



## Application for the 2005 Larry L. Sautter Award For Innovation in Information Technology

### SUMMARY

Quick Temp <https://apps.adcom.uci.edu/expresso5/apps/components/quicktemp/login.jsp> is a web-based system designed to streamline the process of recruiting, processing payroll and invoicing departments for the use of temporary personnel. With the Quick Temp system this process is much more efficient enabling temporary employee requisition and management, timesheet submission, payroll processing, and electronic departmental invoicing. The result saves time, improves customer service, and integrates into existing campus infrastructure. Quick Temp benefits three groups: The temporary staff (more than 125 on board at any given time), the payroll processor and recruiters in Human Resources, and the client departments who use the temporary services.

### PROJECT DESCRIPTION

The Campus Temporary Employment Services (CTES) is the Human Resources unit at the University of California, Irvine that recruits, interviews and hires qualified candidates for temporary positions at the campus and Medical Center. CTES also processes the payroll for these employees and then invoices the department where the employee is placed. Invoicing includes salary, benefits costs, and an administrative service fee. CTES has an average payroll of 125 temporary employees and is experiencing a steady increase due to fluctuations with departmental budgets and growing transitional workforce needs.

CTES recognized the need to automate and streamline the entire business process, due to increased demands for their temporary staff services and the greater complexities with recruiting and placing temporary staff.

Prior to developing our solution, the following problems were identified:

- Requests for temporary staff were called in and managed by phone. High call volumes led to delays and miscommunications and delays in returning calls.
- An assessment/skill level rating for each temporary employee was kept in a separate spreadsheet and was not accessible to all recruiters prior to offering a job assignment.
- Temporary employees completed a paper biweekly timesheet in order to get paid. Their department supervisor signed the timesheet prior to payroll deadline, and CTES received timesheets via fax or inter-office mail. This delayed the payroll process because timesheets were lost or not received on time.
- The CTES payroll coordinator calculated work hours (sick, vacation, holiday) from the submitted timesheet and then manually entered these numbers into the payroll system. The duplication of data entry was subject to error.
- The CTES payroll coordinator manually calculated the work accruals and then generated a paper invoice to the hiring departments. This process took approximately 32 hours each month.
- Reports demonstrating compliance with union contracts were difficult to produce. Historical reporting was not supported.

As a result, CTES partnered with UCI's Administrative Computing department to develop or purchase a technology solution to simplify the process.

We reviewed vendor solutions, which addressed some of our functional needs. Our concerns about these vendor solutions included:

- Vendors didn't thoroughly understand or design for the business requirements from the campus business unit perspective. We found that some of their business processes required a prohibitive amount of administration and introduced multiple steps where there should be a simple, single step.
- high integration costs with the campus ledger system
- high integration costs with the campus payroll system
- lack of flexibility in supporting campus business rules. For example, vendors did not support business rules specific to validation of timesheets against collective bargaining unit policy.
- inability for hiring managers to have easy access to request a temp via the campus business portal
- inability to integrate with the campus workflow system
- vendor solutions didn't integrate with the campus authentication, authorization, and user management infrastructure, requiring yet another set of passwords and user accounts to be managed for the entire campus population when requesting a temporary employee.

Integration, integration, and integration – those were costs we started to calculate with vendor products.

After a nine-month evaluation process, confronted by many obstacles with the purchased software, we decided to build a system. The partnership between CTES and the Administrative Computing department resulted in the development of a system that streamlined and automated all CTES processes. The project goals were to:

- eliminate manual processes
- reduce time spent invoicing and tracking employee activities
- simplify the management process for CTES staff and hiring departments
- automate the process of timesheet completion for temporary staff
- improve customer satisfaction.

The following comparison shows improvements in major functions of the process:

	<b>Previous Manual Process</b>	<b>Vendor Solution</b>	<b>Quick Temp Current, Built Process</b>
User Access	Paper	Single URL	Campus Portal access point.
Recruitment Tracking	Paper, stand alone Excel spreadsheets	Reporting required as a bolt-on solution	Integrated reporting with a real time database
Timesheet	Timesheets submitted via fax, campus mail, or U.S. mail	On-line timesheet with only traditional leave reporting	On-line timesheet that validates against business rules governing employment and union contracts.
Payroll	Manual Payroll processing – 32 hours to complete	No change	Online payroll processing – 2 hours to complete
Ledger	Invoicing Departments – paper process, 24 hours to complete	Invoicing would not adhere to campus financial account structure.	Invoicing Departments – electronically, 15 minutes to complete
User Account Management	None	Proprietary	Uses campus single-sign on solution and directory services

## **DESCRIPTION OF THE SOLUTION: The Quick Temp project had six phases:**

### **Phase 1 – Temporary Request**

A Web-based form was developed for hiring managers to request a temporary employee from CTES. Once the hiring department completed the one-page, web-based requisition and submitted the form, it was automatically sent to the CTES recruitment staff. In addition, this simplified the recruitment process and eliminated errors.

### **Phase 2 – Recruitment Tracking**

Quick Temp streamlined the workload for the CTES recruiters allowing them to quickly identify temporaries who are available for a job.

Once assigned to a request, temporary employees can access their information through the University's SNAP portal (Simple Navigational Administrative Portal). From the outset, Quick Temp was designed to reuse campus-wide infrastructure, such as authentication and the portal.

### **Phase 3 – Web-based Timesheet**

Using an account assigned by the campus authentications system, the temporary employee logs on to the timesheet. The timesheet tracks and displays accrued vacation and sick time balances, and also allows a review of previously submitted timesheets.

### **Phase 4 - Payroll Process**

Per campus payroll rules and union contracts, Quick Temp automatically calculates and separates hours the temporary employee reported such as work hours, vacation, sick time, and holiday hours.

### **Phase 5 – Departmental Invoices**

Automation of Phases 1 through 4 led to the design of an electronic invoice that is forwarded to hiring departments and financial offices. The invoice links to the campus ledger and to the temporary employee's timesheets allowing departments to track and keep records for future reference.

### **Phase 6 – Management Reports**

Reports can be generated and downloaded to Excel or Access to show trends, volume, usage, and productivity, cost analysis or other management requests.

### **Outcomes and Achievements:**

The activities of the temporary employee are integrated through Quick Temp into the larger university infrastructure enabling the temp to function with all the privileges of a typical employee and allowing departments and recruiters to automatically track and review the temporary employee's timesheet data. Without customization, a vendor solution would have prevented this outcome as a proprietary and un-integrated solution.

The timesheet application is modular and is sensitive to various collective bargaining unit rules and policies. With the addition of a new calculator module the timesheet can be adjusted to specific bargaining unit business rules. There were no vendor products that could be customized to collective bargaining unit time collection business rules.

The ability to get the temporary employee's timesheet and the invoice statement electronically has saved time when reconciling general ledgers. Departments no longer have to file numerous paper timesheets and invoices.

These are the error categories that could occur within any part of the process. Within these categories there were many additional errors or problem that could and did occur. These included:

1. Incorrect information when the temporary request was taken
2. Timesheet being lost or incorrect
3. Payroll errors – calculations incorrect or inconsistent
4. Invoicing errors – incorrect data
5. Financial errors – incorrect accounts, manual adjustments

All 5 of these error categories have been resolved with the implementation of Quick Temp. Quick Temp provides checks and balances to ensure efficiency and accuracy during all phases of the process. Due to the limited amount of human entry, the error rate for these procedures has been reduced 75%.

## **IMPORTANCE OF RELEVANCE TO OTHER INSTITUTIONS**

After an extensive evaluation, the choice to build a solution became clear. The campus infrastructure and integration costs as well as ease of use by hiring managers were clearly favoring the build outcome. This case study can be used to identify and calculate costs for other build vs. buy decisions.

UC Irvine has received interest in using this application from other departments on campus who hire transitional workers. Others who use this application can tailor it by plugging in a new calculator module to adjust the timesheet to their specific bargaining unit business rules.

## **TIMEFRAME OF IMPLEMENTATION**

Quick Temp was implemented in 6 various phases. The entire implementation was completed over a 12 month period.

## **TECHNOLOGY USED IN THE PROJECT**

The application was implemented using Web and Java technology running on Sun hardware and the Microsoft SQL Server database. The application is designed as a Model/View/Controller using the open source jCorporate Expresso Java Application Development Framework. Apache Web Server and Tomcat technologies combined with standardized GUI templates implemented with XML, CSS, and DHTML offer an intuitive Web front-end.

QuickTemp and Timesheet rely on the campus business portal SNAP (Simple Navigational Administrative Portal) as a central point of access and for single-signon. SNAP contains a channel designed especially for temporary employees and utilizes the open source uPortal technology from the JA-SIG organization. User profiles, roles, and identity management is based on a directory service running in openLDAP. OpenLDAP is University of Michigan's open source Light Weight Directory Access Protocol implementation.

Integration to the IBM Legacy Ledger and Payroll systems is done via the Campus Data Warehouse (DWH). We have a sophisticated set of Java business objects that are used for extracting information that drives the timesheet including appointment and distribution data corresponding to an individual's pay, allowed hour types, and vacation and sick leave balances.

Authorization to use the application is implemented using SAMS (Security Access Management System), a system built in Java to support campus de-centralized security access management. Access authorization is delegated to security officers in campus departments.

Monthly invoicing using PDF is implemented with the open source Java iText component and sophisticated reports are automatically generated from the QuickTemp database using Microsoft Excel technology.

All technology used to implement the system is freely downloadable and can be reused across other campuses.

## **CUSTOMER SATISFACTION**

Every year, a customer survey is administered to all users of Human Resources and Administrative Computing Services functions. One of the questions that is asked is "What unit in Administrative and Business Services has the best track record of consistently improving practices?" An additional question asked is "How consistently does Human Resources meet customers overall expectations?" We are pleased to say that the Employment Unit/Campus Temporary Employment Services scored the highest in these categories. Our customers appreciate Quick Temp in that it significantly saves them time and it's easy to use. These are our major simplification goals and principles.

We regularly receive unsolicited feedback from our clients such as – “this system saves us so much time, the timesheets are linked right to the invoice – it’s great.”

In addition, other UC Campuses who have temporary staffing groups have viewed the Quick Temp system and are interested in implementing this at their location.

Quick Temp has been presented at national and regional conferences as a best practice technology solution. The Regional Educause Conference and recently at the CUMREC conference in Keystone Colorado.

## **CONCLUSION**

Faced with a very time consuming and labor intensive process, which was extremely error prone, UC Irvine successfully designed and implemented Quick Temp to streamline and improve a 20-year old manual process. In addition, Quick Temp has met all the campuses needs in terms of ease of use, minimizing approvals, a web-based paperless system, and improved customer satisfaction. In production now for one year, Quick Temp has proven to be an innovative IT solution that successfully meets many critical campus business needs and can be tailored to be used in other departments with similar payroll and invoicing needs.

## **PROJECT TEAM MEMBERS**

Elaine Peters, Human Resources, Project Team Leader  
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Jane Gao, Administrative Computing Services

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## **RELEVANT INFORMATION:**

- Appendix A - Process Improvement Measurements
- Appendix B - Quick Temp Login for Temporary Employees – through SNAP
- Appendix C - Quick Temp Application Login
- Appendix D - Timesheet
- Appendix E - Timesheet Approval Screen
- Appendix F - On-Line Process Flowchart

Eight step directions for Quick Temp creators

[https://apps.adcom.uci.edu/expresso5/apps/components/quicktemp/webdoc/user\\_guide.jsp](https://apps.adcom.uci.edu/expresso5/apps/components/quicktemp/webdoc/user_guide.jsp)

Frequently Asked Questions

<https://apps.adcom.uci.edu/expresso5/apps/components/quicktemp/webdoc/faq.jsp>

Quick Temp New Request Screen

<https://apps.adcom.uci.edu/expresso5/quicktemp/QtManager.do?state=promptNewRequest>

## Appendix A – Process Improvement Measurements

	<b>Before Quick Temp</b>	<b>After Quick Temp</b>
<b>Number of Steps</b>	<b>22</b>	<b>5</b>
<b>Time to Process Payroll</b>	<b>72 hours</b>	<b>2 hours</b>
<b>Invoicing to Clients</b>	<b>48 days</b>	<b>15 minutes</b>
<b>Medium</b>	<b>Paper</b>	<b>Web</b>
<b>Recruitment Tracking</b>	<b>Paper</b>	<b>Web with real time database</b>
<b>Customer Satisfaction</b>	<b>Poor</b>	<b>Excellent</b>

## Appendix B – SNAP Login

SNAP - Mozilla Firefox

File Edit View Go Bookmarks Tools Help http://snap.uci.edu/render.userLayoutRootNode.u

**SNAP** UC Irvine  
Simple Navigational Administrative Portal

Welcome Warren Liang Search:  SNAP Phonebook

Main Applications People Money Buying Travel Facilities Safety Technology week

**Personal Profile**

- ◆ Leave/Vacation Balances
- ◆ Systems Access
- ◆ ZotCode
- ◆ ZotMail
- ◆ What to look for in the future:
  - ◇ Vacation/Leave Dates
  - ◇ Supervisor

**CTES Employees**

- ◆ **Timesheet**
- ◆ Pay Schedule - 2005
- ◆ Newsletter
- ◆ CTES Handbook
- ◆ Union Contract
- ◆ Access to applications
- ◆ Staff Holidays
- ◆ CTES Staff Listing

**Campus News**

- ◆ UC Irvine Home Page
- ◆ UC Irvine Virtual Tour
- ◆ Today@UCI
- ◆ Today@UCI Calendar

**Local Weather**

Irvine, CA  
61 °F

**SNAP News**

What's new in SNAP as of February, 2005



- ◆ You legally changed your name
- ◆ UCIBuy - Strategic Sourcing. 5 prices.
- ◆ Calculate your retirement or y
- ◆ Find payroll calendars and mo

SNAP is now in general use and more content is being added

**Bookmarks**



**About SNAP**

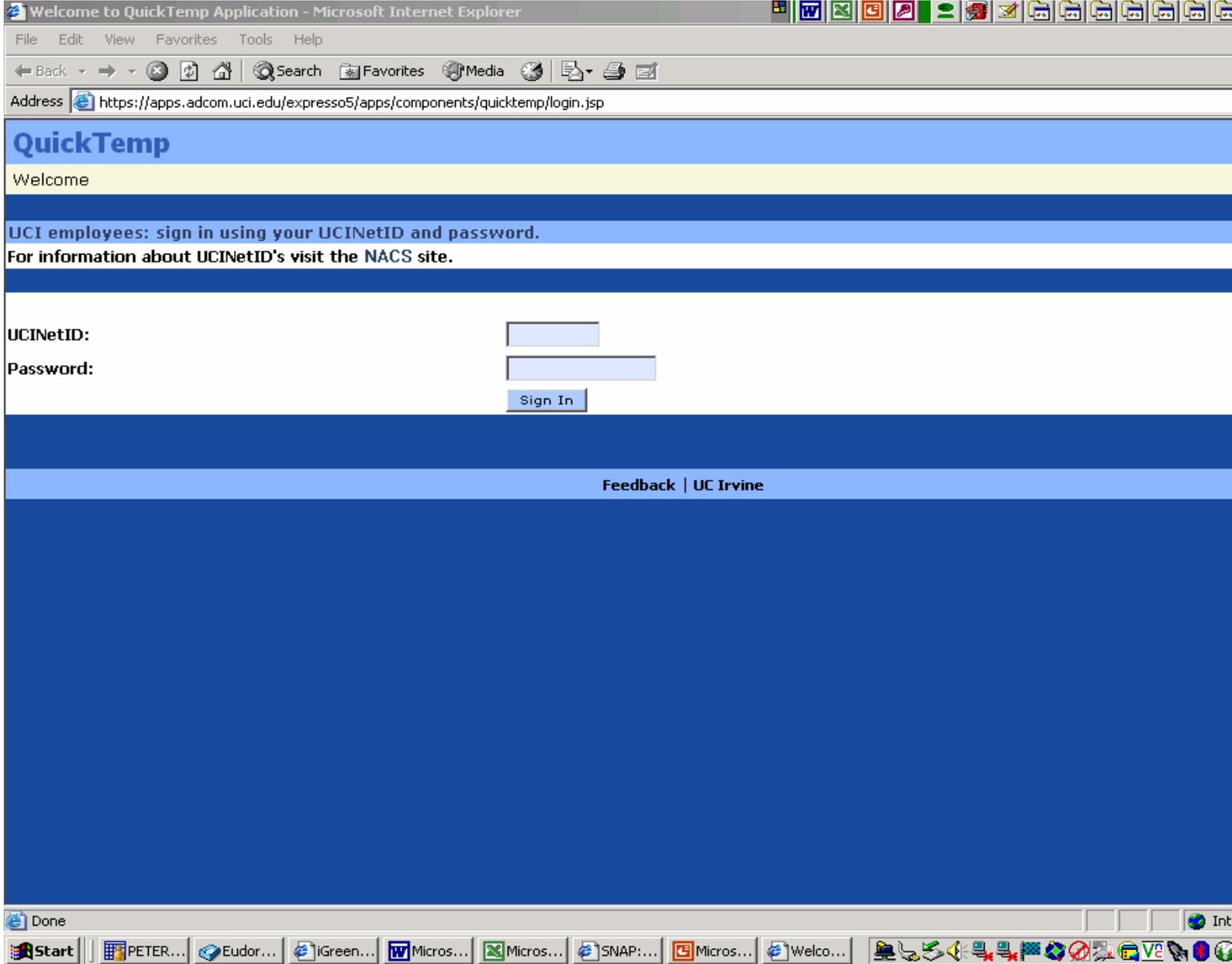
SNAP is a web portal for you to find all information related to can access your business transactions and many useful resources

- ◆ **Intro to SNAP Presentation**  
Our first Forum presentation
- ◆ **SNAP Content Growth Progress Chart and Plans**  
Content related progress chart and Excel project plans.
- ◆ **Content Provider? Want to partner in the SNAP vision?**  
Information, guidelines and templates for growing SNAP c
- ◆ **More about SNAP**  
Portal background, technical details, etc.

**Word of the Day**

◆ **Word of the Day** is presented every day with its definition and ...

# Appendix C – Quick Temp Application Login



# Appendix D – Timesheet

3 Timesheet for pay period of 02/13/2005 - 02/26/2005  
 This timesheet must be submitted by Monday, February 28, 2005 at 12:00 PM

2 Pay Periods:  
Request:  
View:

1 Vacation Leave Balance: 138.47 Hours Sick Balance: 140.82 Hours
4

Week 1	QT #/Dept.	Clock In	Lunch Out	Lunch In	Clock Out	Sick	Vacation	Other	Total
Sun 02/13	/ Normal Job Hours	<input type="text"/> am	<input type="text"/> pm	<input type="text"/> pm	<input type="text"/> pm	<input type="text"/>	<input type="text"/>	<input type="text"/>	0
Mon 02/14	/ Normal Job Hours	<input type="text"/> am	<input type="text"/> pm	<input type="text"/> pm	<input type="text"/> pm	<input type="text"/>	<input type="text"/>	<input type="text"/>	0
Tue 02/15	/ Normal Job Hours	<input type="text"/> am	<input type="text"/> pm	<input type="text"/> pm	<input type="text"/> pm	<input type="text"/>	<input type="text"/>	<input type="text"/>	0
Wed 02/16	/ Normal Job Hours	<input type="text"/> am	<input type="text"/> pm	<input type="text"/> pm	<input type="text"/> pm	<input type="text"/>	<input type="text"/>	<input type="text"/>	0
Thu 02/17	/ Normal Job Hours	<input type="text"/> am	<input type="text"/> pm	<input type="text"/> pm	<input type="text"/> pm	<input type="text"/>	<input type="text"/>	<input type="text"/>	0
Fri 02/18	/ Normal Job Hours	<input type="text"/> am	<input type="text"/> pm	<input type="text"/> pm	<input type="text"/> pm	<input type="text"/>	<input type="text"/>	<input type="text"/>	0
Sat 02/19	/ Normal Job Hours	<input type="text"/> am	<input type="text"/> pm	<input type="text"/> pm	<input type="text"/> pm	<input type="text"/>	<input type="text"/>	<input type="text"/>	0
Weekly Total:									0
Week 2									
Week 2	QT #/Dept.	Clock In	Lunch Out	Lunch In	Clock Out	Sick	Vacation	Other	Total
Sun 02/20	/ Normal Job Hours	<input type="text"/> am	<input type="text"/> pm	<input type="text"/> pm	<input type="text"/> pm	<input type="text"/>	<input type="text"/>	<input type="text"/>	0
Mon 02/21	☺ This is a holiday. Please enter hours only if you actually worked on a holiday. Your holiday hours will be computed automatically.								
Tue 02/22	/ Normal Job Hours	<input type="text"/> am	<input type="text"/> pm	<input type="text"/> pm	<input type="text"/> pm	<input type="text"/>	<input type="text"/>	<input type="text"/>	0
Wed 02/23	/ Normal Job Hours	<input type="text"/> am	<input type="text"/> pm	<input type="text"/> pm	<input type="text"/> pm	<input type="text"/>	<input type="text"/>	<input type="text"/>	0
Thu 02/24	/ Normal Job Hours	<input type="text"/> am	<input type="text"/> pm	<input type="text"/> pm	<input type="text"/> pm	<input type="text"/>	<input type="text"/>	<input type="text"/>	0
Fri 02/25	/ Normal Job Hours	<input type="text"/> am	<input type="text"/> pm	<input type="text"/> pm	<input type="text"/> pm	<input type="text"/>	<input type="text"/>	<input type="text"/>	0
Sat 02/26	/ Normal Job Hours	<input type="text"/> am	<input type="text"/> pm	<input type="text"/> pm	<input type="text"/> pm	<input type="text"/>	<input type="text"/>	<input type="text"/>	0
Weekly Total:									0

5 Notes: 3

**I understand any misstatement or falsification of hours on this time sheet may be cause for disciplinary action up to and including termination.**

If you have any questions, please contact the CTES Payroll Coordinator at (949) 824-1355 for assistance.

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## Appendix E – Timesheet Approval Screen

QuickTemp
Home | Help | Logout

Welcome Warren
February 16, 2005

Recruiter Use New Request Previous Requests Billing/Time Sheet Maintenance Employee Profile Help Docs

Agency Time Sheet **Time Sheet Approval** Time Sheet View PPS Update Monthly Billing View Customer Bill Email Billing Contacts Manual Adjustment

Time Sheet Approval

Display all time sheets

Name	Pay Period	Cycle	Tot. Hrs.	Reg.	O.T. Std.	O.T. Pre.	Vac./Acc.	Sick/Acc.	Hol.	Oth.	Status	Approved?
DOE, ADAM	1 01/16/2005 - 01/29/2005	B2	80.0	72.0	0.0	0.0	0.0 / 5.86	8.0 / 23.89	8.0	0.0	SUBMITTED 02/01/2005 04:15 PM	2 <div style="border: 1px solid #4F81BD; padding: 2px; width: fit-content;"> <span>Do Nothing</span> <span style="background-color: #4F81BD; color: white; padding: 2px;">Do Nothing</span> <span>Approve</span> <span>Final Check</span> </div>
	3 6001651: REN: 80.0 SKL: 8.0											
	4 Holiday Calculator Status B1 Pay Status Hours: 80.0 B2 Pay Status Hours: 80.0  B1 holiday DOS hour information 6001651: B2 holiday DOS hour information 6001651: OTS: 8.0											
CLINTON, BILL	01/30/2005 - 02/12/2005	B1	8.0	8.0	0.0	0.0	0.0 / 0.00	0.0 / 0.00	0.0	0.0	SUBMITTED 01/31/2005 12:38 PM	Do Nothing
	6001675: REN: 8.0											
DOE, JANE	01/30/2005 - 02/12/2005	B1	8.0	8.0	0.0	0.0	0.0 / 34.31	0.0 / 30.75	0.0	0.0	SUBMITTED 02/02/2005 09:41 AM	Do Nothing
	5 Note by: Jane Doe at 2005-02-02 09:40:38 I have been hired by the Samueli Center for Integrative Medicine (my temp position) as of yesterday Feb. 1, 2005. Please let me know if I need to complete any other paperwork for Temp Services. Thank you very much.											
	6001609: REN: 8.0											

Update Records
Cancel
Reset

Feedback | UC Irvine

# Appendix F – On-line Process Flow Chart



Quick Temp System

Timesheet WorkFlow Chart  
Employee

