit VALUES(6,1,6899,”YES”,”NO”);

INSERT INTO Unit VALUES(7,1,25813,”YES”,”YES”);

INSERT INTO Unit VALUES(8,1,26709NO”,”YES”);

INSERT INTO Unit VALUES(19,1,34286,”YES”,”NO”);

**OtherCost:**

﻿CREATE TABLE OtherCost (

OCID PRIMARY KEY,

NSCID INT REFERENCES NonSalaryCosts (NSCID) ON DELETE RESTRICT ON UPDATE CASCADE,

UnitID INT REFERENCES Unit (UnitID) ON DELETE RESTRICT ON UPDATE CASCADE

);

**Sample Insert:**

INSERT INTO OtherCost VALUES(1,1,1);

INSERT INTO OtherCost VALUES(2,2,1);

INSERT INTO OtherCost VALUES(3,3,1);

INSERT INTO OtherCost VALUES(4,4,1);

INSERT INTO OtherCost VALUES(5,5,1);

INSERT INTO OtherCost VALUES(6,6,1);

INSERT INTO OtherCost VALUES(7,1,2);

INSERT INTO OtherCost VALUES(8,2,2);

INSERT INTO OtherCost VALUES(9,3,2);

INSERT INTO OtherCost VALUES(10,7,2);

INSERT INTO OtherCost VALUES(11,5,2);

INSERT INTO OtherCost VALUES(12,6,2);

INSERT INTO OtherCost VALUES(13,1,3);

INSERT INTO OtherCost VALUES(14,2,3);

INSERT INTO OtherCost VALUES(15,8,3);

**Activities:**

﻿CREATE TABLE Activities (

ActivitiesID INT PRIMARY KEY,

UnitID INT REFERENCES Unit (UnitID) ON DELETE RESTRICT ON UPDATE CASCADE,

StaffID INT REFERENCES Staff (StaffID) ON DELETE RESTRICT ON UPDATE CASCADE,

SessionID INT REFERENCES Session (SessionID) ON DELETE RESTRICT ON UPDATE CASCADE,

HourlyRate INT,

Hour INT

);

**Sample Insert:**

INSERT INTO Activities VALUES(1,1,1,1,0,24);

INSERT INTO Activities VALUES(2,1,1,4,0,22);

INSERT INTO Activities VALUES(3,1,1,24,0,15);

INSERT INTO Activities VALUES(4,1,1,20,0,24);

INSERT INTO Activities VALUES(5,1,4,4,58,22);

INSERT INTO Activities VALUES(6,1,4,26,58,11);

INSERT INTO Activities VALUES(7,1,4,24,58,35);

INSERT INTO Activities VALUES(8,1,4,20,58,2);

﻿INSERT INTO Activities VALUES(9,2,2,1,0,24);

﻿INSERT INTO Activities VALUES(10,2,2,21,0,24);

INSERT INTO Activities VALUES(11,2,2,26,0,36);

INSERT INTO Activities VALUES(12,2,2,24,0,26);

INSERT INTO Activities VALUES(13,2,2,20,0,16);

INSERT INTO Activities VALUES(14,2,5,21,65,34);

INSERT INTO Activities VALUES(15,2,5,26,65,12);

INSERT INTO Activities VALUES(16,2,5,24,65,60);

INSERT INTO Activities VALUES(17,2,6,27,0,0);

INSERT INTO Activities VALUES(18,3,3,1,0,72);

INSERT INTO Activities VALUES(19,3,3,28,0,36);

INSERT INTO Activities VALUES(20,3,3,29,0,21);

INSERT INTO Activities VALUES(21,3,3,24,0,17);

INSERT INTO Activities VALUES(22,3,7,4,58,61);

INSERT INTO Activities VALUES(23,3,7,29,58,9);

INSERT INTO Activities VALUES(24,3,7,24,58,39);

INSERT INTO Activities VALUES(25,3,7,30,58,3);

INSERT INTO Activities VALUES(26,3,8,4,54,61);

INSERT INTO Activities VALUES(27,3,8,29,54,9);

INSERT INTO Activities VALUES(28,3,8,24,54,39);

INSERT INTO Activities VALUES(29,3,8,30,54,3);

INSERT INTO Activities VALUES(30,3,9,4,54,61);

INSERT INTO Activities VALUES(31,3,9,29,54,9);

INSERT INTO Activities VALUES(32,3,9,24,54,39);

INSERT INTO Activities VALUES(33,3,9,30,54,3);

INSERT INTO Activities VALUES(34,3,10,4,54,61);

INSERT INTO Activities VALUES(35,3,10,29,54,7);

INSERT INTO Activities VALUES(36,3,10,24,54,22);

INSERT INTO Activities VALUES(37,3,10,30,54,3);

INSERT INTO Activities VALUES(38,3,11,4,54,61);

INSERT INTO Activities VALUES(39,3,11,29,54,7);

INSERT INTO Activities VALUES(40,3,11,24,54,22);

INSERT INTO Activities VALUES(41,3,11,30,54,3);

**Problem:**

1. Data upper case and lower-case issue (Such as f2f F2F).

2. Special symbols ( Such as + - / )

3. Word with ‘s’ or not. (Such as laboratory / laboratories)

4. Non Salary Cost, for the same NSC Name, is the cost same for different units?

5. Different session names used in ‘Unit Structure” and “Resourcing” in the excel.

**Sample Queries:**

**1. List all staffs in all units, asl well as their Total cost on each session during the whole semester**

﻿ ﻿Select S.Name, U.UnitCode, U.Semester, U.Year, E.SessionName, A.HourlyRate\*A.Hour AS TotalCost

From Activities A JOIN Staff S USING (StaffID)

JOIN Session E USING (SessionID)

JOIN Unit U USING (UnitID)

JOIN OtherCost O USING (UnitID)

JOIN NonSalaryCosts N USING (NSCID)

**2. List the Total Cost for each Staff in one Unit**

﻿ ﻿Select S.Name, U.UnitCode, U.Semester, U.Year, SUM(A.Hour\*A.HourlyRate) AS TotalCost

From Activities A JOIN Staff S USING (StaffID)

JOIN Session E USING (SessionID)

JOIN Unit U USING (UnitID)

Group by S.StaffID

**3. List the total Staff cost and word load for each Unit**

﻿Select U.UnitCode, SUM(A.Hour) AS TotalLoad, SUM(A.Hour \* A.HourlyRate) AS StaffCost

From Activities A JOIN Staff S USING (StaffID)

JOIN Session E USING (SessionID)

JOIN Unit U USING (UnitID)

Group By U.UnitID

**4. List all the Non-Salary Costs for each Unit**

﻿Select U.UnitCode,N.NSCName, N.TotalCost

From OtherCost O JOIN NonSalaryCosts N USING (NSCID)

JOIN Unit U USING (UnitID)

Order by U.UnitCode

**5. List the Total Non-Salary Cost for each Unit**

﻿ ﻿Select U.UnitCode, SUM(N.TotalCost)

From OtherCost O JOIN NonSalaryCosts N USING (NSCID)

JOIN Unit U USING (UnitID)

Group by U.UnitID

**6. List the Total Non-Salary Cost and Staff Cost for each Unit**

﻿Select U.UnitCode, SUM(A.Hour) AS TotalLoad, U.Semester,U.Year,SUM(A.Hour \* A.HourlyRate) AS StaffCost,

(Select SUM(N.TotalCost)

From OtherCost O JOIN NonSalaryCosts N USING (NSCID)

JOIN UNIT Z USING (UnitID)

Where Z.UnitID = U.UnitID

Group by Z.UnitID) AS NonSalaryCost

From Activities A JOIN Staff S USING (StaffID)

JOIN Session E USING (SessionID)

JOIN Unit U USING (UnitID)

Group By U.UnitID