



OE RESOURCE REQUEST APPLICATION

University of California, Berkeley

I. SPONSORSHIP

A. Initiative

Initiative	Student Services Technology		
Initiative Manager	Laura Willoughby		
Phone		E-Mail	lwilloughby@berkeley.edu

B. Sponsorship

Sponsor Name	Harry Le Grande		
Sponsor Signature		Date	
Sponsor Name	Erin Gore		
Sponsor Signature		Date	
OE Program Office Signature		Date	

C. Give the title of the resource

Analysis of Consolidated Financial View (CFV) for Students
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II. PROBLEM STATEMENT/CASE FOR CHANGE

A. Identify and describe what needs the proposed solution is seeking to address.

1. Students lack a consolidated view of fees, financial aid, and payments, and thus are misinformed*.

All students are billed for registration fees and a variety of other educationally related charges for attending school. A majority of students receive some sort of financial assistance (e.g., scholarships, fellowships, loans) to help pay for the charges assessed by the campus, as well as outside costs (e.g., books, off-campus housing). There are several online sources that display a student's financial activity, which cause confusion regarding how web sites relate to each other and prompt questions about data integrity. Additionally, expenses for other auxiliary services (e.g., parking permits, Cal 1 Card deposits, library fines) are outside the current financial systems/processes therefore students lack a streamlined view of "how much it costs to go to school." This results in a significant amount student and staff time being spent diagnosing billing and payment issues instead of resolving them. Students often misinterpret these different financial web sites and thus are misinformed about their finances.

*To experience this problem first hand, please turn to Addendum #1

2. Websites are not updated at the same frequency thus the timing of transactions leads to miscommunication with students.**

Due to the inconsistent and delayed information about financial activities, students do not know or understand what action, if any, they need to take. The financial activity can change daily (e.g., new charges assessed to the billing account, awards eligible for disbursement). Selected information is displayed online the same day, but the billing statement is updated monthly. Students are receiving different information from different websites and this leads to major miscommunications regarding what action a student should be taking. The current displays do not provide sufficient up-to-date details for the students to understand the activity or to know if there is a problem/action that needs their attention.

**For a visual description of this problem, please turn to Addendum #2

3. Third-party supporters⁺ lack a consolidated and real-time view of students' financial activities.

Many third-party supporters (designated by the student) assist students with applying for financial aid and paying for educational expenses. Currently, they cannot see billing, payment or award disbursement activities between monthly statements. Similar to students, third-party payers would like one web site through which they can access real-time and complete financial information.

⁺Parents, grandparents, guardians, or other people supporting students' educational efforts as authorized by the student.

B. Describe the solution that is being proposed to meet the identified need(s).

This proposal is for funding for staffing to conduct domain and systems analysis, the first six (6) months of a multi-year effort. This 6-month funding will serve to inform a detailed project plan that, when executed as a future project, will improve the student financial online experience. During this work-planning phase the following roles are required:

Consolidated Financial View Team

Functional Business Analyst: Dedicated functional analyst with expertise in user research, use case development, and student financials.

Technical Business Systems Analyst: Dedicated technical analyst with expertise in data transformation & integration, data analysis, and student systems analysis & design.

Student Engagement Consultant: The importance of student participation cannot be underestimated here. Utilizing a recently graduated student full time for 6 months to serve, as a dedicated student liaison will help plan, coordinate and conduct a coordinated student engagement and outreach effort. This is key to collecting quality information and driving the design. Student involvement will be central to keeping the analysis in line to achieving the goal of better serving the needs of students. There is potential to leverage an existing student liaison from the SSTI team for this role.

Solution Approach

Use Case Development. A set of core representative use cases will be developed at the outset and will serve as the foundation for the analysis process. Initial analysis conducted in November 2012 indicates that most billing confusion is related to one of 3 primary scenarios:

1. A 3rd party action has happened, but it is not reflected online as the student expects.
E.g. A student expects a tuition adjustment reflected on her account since her in-state residence status was confirmed last week
2. Something has happened that triggered a change in a student's aid packaging, and she now cannot comprehend her account activity.

*E.g. Student gets outside scholarship; this triggers their financial aid getting repackaged, and the student not receive money that he expected.**

3. A student is unsure about her account status, is she responsible for all of the charges on her bill, will any awards be disbursed in the near future? He worries about being charged late fees.

E.g. A grad student wonders why her fee remission hasn't been paid. Is she responsible for any part of her account balance?

*Please refer to Addendum 1 for an example of this use case.

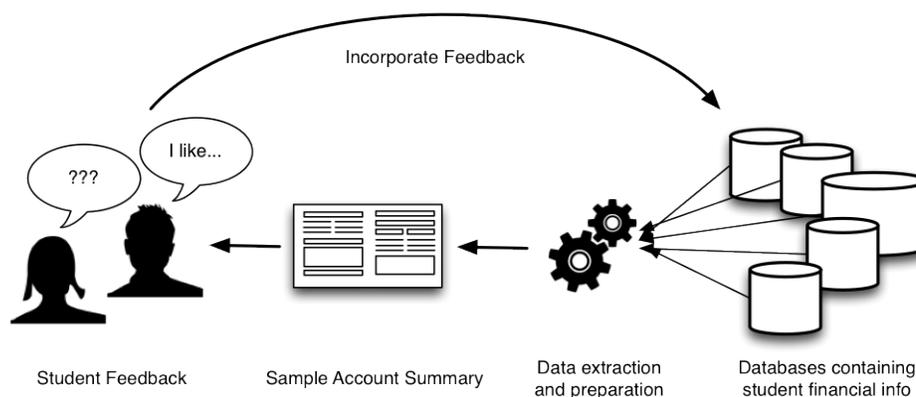
The above 3 scenarios will be further refined in the contexts of:

- Financial Aid
- Housing & Dining
- Registration (including residency, registration status)
- Graduate Fellowships and Appointments
- Auxiliary Services

Information Design and Data Analysis. Each use case will drive financial account summary and monthly statement design. The information described in each scenario will be decomposed into data elements that flow through Berkeley's student financial systems. Systems analysis will be conducted to determine where the data must be sourced from and how the data must be organized and presented in order to achieve easy-to-comprehend results.

Please refer to Addendum #3 for an illustration of the systems on campus that contain student financial information

Iterative Student Engagement. A key component of the analysis effort is student engagement, which will provide a mechanism for validating the information design and will also drive the focus of systems analysis. Students who serve as the real-life examples of the use cases defined, will be recruited and will be presented with data designs related to the students' circumstances. The student feedback will identify gaps/errors in use case definition, and will trigger further information design and systems analysis in preparation of the next iteration, and so on.



Solution Result. The analysis effort will result in the delivery of artifacts required to develop a detailed project plan for the implementation of a consolidated financial view: detailed use case documentation, an entity relationship diagram, a logical data model, a data transformation specification, etc. Please refer to Section IV WORK PLAN AND PROPOSED SOLUTION DESIGN (on page 5 below) for more details on this project's deliverables.

- C. Describe the alternate approaches you evaluated in the process of developing this proposal and why those alternatives were not selected.

Maintain Status Quo. Student Financial Data can continue to be presented on multiple different web pages. To minimize confusion due to timing and delays, websites could be coordinated to update on a standard day of the week/month. This would have to be a concerted effort among each functional office responsible for specific financial data (e.g. Billing and Payment Services, the Financial Aid and Scholarships office, Graduate Division, Registrar's Office). Students can continue to attempt to integrate and understand the data on their own or call the individual offices for explanation.

Pro:

- No fiscal investment required
- Minimal staff time needed to coordinate minimizing timing disparities between websites

Con:

- Maintaining multiple websites is costly and inefficient
- Fails to address miscommunications and student expectation of information that is accurate
- Fails to provide students with a consolidated financial view in one place
- Fails to integrate disparate pieces of information to form an overall financial picture for the student and provide them with sufficient information to understand what action is necessary
- Fails to reduce the burden on staff to answer questions that could be easily resolved with a consolidated view

III. IMPACT AND STRATEGIC ALIGNMENT

- A. Describe how the proposed solution aligns with the OE goals:
- Reduce administrative costs and enable the campus to direct more resources to teaching and research
 - Advance an effective and efficient operating environment
 - Instill a culture of continuous improvement that leads to high quality performance and outcomes

The CFV analysis sponsors have identified a number of core values and objectives

- **Operational excellence:** lowering the cost of serving students while increasing service quality and functionality by providing students with enough information to understand and manage their educational finances
- **Service quality:** supporting the complex transactional academic, administrative, and campus life needs of students through well-designed self-service and self-directed online systems.
- **Access, Service & Engagement:** improving the student experience and fostering student success.

- B. Identify any other anticipated benefits in implementing the proposed solution.

This project will facilitate the analysis necessary to deliver a consolidated financial view to students in a well-orchestrated and cost effective manner. Benefits of this approach include:

- A more informed implementation project plan, risk assessment and scope definition
- Better utilization of technical and business analyst resources

- C. Identify the risks of not implementing the solution.

The primary risk of not implementing the proposed integrated planning phase is the delivery of an incomplete solution that may not achieve the overall goal of making it easier for students to track their campus finances. Additionally, without this approach, the following could be expected:

- Lack of coordination across campus in addressing this problem
- The duplication of resources and efforts
- Sub-optimal decision making on solutions

D. Describe the constituency that is intended to benefit from the proposed solution (e.g. students, faculty, staff, 1-many units)

- The future project team responsible for the implementation of a consolidated financial view will benefit most from the information gathered and the recommendations put forth by the CFV Analysis Team.
- The campus at large will benefit from increased knowledge of financial data flows, systems of record and their dependencies, and documentation of student needs and goals

E. Describe the extent to which this proposed solution is a collaborative effort either within campus or with external partners.

This project is complimentary to an existing OE effort, the EDW Student Financials project, which will load student financial data into the Enterprise Data Warehouse for institutional analysis and planning. Providing a Consolidated Financial View to students is distinct from the EDW Student Financial project in that it addresses problems with the presentation of ongoing charges/credits/adjustment information to students and their parents whereas the EDW project is focused on business intelligence and institutional reporting. There are significant opportunities for collaboration between the CFV and the EDW teams in understanding the data in CARS and other campus financial systems of record.

This project is also an opportunity to collaborate with the CalCentral team whose goal is to surface financial information for student. It is assumed that CalCentral developers will consume deliverables that emerge from this project.

Because student financial data is distributed across campus and resides in a variety of systems owned by Registrar's Office, Financial Aid and Scholarships Office, Graduate Division, the student's academic or hiring department, Housing/Dining Services, the Billing and Payment Services office, the analysis of this domain will require collaboration across these units through partnerships with technical SMEs who manage the data and staff who troubleshoot students' billing issues.

Finally, this project presents a significant opportunity to build upon existing campus student engagement models and foster an ongoing partnership between staff and students that is sustainable and successful.

F. If applicable, describe how the proposed solution may enable additional projects to be considered.

The analysis conducted during this project can be leveraged by any efforts related to replacing the campus Student Information System.

G. What is the impact of the proposed solution on the existing systems and processes? Does it eliminate the need for existing systems and processes?

The proposal is to perform a detailed planning phase and does not directly eliminate existing systems per se.

H. What is the impact on the proposed solution on the workload?

This proposal is to perform an integrated detailed planning phase for an implementation project to deliver a consolidated financial view for students. As a result, the individual workloads will not be impacted until the implementation project work is realized.

IV. WORK PLAN AND PROPOSED SOLUTION DESIGN

A. Provide a statement of:

- Deliverables — results the solution must deliver to achieve the stated objectives.
- Constraints — factors that may limit the options for providing the solution (*e.g., an inflexible deadline*).

Deliverables

- 10-20 detailed use cases representing the scenarios that would be addressed by consolidating the student's financial view.
- An entity relationship model for the domain – a representation of the entities within scope of the analysis and their relationships
- A logical data model – a graphical representation of the data within scope: tables, fields & relationships
- An ETL specification - a logical description of how to extract, transform, and load the data
- A data presentation specification – for each use case, a description of the data to be presented, its currency, level of detail, groupings, etc.
- Recommendations for changing business processes and business rules in order to improve the data presentation to students

Constraints

- Inadequate or interrupted source data access
- System limitations on data extraction and data quality

B. Provide a work plan for the proposed solution with high-level steps to complete the solution, including timeline. (Try to limit your plan to no more than seven steps.)

	MILESTONE	TIMELINE
1.	Use Case Development: Interviews, observations	January – February 2012
2.	Data Analysis Set Up: Establish data access, get familiar with data	January – February 2012
3.	Student Engagement Set Up: Recruit and organize students	January – February 2012
	Iterate as rapidly as possible in 4, 5 & 6 below	
4.	Information Design : what data should be surfaced	March – June 2012 (to be adjusted based on the start date of the project)
5.	Systems/Data Analysis : where to get that data	
6.	Test with Students and capture feedback	

C. What are the data requirements for the proposed solution?

Query-able access to the following campus systems (and any others that emerge during the Set Up period):

1. Department Student Awarding System (DSAS)
2. Graduate Division Awarding System (GLOW)
3. Financial Aid Systems (myFinAid, ProSAM)

4. Human Resource system (HCM)
5. Campus Accounts Receivables System (CARS)
6. BearFacts
7. In-house department tracking/shadow systems
8. BFS Accounts Payable
9. Glacier (International student tax withholding)

D. What are the technical requirements for the proposed solution?

- Data analysis tools
- Access to technical SMEs
- Access to technical documentation
- Access to the data itself

E. What are the greatest risks for the proposed solution and the plan to reduce or eliminate the risks.

	RISK	MITIGATION PLAN
1.	Resource availability	The timeline will be adjusted based on the availability of team resources
2.	Limited and insufficient access to SMEs	The busiest/most critical time of year varies among business units (e.g. March/April is the busiest for Financial Aid while mid-July through mid-September is the most critical period for CARS). Even during off-peak times of the year, key SMEs may be dedicated to solving operational problems and may be unavailable to project members. If team members are required to develop their own expertise in lieu of transfer of SME knowledge, the project timeline may have to be adjusted.
3.	Limited and insufficient access to students	Proper incentives to compensate for student time will minimize this risk. Use of social media and engaging key student leaders to assist in the recruitment and outreach to students will further mitigate issues with access to students.
4.	Quality deliverables cannot be generated within expected time and budget	The project sponsors and stakeholders should prioritize output to meet the timelines or to extend the duration to achieve greater clarity and desired deliverables quality.
5.	Inability to acquire data access	Sponsors to send a message to data gatekeeper(s) requesting access on behalf of the business analysts

F. How does the proposed work plan allow for evaluation and course correction to ensure the outcomes meet the campus needs?

- Frequent Executive check-ins and progress reports
- Frequent iterations of key requirements and design based on student engagement
- Project work plans, and project approach artifacts (e.g. resourcing plans, risk plans, assessment plans) which will be reviewed by other campus project management experts to leverage expertise and know-how
- Buy-in from students at large and staff in key departments affected

V. CHANGE MANAGEMENT

- A. What is the change management plan to successfully implement the outcomes of the proposed solution?

The project team will facilitate change management through ongoing outreach efforts to students and all departments effected to conduct an interactive, iterative process by which a solution is proposed. More intensive change management activities will be required and conducted during subsequent development and delivery phases that will come as proposed solutions from this discovery phase. The team will also be responsible for generating buy-in from stakeholders and keeping everyone affected informed of the plan and progress against the plan.

During this phase, change management and communication work plans for subsequent development phases will be outlined.

- B. What incentives and/or disincentives are proposed to influence behavioral changes necessary for the successful outcome of the proposed solution?

Incentives

- Meets OE goal of developing efficient policies and procedures by recommending new business rules to help streamline financial communications between the University and students
- Creates a strategic plan for presenting vital financial information to students and authorized staff to better serve the needs of the University

- C. Who has been identified as the change leaders and implementers to carry out the changes necessary for the successful outcome of the proposed solution?

The following campus executives have voiced support for the creation of this proposal:

- Harry Le Grande, Vice Chancellor, Student Affairs
- Erin Gore, Associate Vice Chancellor, CFO

A small working advisory group chaired by Erin Gore (Associate Vice Chancellor, CFO) will be created to guide the analysis effort. The group will consist of representatives from the following areas:

- Billing and Payment Services (BPS)
- Financial Aid & Scholarships Office (FASO)
- Admissions & Enrollment (A&E)
- Graduate Division (GradDiv)
- Residential and Student Services Program (RSSP)
- Controller's Office
- Student Reps from the ASUC & GA (e.g. the ASUC Student Advocate)

Additionally, the following campus resources, SMEs and stakeholder representatives:

- Laura Willoughby, Executive Director, Student Services Technology Initiative
- Student Groups: ASUC, GA, COSE, STC, etc.
- Billing and Payment Services
- Financial Aid & Scholarships Office
- Registrar
- RSSP
- Cal Central
- Enterprise Data Warehouse (EDW) Student Financials Team
- Any additional departments which bill students centrally

VI. FUNDING MODEL AND BUDGET

- A. Could the proposed solution move forward with partial funding? If yes, describe the revised scope, including the associated savings impact.

The CFV sponsors are seeking funding for an initial exploratory phase, the first six months of the program, .i.e \$203,000

- B. What is the plan for sustainable funding to support ongoing operations of the proposed solution?

n/a

- C. Please download and fill out the OE Resource Request Budget Template located at [location] and follow the instructions on the first worksheet in the workbook to complete the budget and line descriptions. Include both completed sheets with the Resource Request.

VII. ASSESSMENT PLAN

Please use the table below to detail your metrics.

METRIC CATEGORY	GOAL	SPECIFIC METRIC (incl. measure basis)	DATA COLLECTION METHOD	DATA COLLECTION FREQUENCY	FUNCTIONAL OWNER OF DATA COLLECTION
FINANCIAL PERFORMANCE					
Exploratory phase is delivered in keeping with expense budget		<i>Budget vs Actual; exploratory phase costs</i>	<i>Monthly download from Bairs</i>	<i>Monthly</i>	<i>Business Analyst</i>
OPERATIONAL PERFORMANCE					
Plan is actionable, realistic, and measurable, and signed off by key stakeholders	<i>Complete and well vetted plans and artifacts</i>	<i>Final work products accepted by Sponsor, OE PO, and technical partners as complete</i>	<i>Artifact Review</i>	<i>Once at end of Exploratory phase</i>	<i>Executive Director</i>

Students lack a consolidated view of fees, financial aid, & payments: a **Quiz**

This student received a **\$1,000** scholarship for the Fall 2012 semester. Why does he still owe **\$295**?
How was the **\$1,000** applied?

Hint : Review the student's **CARS** bills from **September** and **October** (below)
Look at the account information provided by BearFacts and MyFinAid (see next page) →



Campus Accounts
Receivable e-Bill
Statement

STATEMENT PERIOD	09/22/12 - 10/20/12	PAST DUE AMOUNT	.00
DUE DATE	11/15/12	MINIMUM PAYMENT DUE	.00
STUDENT NAME		ACCOUNT BALANCE	295.00
STUDENT ID NUMBER			

Transaction Date	Description	Dept	Due Date	Credits	Charges	Refunds
	PREVIOUS BALANCE				1,205.00	
10/05/12	REFUND CASH/AWARD	BILPAY				395.00
10/05/12	ALUMNI LEADERSHIP AWARD	FINAID		1,000.00		
10/07/12	PAYMENT - THANK YOU	CASH		305.00		

Previous Balance	Credits	Charges	Refunds	Account Balance
1,205.00	\$1,305.00 CR	.00	395.00	295.00

Account Balance Details

Date	Description	Dept	Due Date	Credits	Charges	Refunds
08/22/12	APR CAL DINER	HOUSNG	04/15/13		295.00	
	ACCOUNT BALANCE				295.00	



Campus Accounts
Receivable e-Bill
Statement

STATEMENT PERIOD	08/18/12 - 09/22/12	PAST DUE AMOUNT	5.00
DUE DATE	10/15/12	MINIMUM PAYMENT DUE	305.00
STUDENT NAME		ACCOUNT BALANCE	1,205.00
STUDENT ID NUMBER			

Transaction Date	Description	Dept	Due Date	Credits	Charges	Refunds
	PREVIOUS BALANCE					
08/22/12	SEP CAL DINER	HOUSNG	10/15/12		300.00	
08/22/12	NOV CAL DINER	HOUSNG	11/15/12		300.00	
08/22/12	FEB CAL DINER	HOUSNG	02/15/13		300.00	
08/22/12	APR CAL DINER	HOUSNG	04/15/13		300.00	
09/20/12	ADD ENROLLMENT FEE	REGIST	09/15/12		5.00	

Previous Balance	Credits	Charges	Refunds	Account Balance
.00	\$0.00	1,205.00	.00	1,205.00

Account Balance Details

Date	Description	Dept	Due Date	Credits	Charges	Refunds
09/20/12	FL12 REGISTRATION FEES	REGIST	09/15/12		5.00	
08/22/12	SEP CAL DINER	HOUSNG	10/15/12		300.00	
08/22/12	NOV CAL DINER	HOUSNG	11/15/12		300.00	
08/22/12	FEB CAL DINER	HOUSNG	02/15/13		300.00	
08/22/12	APR CAL DINER	HOUSNG	04/15/13		300.00	
	ACCOUNT BALANCE				1,205.00	

Quiz (continued) : Why does he still owe \$295? How was the \$1,000 scholarship applied?

Hint : Look at the account information provided by BearFacts and MyFinAid (below)



CARS Refund Summary

As of: 11/09/2012

Selected Student:

[Select New Student](#)

Check #	Applied Date	Amount	Type	Status
00352481	10/08/2012	\$395.00	EFT	Paid

[Student Awards](#) [Main Staff Menu](#) [Logout](#) [CalNet Logout](#)

Registration Fee Summary

Fall 2012

As of: 11/09/2012

Selected Student:

[Select New Student](#)

Fee Description	Amount Assessed*
ADD ENROLLMENT FEE	\$5.00
BERKELEY CAMPUS	\$262.25
CLASS PASS FEE - TRANSIT	\$78.50
HEALTH INSURANCE (WAIVED)	\$0.00
STUDENT SERVICES FEE	\$486.00
TUITION	\$5,610.00

Total
 Assessed: \$7,332.75
 Awards: \$5.00
 Payment: \$6,436.75
 Waived: \$891.00
 Balance: \$0.00

*If Assessed Amount is zero, fees involved have either been waived or not yet assessed.

CARS Quick Statement

Fall 2012

As of: 11/08/2012

Selected Student:

[Select New Student](#)

Minimum Amount Due Now: \$0.00
 Minimum Due + Full Reg Fee: \$0.00
 Account Balance: \$295.00

Note:

1. Refer to the billing statement for specific due dates for the account balance.
2. If the account balance is a negative amount, there is a credit balance. If a refund is due, one will be issued in 30-60 days.
3. For payment of University registration fees on the Deferred Payment Plan, refer to the June and November billing statements for the amount of the first installment payment.

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CARS Payment Summary

Fall 2012

As of: 11/08/2012

Selected Student:

[Select New Student](#)

Payment Received	Amount	Status
10/07/2012	\$305.00	
08/12/2012	\$6,436.75	
03/31/2012	\$300.00	
01/09/2012	\$5,417.25	
11/13/2011	\$300.00	
09/12/2011	\$300.00	
08/10/2011	\$6,417.25	
05/02/2011	\$700.00	
03/25/2011	\$55.00	
02/03/2011	\$1,150.00	
01/06/2011	\$5,769.75	
10/07/2010	\$1,170.00	
09/08/2010	\$469.50	
08/10/2010	\$6,985.50	
04/26/2010	\$100.00	
04/23/2010	\$100.00	

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CARS Awards Summary

Fall 2012

As of: 11/08/2012

Selected Student:

[Select New Student](#)

Award Description	Date	Award Amount
ALUMNI LEADERSHIP AWARD	10/05/2012	\$1,000.00

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Award Payment Status

Fall 2012

Award	Accepted	Paid
Alumni Leadership Award	1,000.00	1,000.00
Subtotal	1,000.00	1,000.00

Alumni Leadership Award

10/05/2012 \$1,000.00

Total \$1,000.00

Spring 2013

Award	Accepted	Paid
Alumni Leadership Award	1,000.00	0.00
Subtotal	1,000.00	0.00

Quiz (continued) : Did you figure it out? Well, here's the solution*:

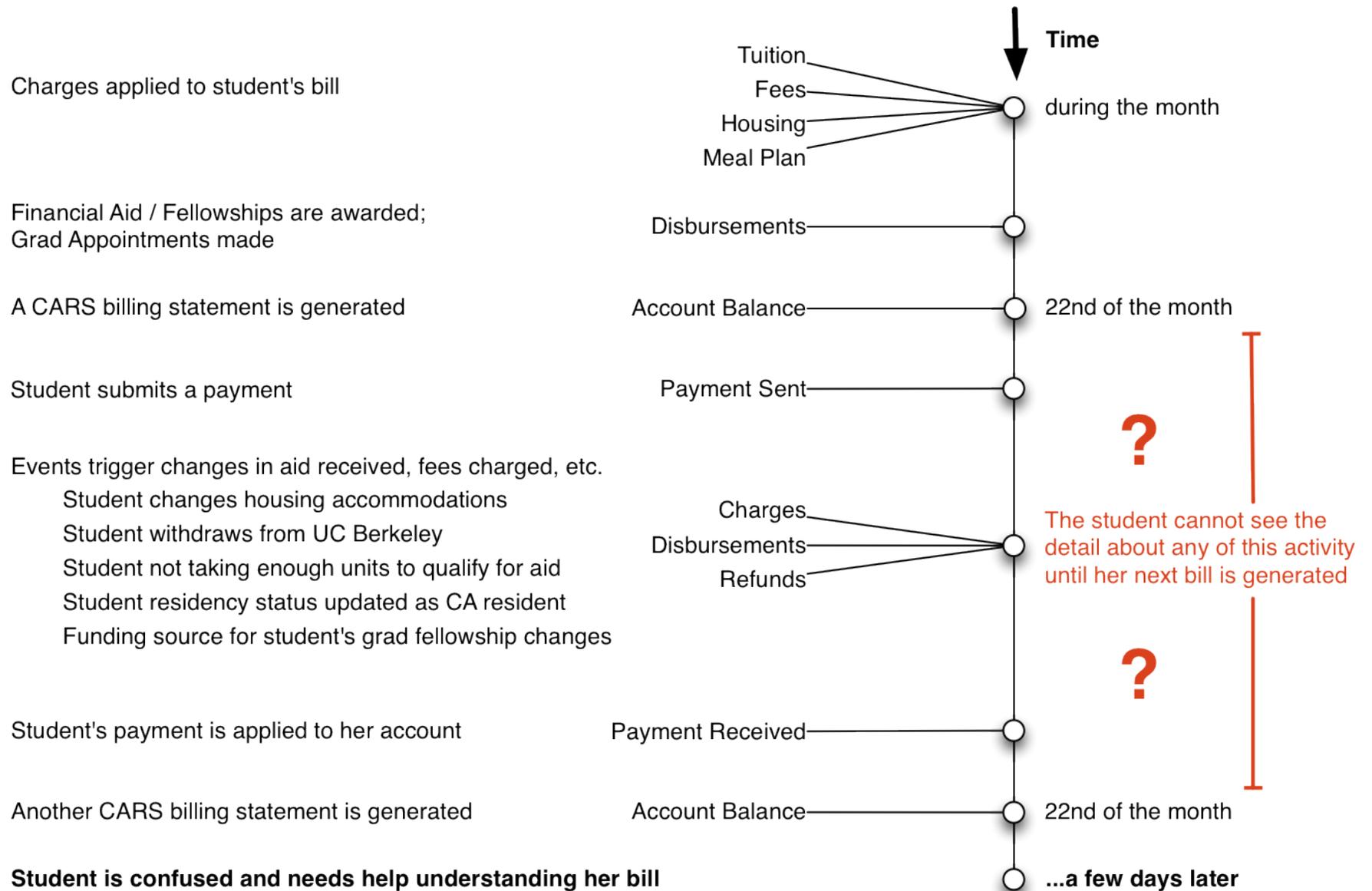
The \$1,000 scholarship applies to Fall 2012 charges

Term	Transaction Date	Description	Dept	Due Date	Amount
FALL 2012	9/20/12	ADD ENROLLMENT FEE	REGIST	9/15/12	\$ 5.00
	8/22/12	SEP CAL DINER	HOUSNG	10/15/12	\$ 300.00
	8/22/12	NOV CAL DINER	HOUSNG	11/15/12	\$ 300.00
	10/5/12	ALUMNI LEADERSHIP AWARD	FINAID		\$ (1,000.00)
		TOTAL CHARGES for FALL			\$ 605.00
		TOTAL CREDITS for FALL			\$ (1,000.00)
	10/5/12	REFUND CASH/AWARD	BILPAY		\$ 395.00
SPRING 2012	8/22/12	FEB CAL DINER	HOUSNG	2/15/13	\$ 300.00
	8/22/12	APR CAL DINER	HOUSNG	4/15/13	\$ 300.00
	10/7/12	PAYMENT - THANK YOU	CASH		\$ (305.00)
		TOTAL CHARGES for FALL			\$ 600.00
		TOTAL CREDITS for SPRING			\$ (305.00)
		ACCOUNT BALANCE			4/15/13 \$ 295.00

The \$295 charge is due in April (Spring 2013)

*This view does not exist anywhere. (It was built by hand using Excel.)

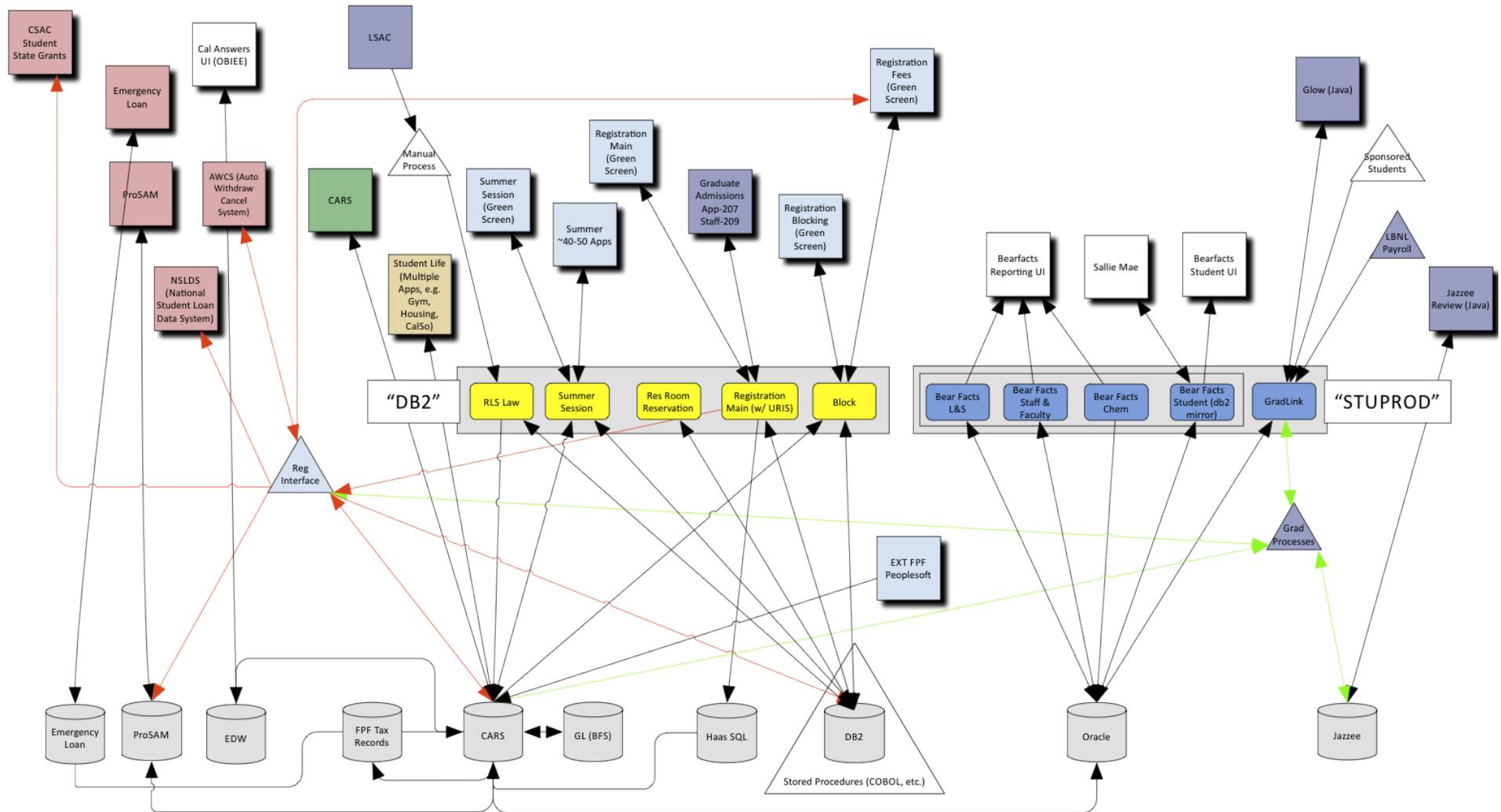
Students lack up-to-date account information; monthly billing snapshots lead to confusion



UC Berkeley Student Financial Systems*

- Registration
- Financial Aid
- Financial Account Processing
- Housing, Dining & Auxiliary Services
- Graduate Fellowships & Appointments
- Reporting Systems

11/07/2012
Sara Quigley



*Other relevant applications and databases may be discovered during the proposed analysis